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William Albert Ingledew

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THE INFLUENCE OF MAJOR DEPARTMENTAL CHAINS ON ADOPTION RATES
AND DEVELOPING PATTERNS OF TRADE INFLOWS
OF NEW CONSUMER PRODUCTS TO THE CANADIAN MARKET

by .

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Submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

Faculty of Graduate Studies
The University of Western Ontario
London, Canada
September 1974

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To Jackie

ABSTRACT

It is the intent of this dissertation to explore the process by which certain consumer products achieve acceptance in markets other than the one in which they were originally commercialized. Specific emphasis is placed on conceptualization of the process by which these new products reach their ultimate Canadian consumers and on identification of those factors which are important influences on the timing and pattern of acceptance of the products from the time of their introduction to the Canadian market. The thesis examines patterns of growth in unit sales and in unit imports for a number of consumer products in the Canadian market. An attempt is made to assess the influence of distribution institutions in Canada on the rate of adoption of these new consumer products and on the developing patterns of trade inflows of these products to the Canadian market.

Underlying the empirical research reported in this dissertation is a theoretical "Diffusion Model" which is founded on the basic premise that in attempting to assess the relative importance of various factors on the timing and pattern of acceptance of new consumer products which originated in foreign markets, one must examine the activities of domestic distribution intermediaries. The model is described in the text.

Specifically, the research is designed first, to identify those institutions in the Canadian economy which have a primary influence on the acceptance of eight new consumer products originally developed outside Canada; second, to determine if a generally consistent sequence

of involvement with these products exists over time for certain types of institutions; and third, to examine in detail the influence of the major departmental chains on the inflows of the selected consumer product innovations and the evolving pattern of their acceptance in the Canadian market.

Data for the study were obtained by means of two distinct processes, one of a primarily quantitative nature and the other with a more qualitative orientation. First, for each of eight products, unit data on total annual Canadian sales, total annual sales through Canada's five largest departmental chains, total annual sales of imported versions and total annual sales of imported versions through the major departmental chains were accumulated for the period from the time they were first offered for sale in Canada. While some of this information was found in government publications or those of industry associations, most was obtained directly from the confidential records of individual firms through the cooperation of senior executives. This data principally is displayed in tabular form showing for each product: annual unit sales, unit imports, and import propensity of the five major departmental chains, compared to the figures for all other types of retail institutions combined. Second, additional qualitative information concerning the timing and strategy for adoption of new consumer products by Canadian distributive institutions was secured through the medium of a mail questionnaire to a probability sample of 360 firms across Canada.

The findings of the study offer powerful support to the three major hypotheses examined. First, they confirm that Canada's five major departmental chains as a group demonstrate a greater propensity

to import new consumer products than do all other retail institutions combined. Second, they reveal that while the major departmental chains will tend not to be the first firms in Canada to adopt a new product, they will, nevertheless, be among the earlier adopters. Finally, the data show that the rate of growth in total Canadian unit sales of these new consumer products tends to increase significantly in the period immediately following adoption by the major departmental chains and, furthermore, that the market share accounted for by the major departmental chains is first found to rise following their adoption of a product but subsequently to decline reflecting the increasing participation of other later adopting retail institutions in the market. Thus the findings appear to offer support to the idea that Canada's major departmental chains perform a linking or "gate-keeper" function in the domestic market, enabling promising new consumer products to progress from a limited specialty segment to a much broader level of acceptance.

The thesis suggests a number of implications of both social and practical significance. The social implications involve such issues as the substantial market power represented by firms such as Canada's major departmental chains, which are capable of intervening directly in the foreign trade process by placing substantial orders with overseas manufacturers, and the relative effectiveness of different distribution structures with respect to speed of introduction and diffusion of consumer product innovations. Management implications touch both manufacturing and distribution segments of the economy, providing guidelines for the formulation of strategy and timing of merchandising activities. It would appear that the increasing speed with which

Canada's departmental chains pick up new product ideas and source them through low cost foreign manufacturers will bring pressure to bear on Canadian producers to bypass domestic production of a new product in favour of buying it abroad and performing a marketing function using their own established distribution facilities, at least until such time as Canadian demand enables them to justify production.

ACKNOWLEDGEMENT

It is with sincere gratitude that I acknowledge the dedicated efforts of the many people whose contributions culminated in the completion of this dissertation.

The exciting research done by Professor Harold Crookell in which he examined the influence of product innovation on trade flows provided the kernel from which this dissertation developed. The monumental task of accumulating field data required in the research was only made possible through the generous cooperation of many senior Canadian retailing and manufacturing executives. Mr. C.R. Sharpe of Simpsons-Sears and Mr. K.A. Jones of the T. Eaton Company in particular, offered continued encouragement and assistance during the most frustrating period of data collection.

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With sincere appreciation of the valuable contributions of the many individuals who made this dissertation a reality, I nevertheless accept complete responsibility for the focus and content of my work.

W.A.I.

September, 1974

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PART 1

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CHAPTER I

INTRODUCTION

Consumers in the world's developed economies are presented with a continuous stream of new products which are designed either to satisfy needs not currently met by existing goods or to exceed the capability of existing goods to satisfy such needs. Often, these products originate in other countries and are subsequently introduced to consumers in any given market through importing. In fact, in the area of consumer goods, consumers in nations other than the United States receive most new product ideas from abroad. The forces leading to the original development of many new products have been well described elsewhere by Vernon and his associates in their work on a product life cycle theory of international trade.⁽¹⁾ However, the subsequent process by which these same new products reach their ultimate consumers, particularly those in markets other than the one in which they originated, has received little attention. Researchers have not, to date, adequately examined such issues as the identification of the primary determinants of the spread of acceptance of a new product from one nation to another and the explanation of differences in time of adoption and pattern of acceptance of a new product between countries.

It is the general intent of this dissertation to explore in depth certain questions which may bear heavily on the issues of how consumer products achieve acceptance in markets other than the one in which they were originally commercialized and what factors are important influences on the pattern of acceptance in these markets from the time

of their introduction. The scope of this research is of necessity broad, touching concepts from such diverse areas as the determinants of international trade flows and the theory of diffusion of innovations. Its focus will be on the field of manufactured consumer products which in general are characterized by relatively complex technologies.

The specific purpose of the dissertation springs from the inability of classical trade and diffusion theory to adequately explain patterns and timing of international movements of new consumer products. This inability, in turn, it will be argued, may be the result of an inappropriate orientation in the theory for dealing with the specialized conditions of consumer goods markets. It is hoped within the confines of the empirical research reported in this document to offer support to a promising new approach to explaining trade movements.

Until recently, the literature of International Trade has almost universally adopted an orientation with two features worthy of particular mention. First, most writings have dealt with international trade flows at the national aggregate level, depicting transactions as occurring between national units. The second important feature of conventional trade theory is that explanations of trade movements have been based almost exclusively on the notion of comparative production cost advantage, with a resulting emphasis on manufacturing or supply factors.

While the macro approach may have been satisfactory for examining international movements of basic commodity products, it is argued that such an approach masks the important influence of certain critical determinants of trade flows operating within nations for the category of manufactured consumer products. Nations themselves do not

conduct trade in consumer goods. Rather it is individuals and firms within the respective nations which enter into trade transactions.

The inappropriateness of focusing exclusively on the activities of manufacturers in explaining trade movements is also borne out in the case of consumer products. It is widely recognized that in purchasing such goods, individual consumers rarely have direct contact with producers. Moreover, the actions of merchandising intermediaries may significantly influence the process by which product innovations reach and are subsequently diffused throughout a market. Thus, it is suggested that an equivalent emphasis should be placed on assessing the influence of individuals and firms acting as distribution intermediaries in shaping patterns of trade in consumer products.

The theory of diffusion of innovations provides a useful base from which to attempt such an assessment of the influence of demand factors on developing patterns of trade in consumer products. It is noteworthy, but not surprising, that the concept of diffusion of innovations has not received mention in any of the writings on trade theory to date. Writers in international trade theory, who previously have paid little attention to demand considerations, would not have been expected to look for help in a concept such as diffusion of innovations which is demand-based. Nevertheless, the central focus of diffusion theory, which traces the process whereby an innovation moves from its initial adoption in a market to a level of broad acceptance, has a great deal to contribute to an understanding of the relationships between demand factors and trade flows. The existence in every market of a partially organized social system with established channels of communication to transmit information concerning new products is a

central argument of diffusion theory and has powerful implications for any theory aimed at understanding and explaining trade flows.

Unfortunately, diffusion theory in its current state has limitations as a tool for understanding the process by which acceptance of new consumer products spreads between nations insofar as it has tended to adopt the point of view of the ultimate consumer within a specific market. While considerable research has been done in the field of diffusion of innovations with respect to patterns of influence among individual consumers and channels of communication between them, there is a notable lack of any theory concerning the potential effect of distribution intermediaries on the introduction of innovations to new markets and on the subsequent chronology of acceptance of these products.

Some recent research in the international trade area has attempted to incorporate demand considerations to a greater extent, as well as discarding the conventional macro approach to examining trade in favour of assessing the potential influence of individual firms within nations. Unfortunately, the majority of this research has adopted the United States market as a frame of reference with little attention being paid to developing patterns of trade with respect to other developed nations. The United States market is unique and hence atypical in one major respect. It is in this market that by far the largest number of consumer product innovations have their commercial origin. Since relatively few consumer products thus have their commercial origin in other nations, it follows that the developing patterns of trade in such products will differ in these markets from the pattern expected in the originating U.S. market. In recognition of the lack of research emphasis on markets other than the U.S., this

dissertation will explore the introduction of several new consumer products to the Canadian market and attempt to trace chronologically the subsequent process by which these products are accepted by Canadian consumers.

Underlying the empirical research reported in this dissertation is a theoretical model which will attempt to improve our understanding of the process by which a new consumer product is introduced to and gains acceptance by consumers in markets other than the one in which it was originally commercialized. This "Diffusion Model", which will be developed in considerable detail in Chapter III, is founded on the basic premise that in attempting to assess the relative importance of various factors as influences on the timing and pattern of acceptance of new consumer products which originated in foreign markets, it is insufficient to consider only the activities of manufacturers. The model focuses on the activities of distribution intermediaries, suggesting that their potential influence may well be of overriding importance. In essence, it suggests that for many consumer products there exists a consistent sequential pattern of involvement of different types of merchandising organizations in the Canadian market from the time the product is first introduced until it achieves general acceptability.

A major objective of this dissertation will be to attempt to demonstrate, for a selected variety of relatively new consumer products, that, in keeping with the central thrust of the Diffusion Model, it is essential to examine the involvement of distributive intermediaries in Canada in attempting to understand the developing patterns of trade inflows to the Canadian market and of acceptance over time. The

research reported in the later chapters has been designed to test a portion of the Diffusion Model by attempting first, to identify and isolate those institutions in the Canadian economy which have a primary influence on the acceptance of a group of new consumer products originally developed abroad, second, to determine if a generally consistent sequence of involvement with these products exists for various types of institutions over time, and third, to examine in detail the influence of one important force in Canada's distributive structure, the major department store chain, on the inflows of the selected consumer product innovations and the evolving pattern of acceptance in the Canadian market. In addition, an attempt will be made in the research to discover and document certain essential features of the merchandising strategies of various types of Canadian distributive firms with respect to new consumer products. In so doing it is hoped to gain further insight into the potential influence of department stores and other key distributive institutions on trade inflows and patterns of new product acceptance in Canada. Moreover, it is hoped that the research findings will contribute to an improved understanding of the forces shaping a product's life cycle in the Canadian market and of the determinants of trade patterns for the important category of non-food consumer goods.

As outlined above, a major focus of the research will be on the potential influence of Canada's major department stores on developing patterns of trade in certain new products. It was decided to devote special attention to the activities of this small select group of organizations in view of the relatively important position occupied by these firms in the retail distribution of a number of consumer

products in Canada. During 1972, the five largest department store chains in Canada accounted for over 18%⁽²⁾ of total dollar retail sales of all goods excluding groceries, automobiles, and fuels, yet their importance to the economy insofar as their influence on the introduction and acceptance of new products in the market is concerned, may even surpass their importance as measured in terms of aggregate retail market share.

While there are undoubtedly differences between individual Canadian firms within the department store category as far as corporate strategy and operations are concerned, the similarities between firms in the category are such that it has been found useful to treat them as a group in comparison with other retail institutions. The five major Canadian department stores in particular demonstrate marked similarity with respect to range of products handled, services offered, access to foreign sources and broad geographical representation. All of these firms have access to overseas sources either through their own buyers or through buying services with which they are associated. However, the extent to which they utilize information concerning foreign products and the strategies they adopt with regard to foreign products has received little attention in the literature. Of particular interest is the extent and rapidity with which the major department stores become involved with product innovations in relation to other types of retail institutions.

Although the category of major department stores has represented a viable grouping in discussing many aspects of Canadian retailing, it remains to determine whether the five major chains will display a significant tendency to mirror one another's activities with respect

to new product strategy. If the differences in strategy and timing of new product involvement between major department store firms are greater than the differences between the department store group and firms representing other types of retail institutions, then it may prove more fruitful to disregard the traditional department store categorization in an examination of the process by which foreign innovations enter and are diffused throughout the Canadian economy.

It has been suggested that the empirical research reported in this dissertation involves a significant departure from the traditional orientation of earlier attempts to examine and explain developing patterns of trade between nations. Associated with the switch in research focus from manufacturers to distributive intermediaries are a number of interesting implications of both social and practical significance.

The social implications of the research provide a major impetus for further study both in Canada and in other markets as they are closely related to the structure of the nation's distributive system. Questions involving relative effectiveness of different distribution structures with respect to speed of introduction and diffusion of consumer product innovations should be of interest to government and business administrators alike who are concerned about shortening the time interval required to place valuable new products in the hands of their intended users. If, for example, the findings of the research reported herein offer support to the concept that certain distributive institutions such as major department store chains not only influence the flow of some categories of new products into Canada but that they also influence the process by which these products are subsequently

diffused throughout the market, then they will have important implications with respect to the pattern of adoption of such products in economies where these distributive institutions are absent or less important constituents of the distributive system.

The management implications of the research, which embrace both business and government, are numerous and varied. For businessmen dealing with the types of products examined in this study the findings may provide important guidelines for merchandise strategy formulation and timing of merchandising activities. Consider, for example, the implications to a foreign innovator. One of the issues he encounters if he wishes to gain entry to the Canadian market with a new consumer product is the question of which type of distributive intermediary in Canada to approach first about handling his product. If the research provides tentative support for the idea that certain types of distributive intermediaries in Canada consistently accept the considerable risk of introducing a new product into a highly uncertain market before other types, the practical significance is great. With knowledge of those specific types of distributive intermediaries in Canada which do tend to adopt new consumer products first, a foreign innovator could more effectively focus his selling efforts on that group of firms most relevant to the objective of gaining a foothold for his new product in the Canadian market.

Conversely, other foreign manufacturers specializing in rapidly copying new products would do well to monitor for promising new product ideas these same distributive intermediaries in Canada who tend to adopt new consumer products first. Those products viewed as having acceptable potential could quickly be offered in a more attractively

priced version to other distributive institutions in Canada. Normally such copies of an original new product idea are in a form which makes them acceptable to a much larger segment of the Canadian market than the original innovation.

Within Canada itself, merchandisers, including retailers, wholesalers and even manufacturers, may find in the research important implications for their operations. Retailers and wholesalers who are currently concerned by the risk and uncertainty associated with the addition of a new product to their assortment may be able to improve their confidence by systematically observing the experience of other distributive institutions in the market who normally adopt new consumer products relatively early.

In some sense, the implications to Canadian manufacturers of the research reported in this document may be most significant. As a result of the considerable risk associated with tooling up to produce a new product for which acceptance in the Canadian market is, at best, uncertain, Canadian manufacturers should welcome any evidence of a consistent sequence of involvement with new consumer products by different types of distributive intermediaries. If Canadian manufacturers could identify certain distributive institutions as being consistent early adopters of new consumer products from abroad, they could evaluate the experience of these firms as an important input to the decision of whether or not to undertake production. Information on the early success of a new consumer product in the Canadian market is particularly important to Canadian producers since they are presented with two options in terms of how they make the new product available if they decide to do so. They may elect either to tool up for partial or

complete manufacture of the product or to have the product made by an existing manufacturer abroad and bring it into Canada for resale through their own distribution network. The latter alternative carries with it an appreciably lower risk of loss to the manufacturer since it requires virtually no investment in production facilities.

The existence of these options to Canadian consumer products manufacturers gives rise to a perhaps more critical implication to Canadians. If the research findings reveal that certain types of distributive institutions in Canada, such as the major department store chains, are quick not only to pick up new product ideas but also to source them through a low cost foreign manufacturer, it would not be unreasonable to expect an increasing tendency on the part of potential Canadian producers of such new products to forego manufacture in favour of buying from existing producers abroad for distribution through their own facilities at least until Canadian demand is sufficient to justify producing themselves.

For those Canadian manufacturers anxious to compete in the innovation forum who are looking for foreign markets, the implications of the research are not unlike those for the foreign innovator attempting to gain entry to the Canadian market. However, the Canadian innovator faces the additional complication that in markets where the structure of the distributive system differs from that of the Canadian market, the timing and pattern of acceptance of a new product will also differ markedly with the result that a different strategy may be appropriate.

And finally, government trade policy formulators and administrators may find in the research important implications with respect

to the rapidly growing category of consumer products. It is hoped that the findings will offer further insight into the complex set of factors affecting trade inflows of consumer products and hence Canada's balance of trade. If the research reveals that certain identifiable distributive institutions in Canada, such as the major department store chains, consistently and profoundly influence the developing patterns of trade in new consumer products, then it follows that the effectiveness of any program aimed specifically at controlling trade inflows of such products would be measurably heightened through the cooperative efforts of these institutions. On the other hand, insofar as these specific types of distributive intermediaries, through importing, are directly responsible for making useful new consumer products available to the bulk of Canadian consumers soon after their introduction, they might be encouraged to continue such activities because of their benefits to Canadian consumers while being discouraged from importing widely accepted mature products which might be displacing Canadian manufactures solely on the basis of lower cost.

In summary, it is the objective of this dissertation to demonstrate that with respect to the broad and rapidly expanding category of consumer products, it is highly relevant and indeed essential to consider the impact of distributive intermediaries in Canada on trade inflows of new products and on the subsequent pattern of acceptance of these products if we are to have a fuller understanding of the complex set of forces influencing Canada's trade patterns in such products. The significance of this study may be considerable as it suggests that most theory and research in the field of international trade to date has been hampered by a seriously misdirected emphasis

on comparative production cost considerations in the exporting nation to the exclusion of marketing and demand considerations in the importing country.

REFERENCES

1. Vernon, Raymond, "International Investment and International Trade in the Product Life Cycle". Quarterly Journal of Economics, Vol. LXXX, May 1966. P. 192
2. Statistics Canada, Retail Trade, Cat. No. 63-005, Vol. 44, No. 12 . (December 1972)

CHAPTER II

REVIEW OF RELATED LITERATURE

Classical Trade Theory

The origin of much of our modern theory of international trade may be traced to the concept of comparative advantage which was introduced by Ricardo and Mill in the late eighteenth century. This important concept has remained the cornerstone of most writings in the field to the present day.

Closely related to the notion of comparative advantage is the production/export orientation which has characterized trade theory, having the effect of attributing the initiation of trade transactions to the producer/exporter. It is a country's production capabilities which are depicted as governing its possibilities for exporting to a second nation and vice-versa.

This production/export orientation is succinctly stated by Kindleberger in his widely used text, International Economics.⁽¹⁾

"Let us assume two countries and two commodities. If each can produce one good cheaper, i.e., with less labour, than it can be produced in the other, each will have an advantage in the production of one commodity and a disadvantage in the production of the other. Each country will then be able to export the commodity in which it has an advantage and import the commodity in which it has a disadvantage."

A principal effect of the production orientation has been an emphasis in the literature on production functions, which are readily quantifiable, rather than on consumption functions which tend to be highly subjective. Patterns of trade have been treated primarily if not exclusively as a function of comparative production costs to the

exclusion of demand considerations. Where demand has been recognized, the discussion of its influence on trade has been limited to a determination of that price at which goods being traded will change hands. (2)

In his extensive search of the international trade literature up to 1958, Caves commented that "the influence of demand on trade patterns had frequently been assumed away or simply ignored." (3) In the special case of undifferentiated commodity products which are widely consumed and subject to intense competitive pressures, a production-cost form of analysis may indeed be highly applicable, since under such market conditions demand tends to reflect costs, being highly responsive to changes in selling price. Nevertheless, even under such mature market conditions, imperfect information and uncertainty may bring about trade patterns quite different from those that might be predicted from comparative cost models.

The fact that international trade theory until recently has been based on analyses of flows of resource-based commodity products is not unreasonable since the volume of trade in these products has indeed been highly significant. Nevertheless, trade in manufactured or synthetic goods is increasingly supplanting trade in resource-based commodities as the number of new manufactured products introduced rises steadily. (4) Furthermore, the dynamic nature of design and product development associated with many manufactured goods tends to result in a more complex pattern of influence on their trade flows than is the case for standardized resource-based commodities. Behrman (5) alluded to many of these complexities in his sharp criticism of Hoffbauer and Adler's U.S. Treasury Department sponsored study of overseas manufacturing investment. (6)

When one considers the increasingly large number of products which do not fit the special case of undifferentiated resource-based commodities, the assumptions of product homogeneity and perfect knowledge, which have long been discarded in most economic theory, but have lingered on in classical trade theory, become clearly unrealistic. The obvious fact is that international trade, in many lines of goods at least, is characterized by oligopoly conditions, distinctly heterogeneous products, and seriously imperfect knowledge. In fact, it has been suggested that risk and uncertainty associated with imperfect knowledge may be one of the most powerful of the forces shaping actual trade flows. (7)

The preoccupation of modern trade theory with production functions rather than consumption appears to be at variance with the facts of the real world. Intuitively one would be hard pressed to explain why production and exporting should receive such a disproportionately greater emphasis in trade theory than consumption and importing. This should not be surprising. To begin with, it is not a "nation" which is the recipient of a product exported by a foreign producer. Rather it is some individual or firm residing in that nation which is the recipient as a result of having expressed a concrete demand for the product to a foreign producer. Furthermore, if we accept the argument first expressed by Vernon (8) that firms in any market are more likely to be aware of the possibility of introducing new products in that market than are firms located elsewhere because of the domestic firm's superior knowledge of the peculiar needs of consumers in its own market, it follows readily that the importing firm which, in fact, expressed a demand for a product is better placed to assess the needs of consumers

in his market than is the foreign producer who actually supplies the product. In this light it is not difficult to accept that the initiator in a trade process might well be the importing firm rather than the exporting producer.

Thus, it would appear that international flows of goods, particularly in the class of consumer products, are determined in part by demand on the part of individuals and firms in the importing country, at least as much as by the output capabilities of firms in exporting nations. Therefore, if a theory of international trade is to be of value as a tool of prediction in our complex economy it must surely have its roots firmly embedded in the demand structure of importing nations as well as in the production capabilities of exporting nations.

A second feature of much trade literature has been the adoption of a macro approach in which nations are depicted as decision-making units trading among each other.

Peter Kenen summarized this approach in the introductory chapter to his book, *International Economics*.⁽⁹⁾

"The international economist looks at the world as a community of separate nations, each with its own constellation of natural resources, capital knowledge and manpower, its own social and economic institutions, and its own economic policies. He usually assumes that domestic transport costs are negligible and that domestic markets are purely competitive. He often assumes that labour and capital are perfectly mobile within every country, but not free to move from one country to the next:

Using these assumptions, he seeks to explain flows of foreign trade and foreign investment, to assess their impact on domestic welfare, and to forecast their response to changes in policy."

Like the production orientation of trade literature, the macro or nation-to-nation approach is not without serious shortcomings. While

it may be valid to discuss trade flows in certain commodities such as agricultural products or base metals in national aggregate terms, there are strong indications that trade patterns for many other manufactured products are largely influenced by decisions taken at the level of discrete corporate organizations within nations. In fact, to say that nations engage in trade in such items as consumer products is a convenient but misleading fiction. Rather, it is individual firms which enter into trade transactions except for certain universal basic necessities or for centralized economies. The statistics of international trade represent the summation of thousands of decisions made and executed by businessmen. Consequently, to understand more fully the factors influencing trade flows, with the goal of better prediction, one must surely understand the factors which govern the decisions made by these businessmen. All this is to suggest that a micro approach in which trade is examined at the level of the decision-making process of individual firms may be a potentially more useful starting point than the macro approach which has heretofore been strongly favoured.

In the early twentieth century an important refinement of the basic comparative advantage model of international trade was made by two Swedish economists, Heckscher and Ohlin, when they advanced their factor proportions theorem.⁽¹⁰⁾ Simply stated, their argument was that differences in relative factor proportions between two countries are the most important determinants of trade, in that any nation will tend to export those products which are intensive users of the relatively abundant factor of production in that country. The "factors of production" referred to in the theorem have traditionally been simplified to labour and capital.

Empirical tests of the factor proportions model have failed to sustain the theory, being at best inconclusive.⁽¹¹⁾ In fact, the findings of one early attempt to confirm the theory for trade in manufactured items ran counter to what one would expect on the basis of the Heckscher-Ohlin theorem. Leontief,⁽¹²⁾ whose study is now a well-known contradiction of the Heckscher-Ohlin Model, found that in United States manufacturing industries, the capital/labour ratio in United States exports is considerably lower than in the nation's imports. This celebrated test of the model has spawned a number of other empirical tests,⁽¹³⁾ which together have contributed to a growing dissatisfaction with the comparative advantage model. In his own writings,⁽¹⁴⁾ Ohlin himself tried to save the factor proportions theorem by granting that other cost factors such as economies of scale, transportation costs and tariffs might also influence trade patterns.

It is worth noting at this point that both the traditional production orientation and the macro approach which characterized earlier trade theory were perpetuated in the works of Heckscher and Ohlin.

The Emergence of Demand Considerations in Trade Models

One of the first important attempts to break away from these traditional orientations of trade theory was made by Staffan Burenstam Linder in a book published in 1961.⁽¹⁵⁾ He elevated demand considerations to a much more prominent position in his work. Basic to his contribution was the argument that the demand structures of nations are important determinants of the pattern of trade between them in that "the more similar the demand structures of two countries, the more

intensive, potentially, is the trade between the two".⁽¹⁶⁾ Unfortunately, although he recognized that such factors as language, culture, religion and climate might influence the demand structure of a nation, Burenstam-Linder was nevertheless content to work with the single measure of average per capita income as representative of a nation's demand structure. Thus, all his findings are dependent on the validity of this measure as a reflection of a country's demand structure.

Further to the central theme of his writings, Burenstam-Linder argued that a nation's internal demand determined which products were potential exports, as well as which ones might be imported. In his own words, "the range of potential exports is identical to, or included in, the range of potential imports, and both are determined by the internal demand in that country".⁽¹⁷⁾ His statement that no country could achieve a comparative advantage in the production, and thus export, of a good which is not demanded in the home market was an important qualification to the trade theory which preceded it.

A second important advance made by Burenstam-Linder was a recognition of a so-called "entrepreneur", whom he depicted as responding to a perceived need in his own market by developing a commercializable product appropriate to the satisfaction of the need. With respect to the entrepreneur's activities, he argued that these individuals would never think of satisfying a need which did not exist at home.

By far the most important contribution of Burenstam-Linder's work was the idea of a relationship between a nation's demand structure (for which he chose the measure of level of per capita income) and the nature and types of consumer goods demanded. He spoke for the first time

of "qualitative" changes in demand as a result of higher income rather than the "quantitative" changes which were the sole concern of earlier writers in the field. Burenstam-Linder even went so far as to suggest that "the cost unlimited scope for product differentiation could, in combination with seemingly unrestricted buyer idiosyncrasies, make possible flourishing trade in what is virtually the same product."⁽¹⁸⁾ While he recognized this possibility, it was left to later writers to provide an adequate explanation of such a phenomenon.

Several recent refinements to the work of Burenstam-Linder have been made by writers such as Vernon⁽¹⁹⁾, Hufbauer⁽²⁰⁾, Hirsch⁽²¹⁾ and Wells⁽²²⁾. Like him, they all chose to perpetuate the use of the average per capita income as the single representation of a nation's demand structure. Thus, although the importance of demand considerations was again recognized, the use of a gross aggregate tool to measure it was subject to the limitations of using any macro tool to measure a micro concept.

The Product Life Cycle Concept in Trade Theory

Vernon has been perhaps the most instrumental to date in pushing trade theory from its heretofore traditional place in the field of economic theory into the realm of marketing theory, which draws from the areas of psychology and sociology as well as economics. In particular, he brought to economic trade theory an important dynamic concept from marketing, namely, that of the "product life cycle". He added to existing theories of trade the idea that timing of innovation had a significant influence on trade patterns.

It is significant that while the product life cycle theory does

not even today possess the rigour associated with other existing trade theory, some economists have nevertheless begun to accept many of the essential elements of the product life cycle theory and have begun to put the pieces back together in a more rigorous form. (23)

The assumptions which underly the Product Life Cycle Model of International Trade constitute a significant departure from those assumptions of much of earlier trade theory and form an integral part of the model itself. These assumptions were delineated by Wells in the introductory chapter to his recent book (24) and are as follows:

- (a) The flow of information across national borders is restricted
- (b) Products undergo predictable changes in their production and marketing characteristics over time
- (c) The production process is characterized by economies of scale
- (d) The production process changes over time
- (e) Tastes differ in different countries

Turning to his model, Vernon reasoned that since the United States had by far the largest per capita income, an entrepreneur in the United States would most likely be first to perceive of an opportunity for new "high-income" or labour-saving products. The basis for such an argument was the idea first advanced by Burenstam-Linder that an entrepreneur in any market is more likely to be aware of the possibility of introducing new products in that market than is an entrepreneur located elsewhere. Vernon went on to assert that the first production facilities for new high-income or labour-saving products would also be located in the United States because of the necessity for rapid communication between the market and producer in the early stages of a

product's existence. Thus, Vernon removed an important constraint of earlier trade theory by treating information not as being free and completely available to all but rather as a commodity with which identifiable costs were associated. In so doing, he focused more sharply on the relevance to trade theory of decisions taken within individual firms, namely those which were responsible for the original development of certain new consumer products.

Since new high-income or labour-saving products would first be produced and commercialized in the United States market, according to Vernon's reasoning, it also followed that the United States would rapidly become an exporter of the new product to other nations because of the technological lag in these countries. However, as the required technology became widely known and product design more standardized, some of the importing nations would first replace imports from the United States with domestically produced goods, then begin to export themselves thus competing with the United States in third markets, and finally perhaps even export to the relatively high cost United States market.

Such a novel dynamic approach to explaining trade patterns for certain types of goods quickly attracted the attention of others working in the area and a number of empirical studies were undertaken which were aimed directly at some of the ideas expressed in the Vernon model.

Studies done by Hirsch⁽²⁵⁾ and Freeman⁽²⁶⁾ in 1965 of the electronics industry and by Hufbauer⁽²⁷⁾ in 1966 of the synthetic materials industry yielded comparable and consistent results. Empirical evidence drawn from these two industries confirms that the United States does appear to enjoy world leadership in the production and export of

those innovative new products for which United States firms are at the forefront of technology, while showing a tendency to import other products for which the technology is widely known throughout the world.

In an unpublished Doctoral thesis in 1967, Wells⁽²⁸⁾ accumulated data from the United States appliance industry which demonstrated a high correlation between improving United States export performance and high income elasticity. Such a finding is consistent with those reported above and, furthermore, supports Vernon's suggestion that the United States, because it is the world's highest income market, enjoys a competitive edge in the production of goods which appeal to high income families.

Collectively, the results of these empirical studies were neatly summed up in an article by Gruba, Mehta and Vernon⁽²⁹⁾ in which the authors stated that "the findings, when drawn together, paint a fairly consistent picture. They suggest the existence of national markets in which the economies of large scale and barriers to entry stem from the requirements of successful product innovation and successful marketing, rather than from capital intensity."

One of the more obvious applications of the cycle theory of international trade as first laid down by Vernon is with respect to the inapplicability of the Heckscher-Ohlin theorem to the United States market as demonstrated by Leontief. The findings of the research related to the cycle theory lend support to the argument that the United States tends to be a net exporter of new and growth products and a net importer of products whose technology is widely known and which are standardized in design. As major automation can only occur after production technology and product design have stabilized and a product enjoys a

relatively large and assured market, it follows that capital intensity should be associated with established products and labour intensity with new products. Hence, United States exports tend to be labour intensive relative to imports because they are composed of innovative new products while the imports, generally speaking, are of standardized products from lower-wage countries.

While this recent development in international trade theory incorporating the concept of a product life cycle represents an important advance insofar as it introduces dynamism into a previously static theory, it is not without limitations. Vernon himself emphasized the fact that the scope of his cycle model was restricted to certain types of products only, namely those associated with high income or those which substitute capital for labour.⁽³⁰⁾ Wells⁽³¹⁾ further limited the types of product to which the model applied by stating that in addition to the restrictions laid down by Vernon, a product had to have a unique appeal to the United States market and had to be capable of a reduction in unit costs as scale of its production increased in order for the developing pattern of trade in that product to be explained by the life cycle model.

More recently, Wells has incorporated some of the principal limitations of Vernon's model into two modifications of the basic cycle model.⁽³²⁾ In the first, he argued that for products for which the income elasticity of demand is so high that no national market is large enough to support production at a level where scale economies lead to a significant fall in unit costs, "pockets" of specialized production may arise near clusters of high income consumers in various countries. In the second, he commented that it was the existence of different models

of a product which explained the fact that a nation may coincidentally export and import products of the same product category. He argued that each country would have a comparative cost advantage in a version of a product for which home demand is strong relative to that in other countries.

The first indication of a more serious limitation to the Vernon model was briefly alluded to in an unpublished Doctoral thesis of Harold Crookell⁽³³⁾ in 1970. The original intent of his research as set out in the abstract was "to test empirically the thesis set forth by Vernon that trade flows in certain categories of goods are determined more by product innovation than by factor costs". Crookell examined actual data on trade between Canada and the United States but unlike all the earlier empirical work in the area, he elected to adopt the standpoint of the Canadian economy rather than that of the United States. Hitherto researchers had focused exclusively on the United States market, with two important consequences.

First, since virtually all of the products actually examined in these empirical studies had been pioneered and originally commercialized in the United States market, it followed that they would be exported to other nations before attempts would be made to undertake production abroad. However, because all the researchers perpetuated the export orientation referred to earlier, an important unsupported implication of their findings was that the impetus or stimulus to the original and subsequent exports of a new product from the United States came from the producer/exporter in the United States market. As the ultimate objective of any theory must be to explain a phenomenon rather than merely to describe it, it is insufficient, in this writer's

opinion, merely to confirm that certain products first developed and commercialized in the United States are indeed exported to other nations before being produced in those nations, as research to date has shown. Rather one must examine the exports from the standpoint of determining if a consistent pattern exists concerning the origin and timing of the stimuli which ultimately lead to a trade transaction involving a new product. There are, in the statements of several senior officials of merchandising firms in Canada, powerful suggestions that international flows of many consumer products are determined by demand on the part of individuals and firms in the importing country at least as much as by the output capabilities of firms in the exporting nation. Consequently, the preoccupation of researchers to date with the U.S. market and thus with exporting of new products has tended to avoid the issues of what forces actually gave rise to the first trade transactions in various new products and what was the origin of these forces. It was not until Crookell's work that an examination was made of United States exports of new products from the standpoint of a nation other than the United States itself. The switch in point of view gave rise to some important implications, one of the more noteworthy of which Crookell chose to comment on in his "Suggestions for Further Research":

"Historically, the question of international trade has been viewed from the standpoint of the exporting country and its relative production costs. This study has illustrated that exports from the United States were generally higher priced than Canadian production and that they tended to be directed towards countries with similar demand structure. Furthermore, with some products, the initiative to trade came from Canadian importing firms, often department stores. The role of importer initiative in the diffusion of foreign innovations into the domestic economy appears to constitute a very appealing topic for further study."

The second consequence of the preoccupation of researchers with the United States market is directly related to the argument of the cycle model that because the United States has the highest average per capita income, "entrepreneurs in the United States may be assumed to be first aware of opportunities to satisfy new wants associated with high income levels"⁽³⁵⁾ and furthermore "that the first producing facilities for such products will be located in the United States".

Such an argument is entirely dependent on the validity of a macro economic measure, national average per capita income, as an indicator of a micro concept, demand for products which promise to satisfy high income wants. Since all the empirical research on the cycle model to date has adopted the point of view of the United States market, the focus has, not surprisingly, been on exports of products which were known to have been developed first in the United States. Products which in fact had their commercial origin in nations other than the United States received little if any attention in the research, a fact which further strengthened the arguments of the cycle theory.

Interestingly, Vernon himself was aware that some products of the type his model was designed to handle had been first introduced in countries other than the United States. In his initial article concerning the cycle model he commented "there are very few countries that have failed to introduce at least a few products; and there are some, such as Germany and Japan which have been responsible for a considerable number of such introductions."⁽³⁶⁾ Thus it would appear that more attention might be paid in trade theory to the concept of demand itself and to improving our understanding not only of what measures represent reliable indicators of demand but also of how demand influences developing

patterns of trade for certain kinds of products. Apparently the high national average per capita income in the United States is not alone sufficient to ensure that all new products which promise to satisfy high income wants will have their commercial origin in that country. There are, to the contrary, numerous instances of such products being offered first elsewhere. In these later cases it remains to determine the developing patterns of trade which follow a product's introduction in its original market with particular emphasis on the role of the United States in the trade pattern.

It has been implied that much of the shortcoming attributed to the cycle model of trade is related to the treatment of demand in the model. While the potential influence of demand on the development of new products which are subsequently exported has been emphasized, demand has not been measured in terms appropriate to a consideration of its influence, nor has the potential influence of demand factors on the development of trade patterns been explored in depth, particularly in the cases of nations other than the one in which the product originated.

With respect to the former criticism, since "demand" is at root a social phenomenon specific to an individual or a group of individuals acting as a purchasing unit, it follows that any examination of demand aimed at improved understanding and effective prediction should be conducted at least to a considerable extent at the micro level of the individual or firm rather than exclusively in such terms as national average per capita income. It is not the intention of the writer to take issue with the fact that a high income is one of perhaps several requisite characteristics of any individual who is likely to express a need for what Vernon called "high income" products. However,

it is essential to point out that the high income feature must be associated with a specific individual if a demand for a "high income" product is to be expressed. The assumption that a high national average per capita income is the single most valid measure of whether demand for high income products will be expressed by individuals within that country is tenuous at best. Certainly the converse is not true, since it is known that many nations (e.g., Italy, Mexico) with large masses of extremely low income inhabitants and hence low national average per capita incomes nevertheless have sizeable numbers of individuals with sufficiently large incomes that they will express a demand for high income products. It is the presence of such a large proportion of individuals with relatively high incomes in the U.S. market which has led to the innovation in that country of so many products which appeal to high income needs and not the mere fact that when total national income is hypothetically allocated across all the inhabitants of a nation the United States yields substantially the highest per capita value. Similarly, it may be the presence of sizeable numbers of high income individuals in other nations with relatively lower average per capita incomes which explains the fact that some high income products nevertheless do have their commercial origin outside the United States market.

It is also important to note that there may be substantial differences in the nature of the needs expressed by individuals who enjoy similar high incomes but reside in different nations or even different areas of the same country. Many of these differences may be traced to differing cultural heritages or environmental conditions. However, regardless of their source, these differences will be mani-

festated in demands for products of quite different characteristics if the net result of optimal need satisfaction is to be attained.

With respect to this discussion of demand and its relevance to developing patterns of trade in certain products, there remains a feature of the cycle model which appears to be at variance with the facts of the real world. The model holds that as a product progresses through its life cycle it is economic costs, including costs of production, transport costs, and tariffs, which determine whether the product will be produced in the home market or imported from abroad. While economic cost may indeed be the sole determinant in the case of undifferentiated commodity-like products, the situation where most consumer products are involved is more complex. Programs of continual product development on the part of manufacturers result in numerous often subtle differences between models of a product which otherwise perform essentially identical functions. Hence, although Canadian based manufacturers are frequently able to become competitive in the production of a particular model of a product, as the product progresses through its life cycle, the appearance of other models incorporating slightly different product features tends to cloud the issue of where a product will be produced. There are numerous instances of products for which some units are manufactured in Canada, at the same time that both higher and lower priced units are being imported from foreign producers. Thus, in the cases of many consumer products, it is not economic costs alone which determine whether a product will be produced in the home market or imported from abroad. One of the major findings of Crookell's work revealed that for virtually every product studied, the average landed cost of units of the product imported from the

United States exceeded the average factory cost of Canadian produced units. (37) Vernon's model, to the contrary, would hold that as the cost of production in Canada fell below the landed cost of an import from the United States, these imports would be displaced by Canadian production. One suggestion of Crookell's finding is that Canadian consumers at least do not appear to be motivated by economic cost considerations alone in their choice of products.

In support of this finding, marketing theory has long argued that the motivations which lead an individual to demand a particular product are seldom based on economic cost alone but rather involve in addition a variety of non-economic considerations. Consequently, the situation observed by Crookell in which consumers were apparently prepared to pay more for an imported product than for a similar one which was currently being produced and sold in Canada at a lower price should not be too surprising. The influence of non-economic factors on demand is compounded by the fact that, because knowledge is not a universal free good, consumers may simply not be aware of a lower economic cost alternative which does, in fact, exist. Recognition of the importance of non-economic influence in shaping demand appears to be especially relevant in the case of products designed to satisfy the needs of high income consumers, for it is precisely this type of product which demonstrates the lowest price elasticity, particularly in the early period of its life cycle.

Crookell's findings also show that those decisions leading to the importation of a good into a country are made by different individuals or groups, and are of a distinctly different nature than decisions leading to export. Most products are neither entirely produced in the

domestic market nor entirely imported, as the cycle model would suggest. A more typical situation is one in which a product is not only produced domestically for consumption both at home and abroad but is simultaneously being imported for domestic consumption as well. While there may be some differences in product features between models coming from different sources, these differences are frequently subtle.

The Product Life Cycle Concept and Diffusion Theory

If improvements are to be made to the existing theory of international trade one fruitful approach to recasting theory would appear to be the adoption of a micro orientation. An examination of the decision making processes in individual organizations, both buying and selling should prove to be an important means of obtaining a better understanding of the forces influencing trade flows. Certainly more attention might be directed toward a study of demand at the level of individual firm or group buyers if we accept the fact that product information is not a free good. And we have seen that in any meaningful theory of international trade, information cannot be considered a free good.

Marketing theory has a great deal to contribute to an understanding of the relationships between demand and trade flows, and the theory to be developed subsequently borrows extensively from two important and related marketing concepts. First is the life cycle concept, which has lately received a great deal of attention in the literature. Second is the closely related concept of "diffusion of innovation", which hitherto has not been mentioned in the literature of international trade.

The principal effect of incorporating the life cycle concept into international trade theory has been to inject a dynamic note into an otherwise static body of theory. The concept, which accepts the notion of imperfect information, introduces the whole idea of continuous change in competitive conditions over the life of a product. It suggests that comparative advantage is a shifting rather than fixed condition over time, and that for the category of "high income" products, the innovating nation tends to retain a strategic competitive advantage in the early stages of a product's life, due to the need to locate production close to the market, but loses this advantage gradually as the product matures, margins narrow and low production costs assume greater importance.

Perhaps surprisingly, although he employed the product life cycle concept in his model, Vernon did not explicitly address such issues as the determinants underlying acceptance of an innovation by consumers in one nation, its subsequent adoption in other nations, and the factors influencing the timing of the adoption of innovations in different countries. It is, nevertheless, the adoption process described by diffusion theory which provides the theoretical rationale for the S-shaped sales growth curve of the product life cycle.

The concept of "diffusion of innovation" has arisen from an emerging field of study in which attempts have been made to describe more precisely the process of acceptance or adoption of new products by individuals and groups within society. Briefly stated, diffusion theory is concerned with tracing the route along which an innovation moves from the time it is initially introduced until it achieves wide acceptance.

Although the theory of diffusion of innovation is still in its

embryonic stages, its emphasis is clear. A society is not a homogeneous mass behaving as a unit. Nor is it an atomistic assembly of individuals, but a partially organized social system with many sub-groups, each with its own channels of communication and each linked to one or more other sub-groups. The theory holds that for an innovation to be widely adopted, there must be awareness and availability within and between sub-groups. Important agents who understand other established social systems and the needs of individuals within them act as linking agents between sub-groups, thereby serving as catalysts in the adoption process. The nature and structure of these social systems in any culture can have a significant effect on the rate at which innovations are adopted in that culture.

Perhaps the most prolific writer in the field of diffusion theory, Everett Rogers, a sociologist, has been instrumental in pulling together many of the important research studies of the diffusion process into a single volume. (38) Included are such diverse studies as the famous Hybrid Seed Corn Study of 1941 (39) which revealed that adoption by farmers was a multi-stage learning process and the Katz, Menzel and Coleman (40) study of the process by which doctors adopted a new anti-biotic miracle drug. This latter study revealed that certain specific characteristics were important correlates of innovative behavior by doctors.

More recent work in the field of diffusion theory has focused and enlarged on the learning processes of individual adoptors. Learning is thought to pass through a number of inter-connected stages from awareness to interest, evaluation, trial and ultimate adoption with the option of a discontinuation of the process always present at every stage.

At each of these stages different factors appear to come into play to push the process on towards ultimate adoption. For example, it is felt that mass advertising may have an important role in initiating awareness but personal characteristics of the individual determine whether the awareness is translated into interest. In the evaluation stage the opinions of peers and friends appear to be influential while product characteristics and ease of purchase are vital during the trial and adoption stages. The behavior of an individual throughout the total adoption process has been characterized as one of dealing with perceived risk.

In addition to studying the diffusion process from the point of view of an individual, attempts have been made to apply diffusion theory to the adoption of new products or processes by a firm, an approach which introduces organizational constraints into the learning process. Here the rate of adoption is thought to be influenced by the firm's perception of

- a) the compatibility of the innovation with present operations and plans, and
- b) the apparent profitability of the innovation.

The results of one study have yielded evidence suggesting that larger sized firms adopt innovations more rapidly than smaller ones, likely reflecting the level of perceived risk inherent in the innovation

when compared to corporate resources. (41)

One of the unfortunate shortcomings of many research studies conducted to date in the area of diffusion of innovations is that they have tended to focus on diffusion among small groups residing in a small area or single community. Clearly, if diffusion theory is to make a

worthwhile contribution to the field of international trade, then the scope of diffusion studies must be expanded greatly. Recently some attempts have been made by Hagerstrand to conceptualize the diffusion of innovations among central places (eg. cities).⁽⁴²⁾ He talked of the existence of networks of social communications which connect particular "places" to the exclusion of others.⁽⁴³⁾ Hagerstrand proposed that there is a hierarchy of such networks: one operating at the local level, one at the regional level of a nation and a third at the international level. He argued that diffusion among individuals would occur through a local network while diffusion viewed at a higher level of aggregation, for example between principal cities in a region, would occur through a regional network. Diffusion through levels of aggregation would occur through a hierarchy of networks of social communication.

Brown introduced a further refinement to the spatial diffusion theory advanced by Hagerstrand when he added what he called "market factors" to the information factors of the existing model.⁽⁴⁴⁾

"The theory," he said, "should recognize two distinct and necessary sub-processes. The first is gaining effective information about the innovation, which may result from inter-personal communication, communication through the mass media, or by exposure to the innovation at the distribution center, all in sufficient quantity to overcome the potential adopter's resistance towards adoption. The second sub-process is acquiring the innovation, which occurs when an individual who has gained effective information about the innovation journeys to a distribution center which contains the innovation."

Thus, Brown argued that in addition to examining the physical

distance between the sender of information concerning a new product and a potential adopter, "an understanding of innovation, adoption must consider factors such as the shopping behavior of the potential adopter and the distribution policies of the propagator of the innovation." If a market utilized by the potential adopter is not one in which the innovation is currently distributed, then the adoption process will be retarded.

It is interesting to note that while Brown did make the important observation that market factors related to the acquisition of an innovation are important in shaping patterns of diffusion, he chose to focus on the distribution policies of the original developer of the innovation. Particularly in the field of manufactured consumer products, which his study examined, it is difficult to comprehend how he could overlook the role of distributive firms who provide an essential link between the actual manufacturer and the consumer.

One of the major conclusions of Brown's research has important economic development implications. His study provided evidence that "development planners and other agents of change should concentrate upon manipulating the distribution policy of the propagator of the innovation, since this is the only element of the system which has great control over the extent of diffusion and is subject to manipulation." While shopping trip behavior and personal communication also influence the process of diffusion, he pointed out that they could not be manipulated by an outsider, at least in the short term.

Innovation and The Entrepreneur

The vital role of innovation is a topic which has received a

great deal of attention among Canadian businessmen and government policy makers in recent years. Considerable concern has been registered by many writers about the disproportionately small and apparently decreasing amount of industrial innovation conducted by firms within Canada. (45) Such a situation is generally recognized as being detrimental to the maintenance of a healthy, rapidly expanding Canadian economy. In this connection, it is significant that one of the most frequently mentioned impediments to innovation in Canadian manufacturing industry has been the limited size of markets available within Canada. (46) The importance of sizable markets and demand to the process of innovation has been borne out by the results of empirical studies which have explicitly examined the relative importance of market need and technological opportunity as stimuli to innovation. Keith Pavitt (47) reported that in studies he conducted between 66 and 77% of innovations resulted from the "demand pull" of the market rather than the "technology-push" of technological opportunity. The powerful influence of demand on innovation in a nation was further emphasized by Wells (48) who reasoned that in accordance with the assumption of a limited flow of information across national borders, a country would be more likely to innovate products and processes for which it has a relatively strong demand. An interesting contradiction of this statement was provided by Pavitt (49) who found that "some small, recently created, science-based firms in Europe go so far as to export their most sophisticated products to the U.S.A. before launching them on European markets". The apparent explanation for this phenomenon would be that the strength and magnitude of demand in the relatively advanced United States market is such that it transcends national boundaries,

overpowering the less significant demands expressed in the domestic market.

Throughout all the literature dealing with the process of innovation reference is made to the role of the "entrepreneur", a role not unimportant to this discussion of trade theory. Entrepreneurship is a concept which has existed for centuries but has come into prominence only recently with the development and use of the concept of a product life cycle. The precise nature of the entrepreneurial function has eluded adequate definition up to the present, but better understanding of this function may well prove the key to improved theory in such areas as diffusion of innovation and international trade.

In an early definition with a distinct supply orientation, Schumpeter described "entrepreneurs" as being, "the individuals whose function it is to carry out new combinations of means of production."⁽⁵⁰⁾ Implicit in this definition is the assumption of a demand being expressed for whatever product results from the new combination of means of production. With demand occupying a prominent place in his cycle model of trade, Vernon could not accept such a definition and offered another. He described an "entrepreneur" as being the one who had to intervene to accept the risks involved in testing whether the large gap could be bridged which ordinarily exists between the knowledge of a scientific principle and the embodiment of the principle in a marketable product. Thus, Vernon for the first time cast the entrepreneur in a role in which he effectively acts as a link between supply and demand considerations. Nevertheless, an important aspect of Vernon's concept of the entrepreneur was that this individual had to possess a production capability. "Producers in any market," he said,

"are more likely to be aware of the possibility of introducing new products in that market than producers elsewhere would be."

If we turn to the field of international trade and specifically to the role of entrepreneurship in a theory of trade, Vernon's definition may itself prove restricting, particularly if we adopt the standpoint of importing nations. It is to be remembered that Vernon concentrated exclusively in his work on the United States market and on products which had their commercial origin in the United States. Consequently it stands to reason that he would focus uniquely on the activity of producers in attempting to explain the initial introduction of these products to the United States market. However, if we at this point switch our point of view to another nation, (i.e., Canada), it is not at all clear that it need be a producer located in Canada who is most likely to be aware of the possibility of introducing the same new products to the Canadian market. Given that these new products already exist in the United States market and hence are visible to any potential consumer in Canada, a buying organization or merchandising firm, or even a well informed individual located in Canada may be just as likely as any Canadian-based producer to be aware of the possibility of introducing these products to Canadian consumers.

All this is to suggest that while the life cycles of a given new product in different nations are likely inter-related, they may nevertheless have distinct origins. Just as the original innovating producer of a product first introduced to the United States market plays a vital role in the life cycle of that product in the United States, so does the individual or firm which subsequently makes the same product available for the first time in the Canadian market play an important

role in the life cycle of the product in Canada. However, unlike the situation in the United States market where the product had its commercial origin, in Canada the task of introducing to Canadian consumers a product which is already being sold abroad may be performed by firms or individuals which do not engage in production at all but rather act in a purely distributive intermediary capacity. Through the medium of importing, Canadians are able to enjoy new products before a single unit is produced at home.

Thus, as we expand the scope of our investigation of the foreign trade process and begin to examine trade flows from the standpoint of nations which are secondary recipients of a new product the need for a broader, more comprehensive definition of the entrepreneurial function is apparent.

One potentially fruitful way of recasting the concept of entrepreneurship in more meaningful terms is to specify those functions which as a minimum must be performed by any individual or firm in order for it to be classed as an entrepreneur. To isolate these minimum functions it is useful to return briefly to the product life cycle concept. The product life cycle model as it is typically discussed begins with the so-called "introductory" stage and traces a product through a sequence of interconnected stages, each exhibiting a different set of competitive conditions until the "decline" stage at which point demand for the product begins to drop off. (51) Since by definition the life cycle of any product commences with the "birth" or commercial introduction of the product, those activities involving the product prior to its being offered to consumers in a marketable form are not normally included in the theory of a product life cycle. These

precommercialization activities are, nonetheless of critical importance⁽⁵²⁾ to the ultimate success of any product and are very much the concern of those performing the entrepreneurial function.

While the nature and number of activities which precede a product's full-scale commercialization will vary according to the characteristics of individual products, there are certain elements which will be common to all. In the case of manufactured products, these elemental activities include discovery, invention, innovation and production. One of the more concise descriptions of these activities was given by Marquez.⁽⁵³⁾ "Discovery" he described as being "the process by which new knowledge is added to the existing and available store of knowledge", while "invention" was the application of new or previously existing knowledge to a new solution of a practical problem. "Innovation" Marquez described as "the imaginative synthesis of resources - technological, financial and human - to achieve the satisfaction of a human want by the practical exploitation of inventions within acceptable economic limitations". Included in this "innovation" activity are the related functions commonly referred to as design and process engineering.

If we now examine the concept of entrepreneurship as Vernon employed it in light of the preceding comments, the entrepreneurial function becomes, in effect, that of intervening to link the precommercialization phase of a product to its commercial life cycle. Thus, an entrepreneur, in the originating market at least, is most likely to have production capabilities. If we turn to a market other than the originating one, however, the situation is quite different. In this case the necessity for a product to pass through the precommercialization

steps prior to embarking on its life cycle no longer exists. Since the product is already being produced abroad, the possibility exists of introducing it to the secondary market by importing rather than producing domestically. Here it is sufficient that the entrepreneur combine a thorough knowledge of currently unsatisfied needs of consumers in his market with a knowledge of potential sources of supply of a new product capable of satisfying these needs. Hence, while the nature of the entrepreneurial function has been shown to be somewhat different in those nations which are secondary recipients of a new product from the function in the originating market, it is to be emphasized that its execution is of no less importance. What is important to realize in all this is that while the entrepreneur in the originating market is almost certain to be a producer, in markets which are secondary recipients of a product, the entrepreneur may just as easily be a distributive intermediary or even an individual.

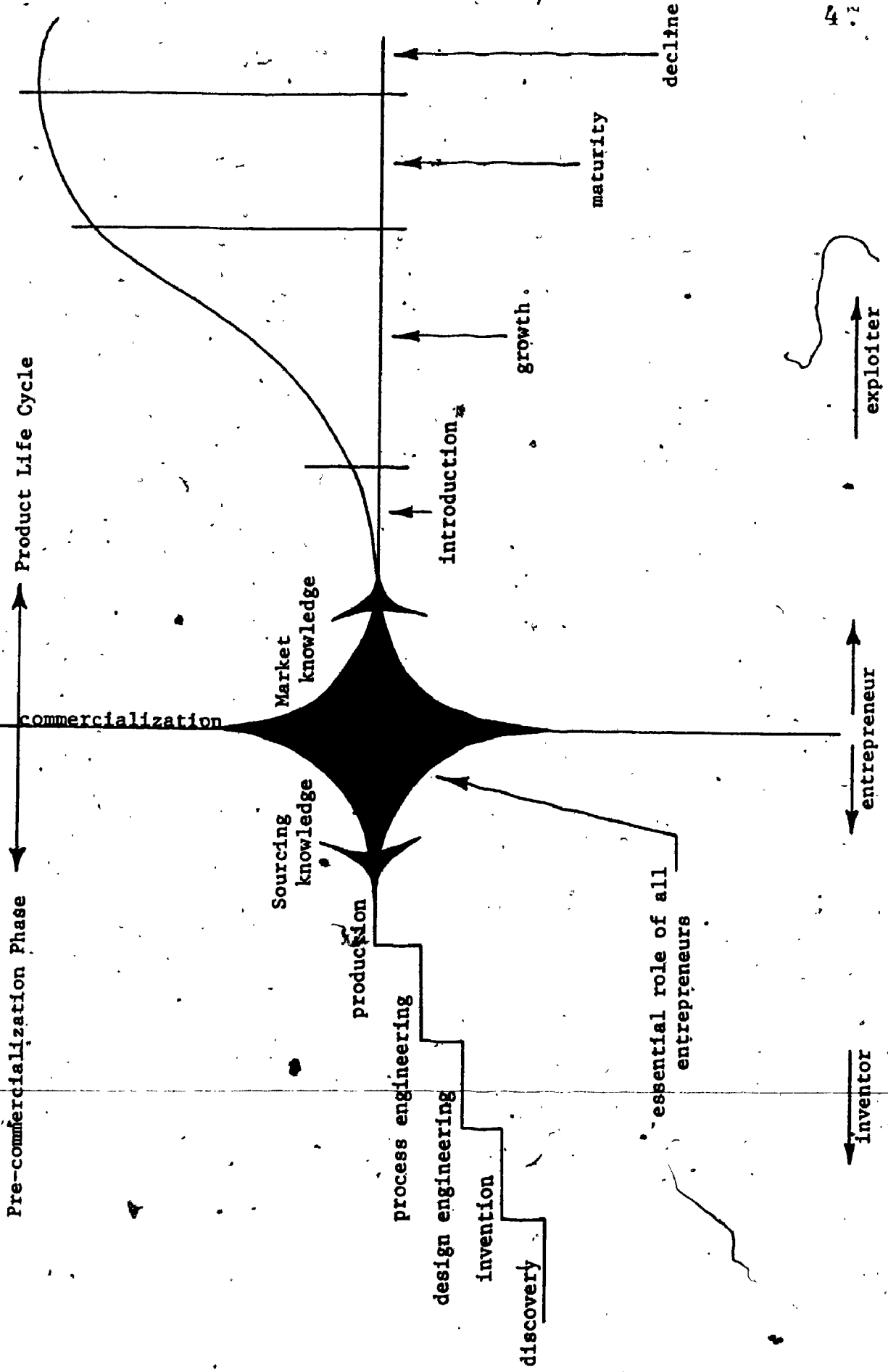
The two essential features of this broader concept of the entrepreneurial function, namely, market knowledge and sourcing knowledge, are represented by the large arrows in Figure 1.

Having looked briefly at the major advances in the theory of international trade which have taken place during the recent past, and at some of the developments which have occurred simultaneously in other related areas such as diffusion theory, the stage is set for a further refinement in trade theory building from the foundations laid by Vernon. If the modified theory is to represent a worthwhile improvement, it must take into consideration two important points discussed above:

1. A theory based on aggregation at the national level risks losing sight of significant changes in the critical variables determining trade flows. These factors are

FIGURE I

THE ENTREPRENEURIAL FUNCTION



determined, for the most part at the level of individual firms.

2. Any meaningful theory of trade must devote considerably greater attention to patterns of demand and its concomitant imperfections in information regarding demand.

A most fruitful ground on which to reconstruct a theory of trade flows is to begin with a micro orientation and attempt to incorporate some of the ideas drawn from the theory of diffusion of innovation which hitherto have been excluded from trade theory. One promising synthesis of these concepts drawn from various disciplines is the diffusion model of international trade which appears in the following chapter.

REFERENCES

1. Kindleberger, Charles P., International Economics, Third Edition, Richard D. Irwin, Inc., Homewood, Illinois, 1963. p. 88.
2. Kindleberger, Charles P., op. cit., pps. 104-105.
3. Caves, Richard E., Trade and Economic Structure, Harvard University Press, Cambridge, Mass., 1960. pps. 204-208.
4. Wilkinson, B.W., Canada's International Trade: An Analysis of Recent Trends and Patterns, The Private Planning Association of Canada, 1968. pps. 1-2.
5. Behrman, Jack N., Direct Manufacturing Investment, Exports and the Balance of Payments, National Foreign Trade Council, New York, 1968.
6. Hufbauer, O.C., and Adler, F.M., Overseas Manufacturing and The Balance of Payments, U.S. Treasury Department Washington, D.C., 1968.
7. Kindleberger, Charles P., American Business Abroad, Yale University Press, New Haven, 1969. pps. 1-36.
8. Vernon, Raymond, "International Investment and International Trade in the Product Life Cycle", Quarterly Journal of Economics, Vol. LXXX, May 1966. p. 192.
9. Kenen, Peter B., International Economics, Second Edition, Prentice-Hall Inc., Englewood Cliffs, New Jersey, 1967. p. 4.
10. Heckscher, Eli F., "The Effect of Foreign Trade on the Distribution of Income", Readings in the Theory of International Trade, ed. Ellis, H.S., and Metzler, L.A., American Economic Association, Philadelphia, 1949. pps. 272-300.
11. Burenstam Linder, Staffan; An Essay on Trade and Transformation, John Wiley and Sons, New York, 1961. pps. 83-84.
12. Leontief, W.W., "Domestic Production and Foreign Trade; The American Capital Position Re-examined", Proceedings of the American Philosophical Society, 97, September, 1963. pps. 332-349.
13. Tatemoto and Ichimura, "Factor Proportions and Foreign Trade - the Case of Japan", Review of Economics and Statistics, October, 1959. pps. 442-446.

Wahl, D.F., "Capital and Labour Requirements for Canada's Foreign Trade", Canadian Journal of Economics and Political Science, August, 1961. pps. 349-358.

Naya, S., "Natural Resources, Factor Mix and Factor Reversal in International Trade, American Economic Review, May, 1967. pps. 561-570.

- 14. Ohlin, B., Interregional and International Trade, Revised Edition, Harvard University Press, Cambridge, Mass., 1967.
- 15. Burenstam Linder, Staffan, op. cit.
- 16. Burenstam Linder, Staffan, op. cit. p. 84.
- 17. Burenstam Linder, Staffan, op. cit. p. 91.
- 18. Burenstam Linder, Staffan, op. cit. p. 102.
- 19. Vernon, Raymond, op. cit.
- 20. Hufbauer, G.C., Synthetic Materials and the Theory of International Trade, Gerald Duckworth and Co. Ltd., London, 1966.
- 21. Hirsch, Seev, Location of Industry and International Competitiveness, Clarendon Press, Oxford, 1967.
- 22. Wells, Louis T. Jr., "A Product Life Cycle for International Trade", Journal of Marketing, Vol. 32, July, 1968. pps. 1-6 and "Test of a Product Cycle Model of International Trade: U.S. Exports of Consumer Durables", Quarterly Journal of Economics, February, 1969. pps. 152-162.
- 23. Johnson, Harry, Comparative Cost and Commercial Policy Theory for a Developing World Economy, Almqvist and Wiksell, Stockholm, 1968.
- Grubel, Herbert G., "The Theory of Intra-Industry Trade", I.A. McDougall, et al. (ed.) Studies in International Economics, North Holland, Amsterdam, 1970.
- 24. Wells, Louis T. Jr., Editor, The Product Life Cycle and International Trade, Division of Research, Graduate School of Business Administration, Harvard University, Boston, 1972. pps. 5-6.
- 25. Hirsch, Seev, op. cit.
- 26. Freeman, C., "The Plastics Industry: A Comparative Study of Research and Innovation", National Institute Economic Review, No. 26, November, 1963.
- 27. Hufbauer, G.C., op. cit.

28. Wells, Louis T. Jr., Product Innovations and Directions of International Trade, Unpublished Doctoral Thesis, Harvard Business School, 1967.
29. Gruber, William, Mehta, Dileep and Vernon, Raymond, "The R and D Factor in International Trade and International Investment of United States Industries", *Journal of Political Economy*, February, 1967.
30. Vernon, Raymond, op. cit. p. 193.
31. Wells, Louis T. Jr., "A Product Life Cycle For International Trade", op. cit. pps. 4-5.
32. Wells, Louis T. Jr., Editor, The Product Life Cycle and International Trade, op. cit. pps. 16-17.
33. Crookell, Harold, The Role of Product Innovation in Trade Flows of Household Appliances Between Canada and the U.S.A., Unpublished Doctoral Thesis, University of Western Ontario, 1970.
34. Crookell, Harold, op. cit.
35. Vernon, Raymond, op. cit. p. 193.
36. Vernon, Raymond, op. cit. p. 193.
37. Crookell, Harold, op. cit.
38. Rogers, Everett, The Diffusion of Innovations, Glencoe, Ill., Free Press, 1962.
39. Ryan, Bryce, and Gloss, Neal C., "The Diffusion of Hybrid Seed Corn in Two Iowa Communities", *Rural Sociology*, Vol. 8, 1943. pps. 15-24.
40. Menzel, Herbert, and Katz, Elihu, "Social Relations and Innovation in the Medical Profession: The Epidemiology of a New Drug", *Public Opinion Quarterly*, Vol. 19, 1955, pps. 337-352.
41. Mansfield, Edwin, "The Speed of Response of Firms to New Techniques", *Quarterly Journal of Economics*, May, 1963.
42. Hagerstrand, Torsten, Innovation Diffusion as a Spatial Process, Chicago, University of Chicago Press, 1967.
43. Hagerstrand, Torsten, The Propagation of Innovation Waves, Lund Series in Geography, Series B. No. 4, Lund, Sweden, 1952.
44. Brown, Lawrence A., "Diffusion of Innovation: A Macroview", *Economic Development and Cultural Change*, January, 1969. pps. 189-211.

45. Cordell, Arthur J., The Multinational Firm, Foreign Investment, and Canadian Science Policy, Special Study No. 22, Science Council of Canada, Information Canada, Ottawa, 1971.
- Bourgault, Pierre L., Innovation and the Structure of Canadian Industry, Special Study No. 23, Science Council of Canada, Information Canada, Ottawa, 1972.
46. Bourgault, Pierre L., op. cit. pps. 70-71.
47. Pavitt, Keith, "The Multinational Enterprise and the Transfer of Technology" in Dunning, John H., Editor, The Multinational Enterprise, George Allen and Unwin Ltd., London, 1971.
48. Wells, Louis T. Jr., op. cit. pps. 6-8.
49. Pavitt, Keith, op. cit. p. 64.
50. Schumpeter, Joseph A., The Theory of Economic Development, Harvard University Press, Cambridge, Mass., 1959.
51. Buzzell, Robert D., "Competitive Behavior and Product Life Cycles", New Ideas for Successful Marketing, The Proceedings of the 1966 World Congress of the American Marketing Association.
52. Schmookler, Jacob, Invention and Economic Growth, Harvard University Press, Cambridge, Mass., 1966.
53. Marquez, V.O., "Science Policy", an address given to the Society for Advancement of Management, May 5, 1969.

CHAPTER III

A DIFFUSION MODEL OF INTERNATIONAL TRADE

Perhaps the most important contribution which diffusion theory has to make to the field of international trade is related to its micro demand orientation. Diffusion theory identifies specific types of individuals, groups and organizations as playing strategic roles in the acceptance of innovations and focuses on an examination of the nature of the decision processes adopted by these individuals and organizations. Similarly, the appeal of the Diffusion Model of trade to be developed below lies in its explicit recognition of demand influences, in addition to production cost considerations, as important determinants of trade patterns.

The central thrust of the Diffusion Model is the notion that the process of adoption of innovation across national boundaries is not solely in the hands of an innovating producer; rather the process requires the initiative and cooperation of key buying individuals or institutions within other countries and cultures who often serve as initiators and/or catalysts in the adoption process. It is suggested that throughout the life cycle of products, there is a consistent and sequential pattern of interaction among the various trade decision makers. For broad ranges of products, adoption of specific foreign innovations by certain individuals or institutions in a nation's distributive structure consistently precedes their adoption by certain other individuals or firms and in turn comes later than their acceptance by still others. In addition, the decisions by some of these individuals

or institutions to adopt appears to be heavily influenced by and dependent upon the experience of earlier adopters with the innovation. Insofar as different goods reach their ultimate consumer through quite distinct channels of distribution, it is to be expected that the specific identity of the organizations affecting trade flows of products in any one category will differ from those in any other.

Consider, for example, the case of a new product which is launched and gains acceptance in the United States. The process by which this innovation is adopted across national boundaries (e.g., in Canada or Italy) is an area of considerable importance to international trade theory. The rate and timing of imports, it is felt, will be a function of the underlying diffusion process. As suggested above, the speed of adoption in other countries is not solely in the hands of the innovative producer in the U.S. It requires the cooperative help of "entrepreneurs" within the importing countries who understand their cultural and social systems and can act as catalysts or linking agents in accelerating the rate of adoption. Furthermore, given the existence of such entrepreneurs, the structure of the distributive system in the importing country will have a pronounced effect on the rate of adoption of the new product in that market. For example, one might expect a tendency for an innovation to spread more quickly in a nation dominated by a few large retail institutions, than in one in which distribution is fragmented and devoid of any large powerful firms. All this is to suggest that trade flows in manufactured goods cannot be understood without an examination of the adoption process in importing nations.

Since rate of adoption is described by the S-shaped life cycle curve, it is therefore useful to examine the adoption process in the

light of the stages of the product life cycle, since these stages also reflect different types of activity which influence adoption. What follows is a four-stage model depicting the diffusion of innovation of a particular class of goods, namely manufactured non-food consumer products, across national boundaries.

The first stage covers the initial introduction and acceptance of the product in a specific market (say the U.S.) and its subsequent early adoption through importation by entrepreneurs in other countries (e.g., Canada). The second stage involves the growing acceptance of the product in Canada as large resale institutions, sensing a market opportunity, move quickly to make the product available to a wider segment of the market. In stage three of the model, Canadian-based manufacturers, noticing general market acceptance of the product, move to expand product acceptance by manufacturing or importing. During the fourth stage, as the product begins to approach its maximum saturation level, close control of costs becomes necessary and provides a powerful incentive for an intensified search for low cost foreign sources of production and for investment by manufacturers in lower cost third country manufacturing facilities. The net result of these activities is an upswing in imports of the product into the Canadian market.

It is to be emphasized that not all products, and not even all manufactured non-food consumer products, will necessarily follow this exact pattern. One obviously important variable is the existence of multinational firms in the product field. Nevertheless, the emphasis of the model is clearly of importance to an improved understanding of the international trade process. Individuals and firms within a nation

which is a secondary adopter of a new product do influence or even initiate flows of a product into that market and the hierarchical and chronological pattern of this influence is worthy of empirical examination. A more detailed elaboration of the Diffusion Model follows.

Stage I - Introduction of a New Product to a Market

The model is set in motion when an entrepreneur (say in the U.S.) identifies a need among individuals in his market and conceives of a product with the characteristics appropriate to such a need. Identification of a need at this level may occur in a variety of forms. In some situations, an entrepreneur may observe some unsatisfied need for which no product currently exists; in such a case he would be required to design and commercialize a product with the characteristics required. In other cases, the new product may result from some technological discovery which coincides with an area of inadequately-satisfied consumer need. Regardless of the specific nature of the entrepreneurial activity, let us assume that the particular product under examination is developed and launched in the United States for the reasons outlined by Vernon. In due course, it becomes known to an entrepreneur in Canada, perhaps as a result of a visit to the U.S., perhaps through official or unofficial links with American firms or individuals, perhaps through the media, or perhaps by no more than the casual observation of some souvenir of a trip abroad made by an acquaintance.

Parenthetically, perhaps the most rapid international spread of a new product at this point tends to occur when the original innovating firm is multinational, with relatively autonomous subsidiaries abroad. These subsidiaries, which are keyed to the local markets they

serve, are quick to recognize the local potential of a new product introduced at head office, and are in an ideal position to import a sample lot to test market acceptance. Investment is small and costs are largely variable. As a general rule, and this is particularly true in Canada, foreign subsidiaries are often the catalysts introducing new products to their host country, ⁽¹⁾ as was the case with RCA and colour television in Canada. It is further suggested that the speed with which companies stimulate diffusion across national boundaries is directly related to the extent of their past experience in other countries.

When the original innovating company is inexperienced in foreign markets, however, the initiative in introducing the new product abroad will often be taken by an entrepreneur of a different kind in the foreign country. This entrepreneur will frequently be an individual importer, perhaps a small specialty retailer in the case of consumer goods, or an alert manufacturer or manufacturer's agent in the case of producer goods. When this entrepreneur spots the domestic potential of this new product, he faces a choice either of importing it or arranging for investment in domestic manufacturing facilities.

Although the product may have wide acceptance in the originating market, its introduction to Canada will take on all the characteristics of an innovation in that country. The rate of adoption will be uncertain (although this uncertainty will decline as experience in other countries grows) and hence the risk will appear high to the entrepreneur. He is therefore unlikely to opt for investment in manufacturing facilities initially. Rather, he faces powerful incentives to purchase the product from an existing foreign manufacturer and import

for resale in his home market. Even when some evidence of the product's local acceptance is available, he may still be reluctant to manufacture domestically where scale economies or special manufacturing skills make it difficult to compete with an established foreign producer.

The net effect of these combined influences is that in countries where the market for a given product is in the introductory stage of its evolution, demand for the product is likely to be filled by imports from countries where demand is in a more advanced stage.

Stage II - Early Acceptance

Once an individual entrepreneur has introduced the product to a limited segment of the population with some degree of success, one of two outcomes is possible.

First, the product may remain in Stage I as a specialty product for a considerable length of time, with demand apparently confined to a small and somewhat insulated segment (or subgroup) of the population. Specifically, it is to be expected that certain goods, due to their narrow or highly specialized appeal, may never progress beyond the first stage of the diffusion model.

Second, the product may achieve wider acceptance and the diffusion process may pass into its second stage. Diffusion theory suggests the need for some "leader" or "gate-keeper" to intervene at this point in the process to perform a linking role between the specialty segment and other potential consumers. In the case of manufactured non-food consumer products in the developed countries, large retail institutions may be expected to play this linking role by becoming actively involved soon after a product is originally introduced

to their market. There is some evidence to suggest that these firms seldom initiate the marketing of such new products, and sometimes their involvement is forced by the aggressiveness of multinational subsidiaries marketing through their own dealer systems. (2) But in many cases department or other chain stores may lead the way by virtue of their many overseas buying connections.

These large resale institutions are quick to identify a significant need which they feel might be satisfied by the product. They in effect act as a "go-no-go" screening point, interpreting possible broader consumer acceptance, at Stage II of the process. If they decide the prospects for the product are sufficiently attractive to offset the risk involved, they will proceed to make the product (often in a modified form) more widely available, and will be faced with the task of selecting a suitable source of supply. Although these resale institutions seldom invest directly in production facilities, they do nevertheless enjoy the options of buying from existing producers abroad or arranging for production of the good with someone willing to invest domestically in the required production facilities. The lack of documented information on how large resale institutions make sourcing decisions makes the area an urgent one for research. It seems reasonable to assume, however, that while volume remains at a relatively low level, these firms will continue to import. On the other hand since department or chain stores tend to serve a much broader segment of the population than independent specialty stores, it is likely that their involvement with the product will bring about an increase in sales reflecting acceptance by a different market segment. Even at this relatively early stage of the product's life, price may begin to exert some influence on

demand, and may lead resale institutions to seek lower-cost sources of supply. But, a major reason for more rapid acceptance expected at this stage relates to the power of department or chain stores to overcome the barriers to consumer acceptance. Return guarantees, reliable service reputation, credit facilities and advertising and promotion activities all help to propel potential consumers quickly through the awareness, interest, evaluation and trial stages of the adoption process. Domestic producers, when available, may be favoured as long as their laid-down price is reasonably comparable to the imported price. There is even evidence derived from personal interviews with senior merchandising officials of major Canadian department stores that large resale institutions, because of their huge marketing reach, can often place orders of sufficient volume to set domestic producers in motion, and may choose to do so. Hence, when a country's demand for a given product enters Stage II due to the intervention of large retail institutions, it is expected that imports of the product will constitute a decreasing percentage of domestic sales (although absolute levels of imports may actually increase).

Stage III - General Acceptance

By the time the adoption process has passed through Stage II, the product in question will have demonstrated its potential for further rapid sales growth and many of the market uncertainties will have been removed. At this stage, the domestic manufacturer enters the picture. While the participation of manufacturing firms may take the form of importing for resale through their own distribution facilities, if the product is ever to be manufactured in Canada, it is likely to occur

during this stage when the acceptance price (and hence manufacturing cost) has not yet reached over-riding proportions as a demand influence. Thus, import substitution may be expected to peak during this period in which Canadian market acceptance is growing rapidly and carry through until the product approaches saturation and becomes highly standardized.

In countries where multinational subsidiaries are involved in the market, these subsidiaries are likely to lead the way in embarking on manufacturing in that host country. There is a problem of waiting until their sales volume in the product is sufficient to justify a switch from importing to direct manufacture. This decision is dependent on price-cost-volume relationships of the various alternatives, coupled with risk and uncertainty, which at this stage is relatively low.

Other domestically-based manufacturers may subsequently be attracted to the product because of its established growth rate, and because of the availability of manufacturing capacity in their plants. This is particularly the case when the new product in question has been displacing sales of established products (e.g., color television displacing black and white).

To the extent that many manufacturers get involved at this stage, model variations on the basic product design may begin to appear. In this way manufacturers may speed up the diffusion by attempting to find product/service combinations to appeal to new market segments. The consumer then faces an increasing array of choice in product features and price.

Some manufacturers may see the desirability of marketing a certain product. (i.e., because it is compatible with their existing

product lines) but may not find it desirable to manufacture it. Their manufacturing facilities may be fully utilized, the investment requirement may be too high, or they may simply not be confident of their ability to sell the volume required to make manufacturing economical. They may also wish to gain marketing experience before they commit themselves to capital investment. Accordingly, domestic manufacturing firms may import directly from overseas sources, or have the product made to their specifications by other overseas (or even domestic) producers. In such a situation, the domestic manufacturer elects to act in a purely marketing capacity and import or purchase the product for resale through his own distribution facilities. The factors involved in this decision situation are similar to those involved in any make-or-buy decision.

In addition, an aggressive foreign manufacturer may undertake direct marketing activity in the host country, and continue to export the product from his home base. There are many examples of U.S. manufacturers selling directly in Canada in spite of tariff barriers. In order to sell successfully in these conditions the exporter must either have substantial production cost advantages, or significant product features which allow him to charge the customer for the tariff and still command a market.

Stage IV - Product Saturation

In the final stage a product has achieved high usage levels and sales are increasingly to a replacement market. The diffusion process is complete and consumers have developed knowledge of the product, which now begins to take on many of the characteristics of a

commodity. Production processes have likely become standardized and competition among a number of sources of product has tended to make price, and hence costs of production and distribution, extremely important as an influence on demand. Displacement by new innovations tends to accelerate these conditions.

The net result of these pressures is the generation of powerful incentives for individual suppliers of the product to seek the lowest-cost source consistent with the other essential requirements of the product. The ensuing search for low-cost supply may take many forms. Some firms will seek alternative low-cost suppliers from other countries. Retail institutions often take the lead in this, but manufacturers are quick to follow. Private branding, both by retailers and by manufacturers themselves, tends to become more prevalent at this point.

Under these circumstances it is possible, even likely, that Stage IV will result in higher imports as a percentage of domestic sales, but that the imports will largely be priced below industry averages.

Along with this pressure on prices and costs, a frequent reaction to the competitive conditions in the dying stages of a product is that of creative innovation or product modification. Crookell, in his study, encountered just such an example in the case of refrigerators - a product with close to 100% saturation in Canada. Using an Italian production innovation (foam-in-place insulation) a U.S. manufacturer introduced a marketing innovation (the side-by-side refrigerator-freezer) which has succeeded in commanding a substantial price premium. In effect, the side-by-side may be regarded as a new product,

taking the cycle back to Stage I. The point to be made is that the competitive and, often unprofitable conditions surrounding the decline phase often function as a stimulus to innovation, and thus the cycle resumes.

In summary, the Diffusion model identifies the following stages as being characteristic of the process by which a manufactured, non-food consumer good is diffused throughout the Canadian market:

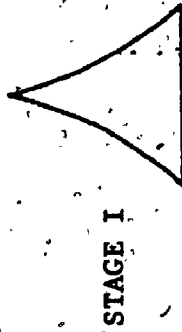
- Stage I Foreign innovation introduced to the Canadian market by a Canadian entrepreneur who imports the finished product from an existing foreign source.
- Stage II Large Canadian merchandising firms in recognition of a promising market potential, begin to import the product from a foreign source.
- Stage III Domestic manufacturers make the product available, either by importing completed or "knocked down" units, or by manufacturing the product themselves.
- Stage IV Retailers and manufacturers both seek low cost sources of the product abroad.

The diagrams on the following two pages depict, schematically the Diffusion Model outlined above.

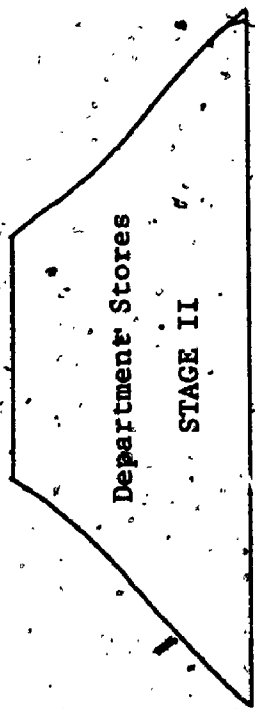
While each of the stages of the Diffusion Model described above are important if our understanding of the forces influencing international trade flows is to be improved, some of the stages warrant much closer examination than others. Because events at the early stages of a product's life may critically shape the trade patterns of subsequent periods, for example, it makes sense to focus initially on the earlier stages of the diffusion process. If, for instance, it is found that the experiences of innovative resellers with a new product are consist-

FIGURE II

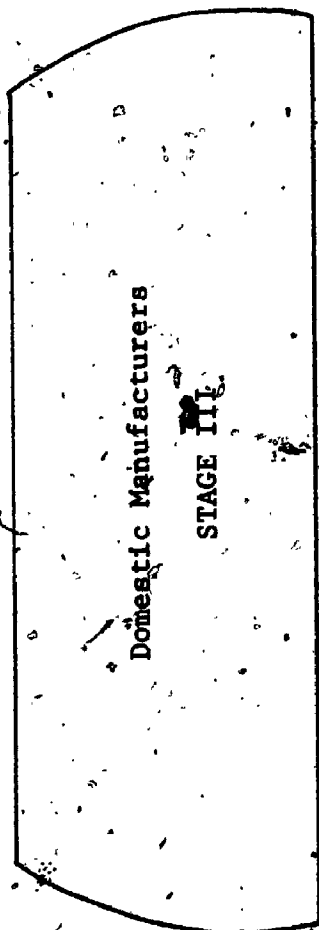
INCREMENTAL GROWTH IN SALES AT EACH STAGE IN THE DIFFUSION MODEL



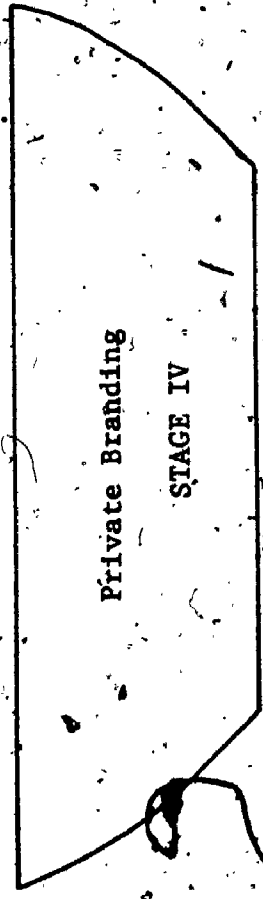
1. Uncertainties of adoption high.
2. Specialty Retailers - Narrow Market.
3. Sales largely supplied by imports.



1. Department stores initiate more rapid adoption.
2. Multi-national firms compete sometimes via local manufacturing.
3. Rapid and profitable growth.



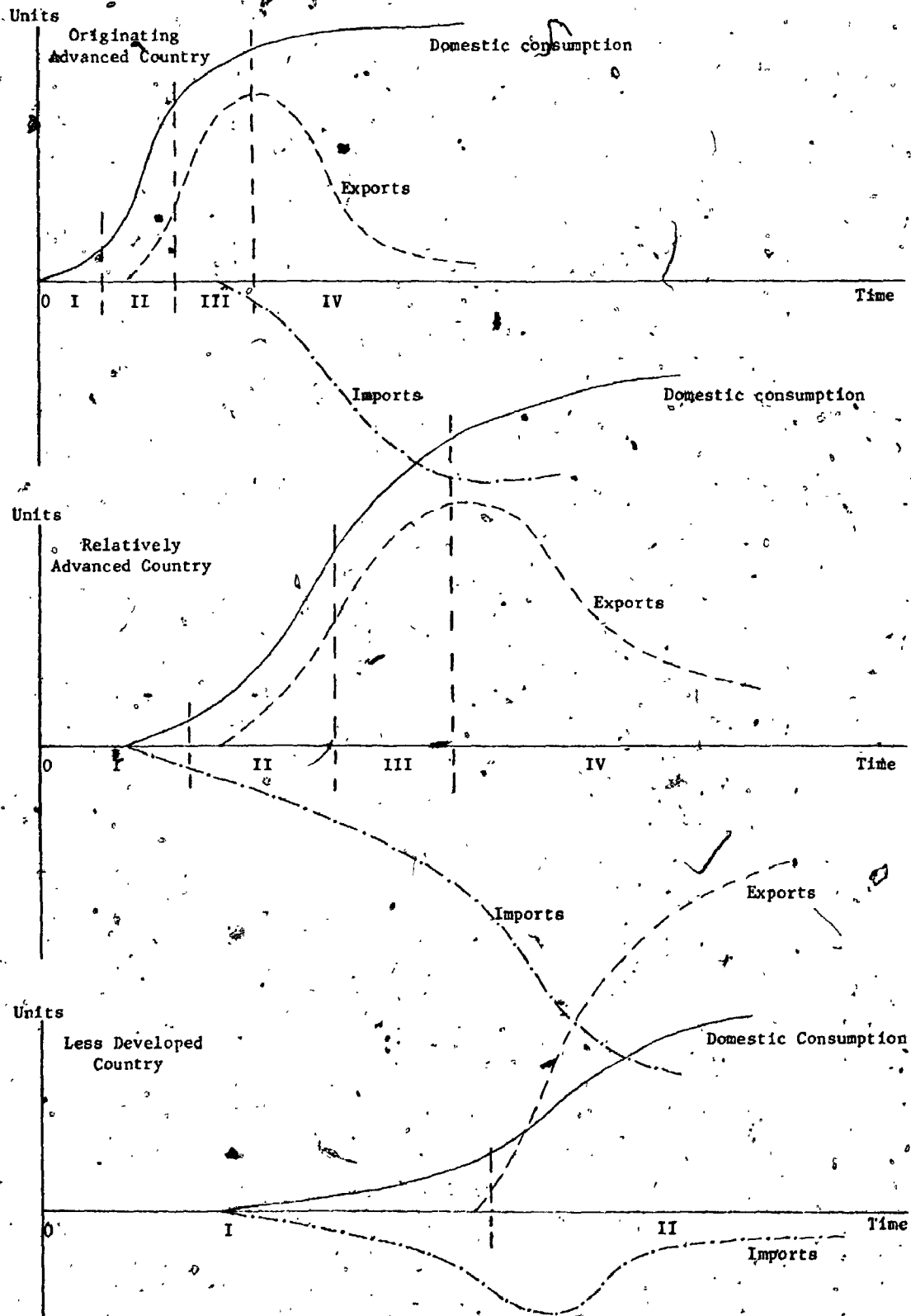
1. Model proliferation via entry of major domestic manufacturers.
2. Price elasticity increases and cost consciousness develops.
3. Sales largely supplied by domestic manufacture.



1. Cost reduction via private branding.
2. Direct investment abroad to control supply.
3. Increase in low cost imports.
4. Harsh competitive conditions stimulate new related innovations.

FIGURE III

CONSUMPTION AND TRADE MOVEMENTS IN DIFFERENT ECONOMIES



ently monitored by other firms before they make the decision to adopt, one could expect the pattern of involvement of the early adopters to influence the sourcing activities of later adopters. For those new products in which price becomes an important influence on sales relatively soon after their introduction, one might anticipate a subsequent intensified search by resellers for low cost foreign sources. Conversely, where price is relatively less important, one might expect a greater emphasis on domestic sources of production in the interests of closer control over deliveries and rapid communication. If large retailers should elect to bypass Canadian sources of a new product in favour of buying directly from a foreign producer, the Canadian manufacturers themselves might be expected to consider delaying or forgoing domestic production and rather importing foreign produced goods for resale themselves.

A related justification for focusing on the early stages of the diffusion process is that the conditions existing during the later stages of a product's life are believed to be not unlike the conditions which characterize markets for commodity products for which existing trade theory appears most adequate.

The "large retail institutions" referred to in Stage II of the diffusion model include those high volume integrated retail firms which typically operate out of a number of locations and represent a significant force in terms of their relative sales volume in the market. One of the more prominent examples of such firms in the advanced Western nations is the major department store chain. Clearly, the nature and relative importance of these organizations in the distributive structure of their respective markets will exhibit a wide

variation from one nation to another.

To illustrate, during 1972, those firms classified by Statistics Canada as department stores accounted for 23% of total Canadian retail sales of all goods, excluding food products, automobiles and fuels which they typically do not handle. Furthermore, the five largest of the firms alone account for some 80% of the total for their category. (3) At the other extreme, the distributive structure of countries such as Austria, Italy, Spain, Portugal and Greece is fragmented to the extent that a vast number of small independent firms account for the majority of retail sales. (4) Large department stores are conspicuous by their absence in these countries, a situation which tends to swing the balance of power in the distributive system much more towards the manufacturers than is true in a nation like Canada or the U.S.

The Diffusion Model, then, represents one attempt at improving explanation and understanding of the factors determining flows of manufactured goods between countries through adopting a micro demand orientation to international trade. In so doing, it is submitted that the spread and acceptance of new products to a market may be explained as a diffusion process in which, at different stages of acceptance, different individuals or institutions assume a role of major importance as importers. Trade flows in this view may in many cases be understood by examining the significance, nature and role of the activities of these institutions in the importing country. In particular, the aggressiveness of large retail institutions and the resultant influence of these firms on trade flows has been singled out for empirical examination.

REFERENCES

1. Crookell, Harold, The Role of Product Innovation in Trade Flows of Household Appliances Between Canada And the U.S.A., Unpublished Doctoral Thesis, University of Western Ontario, 1970
2. Crookell, op. cit.
3. Statistics Canada, Cat. No. 63-002, Department Store Sales and Inventories, Vol. 44, No. 12 (December 1972)
4. Jeffreys, James B., and Kneę, Derek, Retailing in Europe, MacMillan and Co. Ltd., 1962. pps. 49-71.

CHAPTER IV

THE DEVELOPMENT AND CURRENT STRUCTURE OF CANADA'S

DISTRIBUTION SYSTEM

Principal Trends in Canadian Distribution ⁽¹⁾

The distribution of those products destined for use by individual consumers in Canada has undergone a variety of significant changes, many of which have occurred within the past quarter century. Much of the change which has occurred has been related to fundamental shifts in environmental conditions or to major technical advances.

Prior to the First War, Canada's economy was almost entirely dependent on agriculture, the exploitation of natural resources and on primary manufacture of raw materials. The nation's distribution structure was heavily influenced by a lack of specialization which characterized the economy of the time. Much of the population still lived in small communities which were to a large extent self-sufficient. As a result, retailing and wholesaling firms tended also to be unspecialized, handling a variety of goods. They were numerous and generally speaking small in terms of the volume of sales made.

The Twentieth century brought two fundamental changes which together were to have a profound influence on Canada's distributive system. The first was the rapid increase in manufacturing specialization

(1) Much of the historical material in this chapter is based on the very complete "Summary View of Retailing in Canada" in Moyer, W.S. and Snyder, G., Trends in Canadian Marketing, Dominion Bureau of Statistics, Ottawa, 1967, pp. 55-199.

as production was transferred to larger centralized factories. The second and related change involved a growing migration of Canada's population toward the major urban centers. While the increased manufacturing specialization was partially manifested through a marked increase in the importance to the distributive function of merchandising intermediaries such as retailers and wholesalers, the increased population concentration made possible greater retail specialization and the development of larger distributive firms.

As Canada's economy continued to mature, prosperity was increasingly in evidence. Increased prosperity in turn led to increased consumer spending and in particular, spending on a full range of new consumer durables. The automobile turned out to be by far the most important of these; its existence was to change distribution to a greater extent than had any other single development to date. First, it gave birth to an entirely new class of products which could not be efficiently handled through existing institutions. In addition to the dealers who actually sold motor vehicles, the automobile gave birth to gasoline and service stations, repair garages and wholesalers specializing in automobile parts. With the appearance of the automobile in a time of growing prosperity, a large and increasing proportion of consumer spending was channeled into a completely new class of merchandise.

However, the influence of the automobile on Canada's distribution structure was to have more far-reaching effects. For one thing it vastly improved the mobility of consumers, and enabled them to cover much greater distances in less time. Now rural and urban fringe dwellers could easily reach urban centers where selection tended to be greater than in the smaller rural stores they had been forced to patron-

ize before. As congestion in the urban centers grew with increased traffic, the automobile could be credited for yet another change in the distributive system.

The 1950's saw the appearance of shopping centers which were characterized by ample parking facilities and a variety of retail outlets in close proximity. The shopping center concept was to provide consumers with suburban one-stop shopping convenience and a variety which approached that of urban centers. More recently still, many of the large urban centers have undertaken complex redevelopment programs to provide improved traffic flow and parking facilities. These redevelopment schemes may well reverse, or at least slow down, the trend for an increasing proportion of retail sales to be made in suburban shopping centers.

There remain two developments, both which have swept into prominence as influences on the Canadian distribution system during the past decade. First, franchising, although in existence for some time, has spread rapidly from its traditional base in automobile dealerships and service stations. Second, the concept of a retailer offering a minimum of services with prices correspondingly set to yield low margins has led to the appearance of discount operations which have made inroads into traditional retailing patterns.

To put the changes in Canada's distribution structure in perspective, it is useful to examine the growth in magnitude of the distribution function. Retail sales in current dollars dropped from \$2,549,697,000 in 1926 to a low of \$1,772,927,000⁽²⁾ in 1933 before climbing almost uninterrupted to \$30,646,137,000⁽³⁾ in 1971. The corresponding rise in wholesale sales of consumer products was from approximately \$1.8

billion⁽⁴⁾ in 1930 to \$8,561,650,000 in 1969⁽⁵⁾.

The Development of New Distributive Institutions

Changes in Canadian retailing have been much more visible to consumers than have the corresponding changes in wholesaling. The composition of retail selling in terms of the mix of types of outlets has changed enormously during the 20th century.

Before 1900 various forms of the general store held a prominent place in the nation's retail structure. However, as early as the 1880's full fledged department stores made their appearance largely as a result of the growing acceptance by consumers of a one price system. With the major department stores came mail order offices and by 1930 department stores including their mail order operations had captured nearly 13%⁽⁶⁾ of total retail sales, a share which surpassed that of the previously dominant general store.

The period after 1930 was to bring more changes in the mix of retail outlets, largely due to the influence of the automobile. Perhaps the most outstanding example is the rise in retail share held by automobile dealers and service stations which rose respectively from 9.1% and 2.4% in 1930⁽⁷⁾ to 16.1% and 8.8% by 1971⁽⁸⁾. The same period saw a continuing decline in the share held by general stores and general merchandise stores which together fell from 10.2%⁽⁹⁾ in 1930 to 5.1%⁽¹⁰⁾ in 1971. Department stores also experienced a sharp decline after their spectacular advances of the pre-depression period. In 1957 their share of retail sales had fallen to a low of 8.3%⁽¹¹⁾, a figure which it did not substantially exceed until the late 1960's. One type of outlet which benefited notably from the decline in general stores was the

grocery and combination store which increased its market share from less than 15% in 1930⁽¹²⁾ to 23.6% by 1971⁽¹³⁾.

In addition to major changes in the mix of retail institutions, the form of organization of retail firms has also experienced a major evolution. Prior to the first world war, independent stores held an undisputed position of predominance. However, by the 1920's the corporate chain had entered a period of rapid growth in Canada. In 1926, corporate chain stores had already accounted for nearly 7%⁽¹⁴⁾ of total retail sales, a share which by 1971 was to climb dramatically reaching 38.2%⁽¹⁵⁾.

While most of the growth in corporate chain market share over the years has come at the expense of independents, this latter group has itself undergone a fundamental transition. Indeed, "independence" with reference to retail establishments is a matter of degree since it embraces both a financial and a functional dimension. If one is to grasp the significance of the movement by independent retailers toward interdependence, one must look beyond the surface issue of financial independence to the functional question. Those firms which are classified as financially independent have managed over the past 40 years to maintain a share of total retail sales in the neighbourhood of 70% and have constantly accounted for more than 93% of all retail outlets⁽¹⁶⁾. However, a growth in franchising activity coupled with the development of voluntary chains had cut the retail share held by truly independent firms within this gross category to about 30%⁽¹⁷⁾ in 1967. The rise of corporate chains in Canada after 1920 brought significant pressure to bear on independent retailers and led many of them to seek cooperative arrangements of various types with manufacturers or whole-

salers in order to protect their positions. As these firms maintained their financial independence the extent of their interdependence was partially obscured.

Changing Size of Canadian Distributive Firms

One of the more noteworthy trends in Canadian distribution during the twentieth century has been the continual and appreciable increase in the size of outlets. While the distribution structure in terms of size of outlet may be described as pyramidal in shape today as it was in 1930, the pyramid has moved up sharply. Where some 84.5% of Canadian retail stores had annual sales below \$30,000 and less than 3% above \$100,000 in 1930⁽¹⁸⁾ the corresponding percentages were 33.6% and 27.8%⁽¹⁹⁾ in 1966. It has been suggested that the increased size of retail outlets in Canada may be largely a result of both an increase in the potential market available to the average store and an increase in the volume of sales an individual outlet can generate from a given amount of space over a given period of time. Of perhaps greater significance than the statistics on the number of outlets in the various size categories are the shares of retail trade held by firms in the various size categories. In 1930 more than 31% of total retail sales were made by firms with annual sales below \$30,000 while 29% were made by firms of over \$200,000 annual sales⁽²⁰⁾. By 1966 these percentages had changed respectively to 34% and 67.3%⁽²¹⁾. In summary then, where only about 250 Canadian retail stores had annual sales in excess of \$500,000⁽²²⁾ in 1930 by 1966 there were more than 7,156 such stores⁽²³⁾. At the other end of the size spectrum the number of stores with annual sales less than \$10,000 had dropped from over 70,000⁽²⁴⁾ to 15,530⁽²⁵⁾.

Canada's Distribution Structure in the 1970's

The salient features of the structure of Canada's distributive system in 1970 may perhaps best be summarized by identifying the major types of retail establishments and examining their relative importance.

As Canada entered the 1970's, department stores had once again begun to claim an increasing share of total retail sales with 10.4% of the total in 1971⁽²⁶⁾ as compared to 8.4% in 1960⁽²⁷⁾. Much of this revitalization, however, may be explained by the appearance and rapid growth in the '60's of discount department stores which by 1969 had grabbed off some 2.3% of total retail sales⁽²⁸⁾.

Corporate chains had reached unprecedented heights by the end of 1971 in terms of share of total retail sales. Their total share of 38.2% included some 12.8% of total retail sales represented by the food chains alone⁽²⁹⁾. Undoubtedly the explosion in shopping center developments has enabled corporate chains to achieve such a penetration since they have been preferred tenants by most shopping center developers relative to independent stores. As evidence, in 1969 chain stores accounted for 48.3%⁽³⁰⁾ of total retail sales in shopping centers yet their share of total Canadian retail sales was 25.6%⁽³¹⁾. The corresponding shares for independent stores in 1969 were 19.9%⁽³²⁾ and 64.5% respectively⁽³³⁾.

Perhaps the greatest uncertainties in Canada's distribution structure in 1970 were associated with the group of so-called independent stores. The rapid growth in the 1960's of franchising and of cooperative chains where members retained their financial independence had completely changed the nature of the operations of a great many independent stores. Now these firms had access to the very resources and advantages of bulk

purchasing which had previously distinguished them from their most serious competitors, the corporate chains. In effect, the group of independent stores appear to a large extent to have maintained their share of total retail sales by relinquishing some of their operational independence.

The nature and extent to which these independent stores rely on other firms is largely determined by the type of association into which they enter. Some independents enter into franchise agreements with manufacturers whose lines they carry. In such cases the retailer maintains his independence from other retailers but accepts support, advice, direction and control from the manufacturer. Other independents band together in voluntary relationships in order to gain economies of large scale buying. In these cases the retailers entering into voluntary association must operate within the framework of policies and procedures laid down by the organization which binds them together. By 1967 nearly 25% of so-called independent retail outlets were allied to some extent with major suppliers. As evidence of their relative power, these outlets accounted for more than 50% of total independent store retail sales⁽³⁴⁾.

While projecting Canada's distributive structure into the future is tenuous at best, certain recent developments at least make it plausible for one to make reasonable estimates of the more likely areas of change.

With reference to the category of department stores, there are strong indications that the recent rise in retail market share accounted for by this group will be perpetuated in the immediate future as discount department stores continue their rapid expansion programs and

account for an ever-increasing share of total retail sales. While some of their increased share will undoubtedly come at the expense of traditional full service department stores, the inroads made into the shares of other chain and independent stores should be even greater.

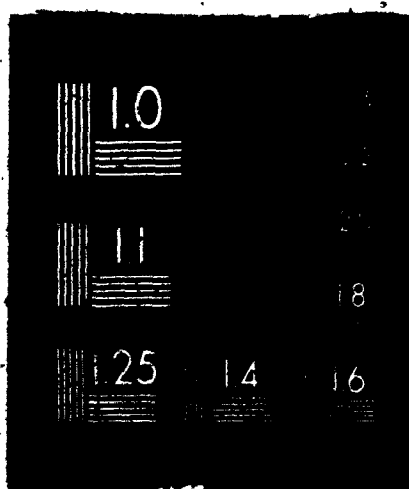
The share of retail sales accounted for by non-food corporate chains has reached a plateau in the past few years following a slight rise during the 1950's. However, just as corporate chains have benefited from preferential treatment by shopping center developers relative to independents, it is likely they will benefit, in a similar way as Canada's major urban centers head into major downtown redevelopment projects. If such proves to be the case, then one might anticipate a slight increase in share of retail sales going to non-food corporate chains in this decade.

The evidence for continued change within the category of independent stores may be the most clear of all. While the retail share controlled by all independent stores may well slip in total during the 1970's, the proportion of those sales accruing to truly independent stores is almost certain to continue its decline. Franchising is becoming a force to reckon with not only in the field of prepared foods distribution but increasingly in other areas as well. The indications are strong that those financially independent retailers who have entered into any one of several types of franchising agreements will continue to make inroads into the share of retail sales held by truly independent firms.

At a more general level there is no obvious reason to expect a reversal in the significant trends to larger retail outlets and for an ever-increasing proportion of retail sales to be made in the largest

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outlets. In fact, the extensive downtown redevelopment programs underway in many of Canada's urban centers should, if anything, tend to stimulate the trend toward larger outlets. It has been shown that in Canada those retail outlets located in core areas of urban centers tend to be significantly larger than their rural or urban fringe area counterparts⁽³⁵⁾. Hence, a revitalization of urban downtown areas, insofar as it once again attracts shoppers to the core area, may accelerate the growth of large volume outlets at the expense of small units.

Canada's Department Stores

As the primary focus of this study involves Canada's major department stores, it will perhaps be worthwhile to examine this type of organization in somewhat greater detail in terms of its differentiating characteristics, its relative position in the economy, and its evolution as a major element in Canada's distribution structure.

The department store as we know it today is the product of an evolution which began in the nineteenth century. Its origins lie with those more enterprising proprietors of traditional general stores who foresaw a merchandising opportunity and gradually added new groups of products to their existing merchandise assortments together with a range of supporting services. As early as the 1880's, Canada had, at least on a small scale, full fledged department stores which already were issuing mail order catalogues. Mail order offices followed about 1916, by which time the foundations had been set for the large and powerful department stores which began to appear after the First World War.

Department stores enjoyed a healthy growth during the first quarter of this century and by 1930 they accounted for nearly 13% of Canada's retail trade. Growth was particularly marked in the three largest department store organizations, the T. Eaton Company, the Robert Simpson Company and the Hudson's Bay Company, which alone represented 80% of all department store sales⁽³⁶⁾.

In discussing the characteristic features of department stores in Canada it is perhaps useful to start with a definition. In the 1961 Census of Retail Establishments, department stores were defined by D.B.S. as:

"Retail establishments carrying a general line of apparel such as suits, coats, dresses and furnishings; piece goods; house furnishings such as furniture, floor coverings, curtains, draperies, linens, and/or major household appliances, and housewares such as table and kitchen appliances, dishes and utensils. These and other merchandise lines are arranged in separate sections or departments with the accounting on a departmentalized basis. The departments and functions are integrated under a single management."

It has been suggested by one writer that "the department store is primarily a 'service institution' with a wide variety of customer services for all purposes and appealing to all income groups"⁽³⁷⁾.

While the merchandising policies of individual firms vary considerably, they do have in common a considerable range of customer services which set them apart from other wide line retailers. The more common of these services include the extension of credit, delivery services, parking facilities, lay-away plans, telephone and mail order services, liberal return privileges, guarantees and gift wrapping services. Thus, the range of services themselves, quite apart from the merchandise assortments typically handled by the department store, serves to distinguish

it from other retail outlets and enhance its attractiveness to potential consumers.

Of course, the wide range of merchandise handled by department stores and the depth of these merchandise assortments represents the primary strength of these institutions. The above definition outlines the minimum in merchandise categories required for a firm to qualify under the D.B.S. classification of department stores. However, the merchandise assortments handled by many Canadian department stores include a host of items not referred to in the definition. With the appreciable rise in consumption of products and services such as automobiles, automotive parts and accessories, motor fuels, automotive repairs and building materials which traditionally had fallen outside the domain of the department store these firms have come under pressure. One important factor behind the sharp decline in department store share of retail sales between 1930 and the mid 1960's has been the inability or unwillingness of these establishments to adjust to the changing mix of commodities.

Department stores are also distinguished by some of their operating characteristics. Not only is merchandise classified into different departments in the typical department store but accounting and control are also carried out on a departmental basis.

The growth of Canadian department stores following 1930 has been heavily influenced by certain developments in the economy. We have already seen that department stores have failed to expand their merchandise lines rapidly enough into faster growing areas, with the result that their share of total retail sales declined until the mid 1960's. In 1957 the department store share had reached a low of 8.3%⁽³⁸⁾ but

had recovered to 10.4% in 1971⁽³⁹⁾ largely on the strength of discount department store performance. If one is to exclude from total sales those products which department stores do not normally sell, the decline in department store share while somewhat less, is still significant. The suggestion is that department stores have not only lost share by not expanding their merchandise assortments into the fast growing areas, but they have lost ground to other forms of outlets even in those areas which have been their traditional strongholds.

In addition to the decreasing proportion of the Canadian consumers dollar being allocated to traditional department store merchandise lines, there are two other trends which have influenced the department store's relative importance in Canada's distributive structure.

First, as traffic congestion worsened in urban centers and simultaneously as rising prosperity resulted in an exodus to suburban residential developments, shoppers were increasingly loath to make the effort to visit downtown stores. The large number of shopping center developments which grew out of this movement to suburbia had important implications for department stores. If they did not respond by opening branches in at least some of the new shopping center developments, they stood to lose an even greater portion of their already diminishing retail share. On the other hand, the typical shopping center called for a much smaller scale of department store operation than in the large downtown urban stores, a fact which called for the development of new operating and merchandising skills. Some of the department stores were quick to react to the growth in shopping centers and have opened many branches during the past two decades. Other department stores have not

responded by opening branches in the shopping centers, or have been late in doing so, with the result that department stores have just been able to hold their own in terms of share of total retail sales. It is of some relevance to note that the proportion of total Canadian department store sales made in shopping centers has climbed sharply during the 1960's to 38.5% in 1969 from 8.3% in 1960⁽⁴⁰⁾.

The second trend, that of an increasing tendency for manufacturers to preretail their products has created serious problems for the traditional department stores whose ability to market products has previously offered them an advantage in the sale of some items. However, as manufacturers increasingly perform the selling function themselves consumers have become more indifferent as to where they purchase such products. In fact, as they have learned more about products without having to rely on the knowledge and judgment of a qualified retail salesman, consumers have been able to seek out the product in outlets which offer minimal service and lower prices than the traditional department stores, whose overheads require higher gross margins. One of the developments which has undoubtedly been nurtured by the growing movement to preretailing has been the appearance and flourishing in recent years of discount department stores. These operations, which were virtually non-existent before 1960 had by 1968 captured 22.2% of total retail sales made by the category of department stores and 2.1% of total retail sales, and in 1969 reached 23.7% and 2.3% respectively⁽⁴¹⁾.

In response to the increasing efforts of manufacturers to preretail many of their products, some of the department stores have intensified their movement into private branding activities. In so

doing, they hope to offer the consumer better value (i.e., quality comparable to that of the manufacturers brands but at lower prices) with the objective of recapturing some of the loyalty which has recently been eroded.

A final consideration with respect to department store operations in Canada involves the unusually high degree of concentration relative to that in other nations. As pointed out earlier, in 1929 the three largest department store organizations alone accounted for 80% of all department store sales. By 1961 this proportion had declined marginally to 70% and in 1972 it was 60%. If we look at the five largest department stores, their share of total retail sales for the category amounted to 80% in 1972⁽⁴²⁾.

REFERENCES

- (2) Moyer, M.S. and Snyder, G. Trend in Canadian Marketing
D.B.S. Ottawa, Canada, 1967. p. 58.
- (3) D.B.S., Retail Trade, Cat. No. 63-005 Vol. 44, No. 1 (January
1972)
- (4) D.B.S., 1931 Census of Canada, Vol. XI, pps. 550-551
- (5) D.B.S., Wholesale Trade, Cat. No. 63-008, Vol. 32, No. 12
(December 1969)
- (6) Moyer, M.S. and Snyder, G., op. cit., p. 101.
- (7) Ibid, p. 76.
- (8) D.B.S., Retail Trade, op. cit.
- (9) Moyer, M.S. and Snyder, G. op. cit., p. 76.
- (10) D.B.S., Retail Trade, op. cit.
- (11) Moyer, M.S. and Snyder, G. op. cit.
- (12) Ibid, p. 76.
- (13) D.B.S., Retail Trade, op. cit.
- (14) Moyer, M.S. and Snyder, G. op. cit., p. 126.
- (15) D.B.S., Retail Trade, op. cit.
- (16) Moyer, M.S. and Snyder, G. op. cit., pps. 151-152.
- (17) Ibid, pps. 151-152.
- (18) Moyer, M.S. and Snyder, G. op. cit., p. 90.
- (19) D.B.S., 1966 Census of Canada, Vol. VI, Cat. No. 97-605.
- (20) Moyer, M.S. and Snyder G. op. cit., p. 91.
- (21) D.B.S., 1966 Census of Canada, op. cit.
- (22) Moyer, M.S. and Snyder G. op. cit., p. 90.
- (23) D.B.S., 1966 Census of Canada, op. cit.

- (24) Moyer, M.S. and Snyder, G. op. cit., p. 90.
- (25) D.B.S., 1966 Census of Canada, op. cit.
- (26) D.B.S., Retail Trade, op. cit.
- (27) Moyer, M.S. and Snyder, G. op. cit., p. 159.
- (28) D.B.S., unpublished statistics
- (29) D.B.S., Retail Trade, op. cit.
- (30) D.B.S., Shopping Centres in Canada 1969, Cat. No. 63-214
- (31) D.B.S., Retail Trade, Cat. No. 63-005, Vol. 41, No. 12
(December 1969)
- (32) D.B.S., Shopping Centres in Canada 1966-1967, op. cit.
- (33) D.B.S., Retail Trade, op. cit.
- (34) Ibid.
- (35) Moyer, M.S. and Snyder, G. op. cit., pps. 96-97.
- (36) Ibid, p.99.
- (37) Entenberg, R.D., The Changing Competitive Position of Department Stores in the United States by Merchandise Line, The University of Pittsburgh Press, 1961, p. 15.
- (38) Moyer, M.S. and Snyder, G. op. cit., p. 159.
- (39) D.B.S., Retail Trade, Cat. No. 63-005, Vol. 44, No. 1
(January 1972).
- (40) D.B.S., Shopping Centres in Canada 1969, op. cit.
- (41) D.B.S., unpublished statistics
- (42) D.B.S., Department Store Sales and Inventories, Cat. No. 63-002,
Vol. 44, No. 12. (December 1972)

each of the products studied:

1. The date of original introduction into the Canadian market.
2. The date of original offering for sale by each of the retail and wholesale firms surveyed through the questionnaire.
3. Identification of the types of distributive institutions offering the product for sale prior to their being adopted by the major department store chains.
4. Sources of information concerning new product ideas used by various distributive institutions in Canada and the nature of the decision processes of these firms which preceded their adoption of the new produce.
5. The nature of interactions between the major department store chains and their foreign suppliers which led to the importation of the product.

The bulk of this information was secured by means of the questionnaire which appears in Appendix C. The questionnaire was sent to a sample of about 360 retail and wholesale firms throughout Canada which were selected according to the following procedure.

First, using the 1966 Census of Retailers and Wholesalers in Canada compiled by the Dominion Bureau of Statistics, those categories of firms handling the specific products selected for study in this dissertation were isolated. Within each of these categories a simple random sample was drawn from the D.B.S. 1966 Census enumeration lists. This list of firms was checked using 1970 city directories and telephone directories to eliminate those which had disappeared between 1966 and 1970. Questionnaires were then sent to the approximately 360 firms remaining.

In order to test unambiguously the relationships hypothesized earlier, certain of the terms used had to be clearly defined. The

total department store unit sales of each specified product represented by imports will exceed the comparable average proportion of imports for the product sold by all other retail institutions.

Hypothesis II

With reference to relative order of institutional adoption:

- a) major department stores will tend not to be the first firms in Canada to adopt a new product
- b) of the several types of merchandising institutions which do adopt a new product, the major department stores will be among the earlier adopters.

Hypothesis III

The adoption pattern of new consumer products in the Canadian market will tend to exhibit the following general characteristics:

- a) the period ending with adoption of a new product by the last of the major Canadian department stores will be followed by a period of significantly more rapid growth in total Canadian unit sales
- b) from the time of adoption by the first of the major Canadian department stores, the retail market share (in units) accounted for by these firms will first rise to a peak and subsequently decline.

These hypothesized relationships are represented geometrically in the diagrams on the following pages.

In conjunction with the empirical examination of these formal hypotheses, a check was made to determine the extent to which the five major Canadian department store chains tended to behave similarly with respect to the time of adoption of the products being studied. While

FIGURE IV

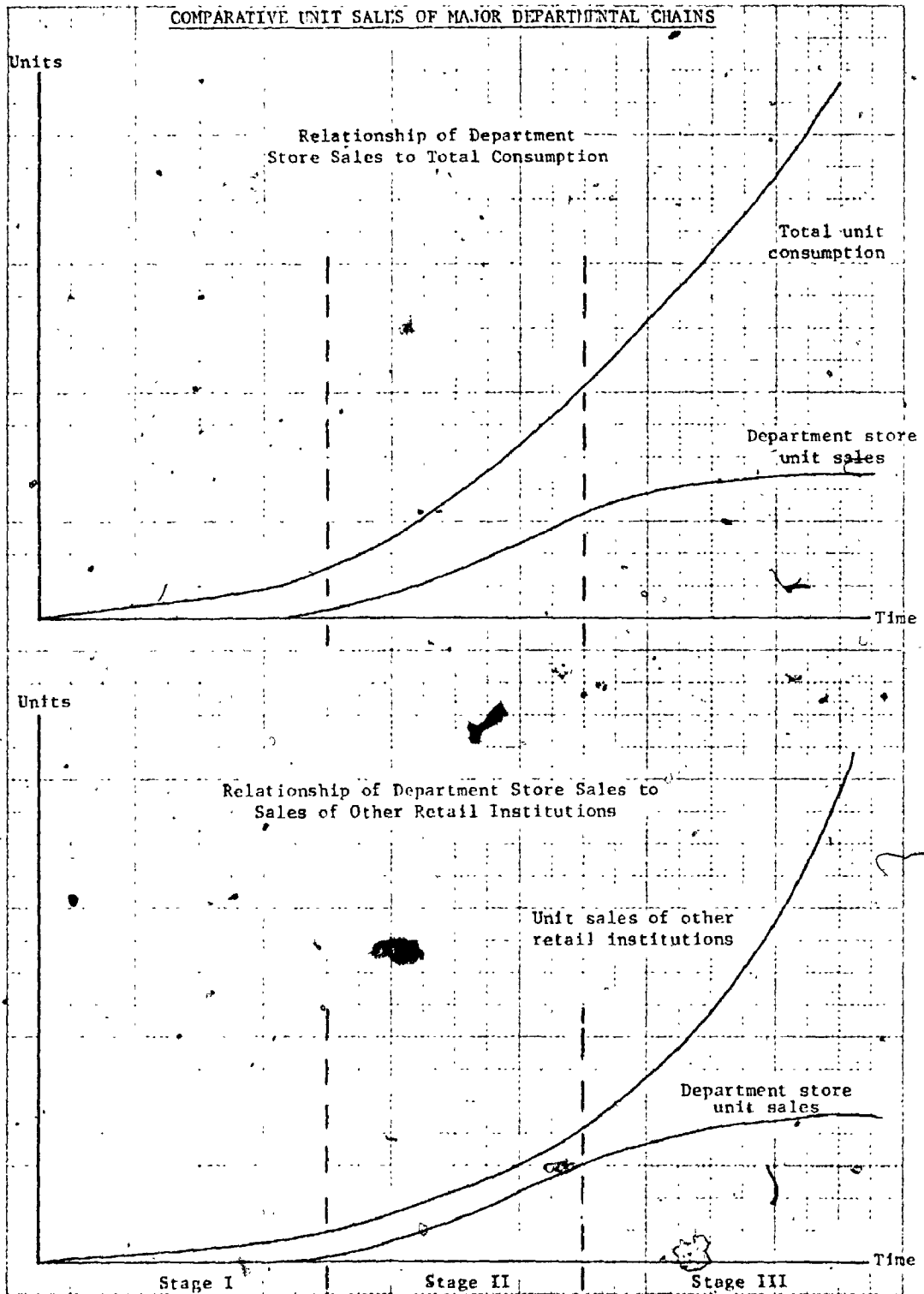
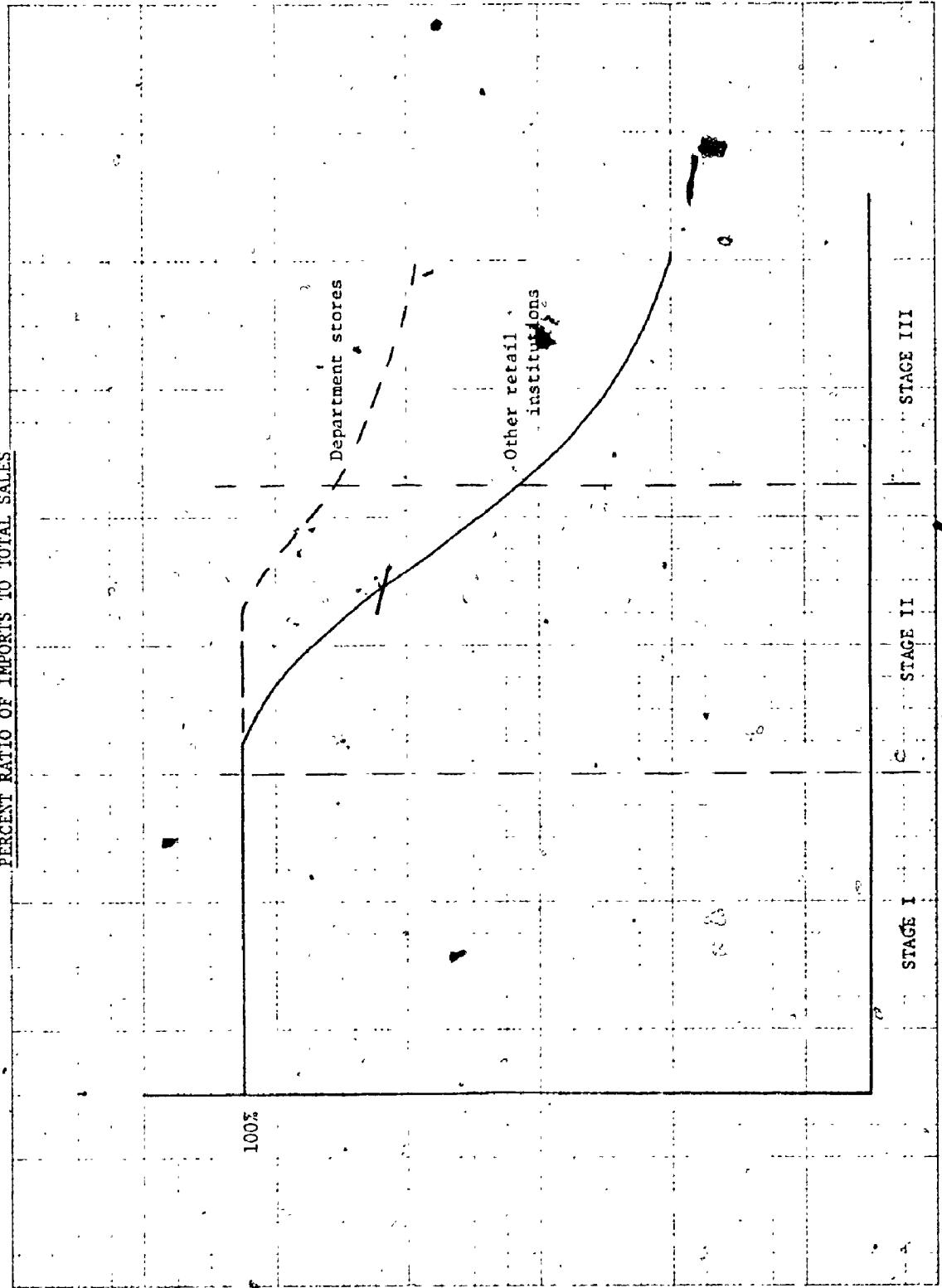


FIGURE V

PERCENT RATIO OF IMPORTS TO TOTAL SALES



subtle differences in strategy between these merchandising giants were to be expected, it was important to note any serious deviation on the part of any of these firms from the characteristic pattern of the bulk of the others. Consequently, the variance in adoption dates within the group of five major department store chains was compared to the variance within a large sample of other types of distributive institutions to determine if the former variance was significantly less.

RESEARCH DESIGN

The research reported below was divided into two basic parts, one of a primarily quantitative nature and the other with a more qualitative orientation.

PART 1

The first part of the research involved the accumulation of empirical evidence over time concerning the nature and extent of involvement of the five large Canadian department store chains with a selected group of relatively new consumer products in comparison to that of other types of distributive institutions in Canada. The statistical data gathered in this phase of the research was broken into two categories, one involving each of the five major Canadian department store chains, and the other involving the total Canadian market.

For each product selected for empirical examination the following information was accumulated:

- 1. Total annual unit sales in the Canadian market from time of the product's introduction until the end of 1972.
- 2. Total annual unit sales made by each of the major department store firms from the time of the product's introduction until the end of 1972.

- 3. Total annual unit sales of imported versions in the Canadian market from the time of the product's introduction until the end of 1972.
- 4. Total annual unit sales of imported versions made by each of the major department store firms from the time of the product's introduction until the end of 1972.
- 5. The date of original offering for sale of the product by each of the major department stores.

All of the information on annual unit sales and imports of the major department stores was obtainable only directly from records of the individual companies and required a major effort on the part of these firms to put together. The five large Canadian department store chains were selected as the main source of unit sales data because they were the most prominent examples of powerful, broad-based distributive institutions in Canada. Within the Dominion Bureau of Statistics classification of department stores, five firms stand out as dominating the market. They are:

- The T. Eaton Company
- Simpson-Sears Limited
- The Hudson's Bay Company
- The Robert Simpson Company
- Woodwards Stores Limited

These firms comprise a privately-owned Canadian firm (T. Eaton Co.), two publicly-held Canadian firms (The Robert Simpson Company and Woodward's Stores Limited), one U.K. controlled firm (The Hudson's Bay Company) and one firm with ownership divided between Canada and the United States (Simpson-Sears Limited).

In view of the high degree of concentration among Canadian department stores, it was decided to solicit the cooperation of all five of these firms in providing the information required.

The accumulation of annual unit sales and import data for the

total Canadian market was somewhat more complex as it involved tapping a variety of information sources. Among these sources were D.B.S., published statistics and special studies, published and unpublished statistics of the Department of Industry, Trade and Commerce, U.S. Department of Commerce export statistics, export statistics of various other foreign nations, statistics of certain Canadian Trade associations, several Canadian and foreign trade publications, and personal interviews with senior officials of a number of Canadian manufacturing and distributive firms and Trade Organizations. The latter source of information in fact proved to be most valuable in providing information on the critical early period immediately following each product's introduction to the Canadian market.

The following firms and organizations participated generously in providing information important to this study:

- o The Hoover Company Limited
- G.S.W. Limited
- Canadian Appliance Manufacturers Association
- Market Data Division, Department of Industry, Trade and Commerce
- Bell and Howell Canada Limited
- Canadian Photographic Trade Association
- ~~MacLean-Hunter Research Bureau~~
- R.C.A. Limited
- Head Ski Company, Canadian Division
- o Philips Electronics Industries
- Retail Council of Canada
- Canadian Kodak Limited
- Interphoto Corporation of Canada Limited
- Sunbeam Corporation (Canada) Limited
- Canadian General Electric Company Limited
- Electronic Industries Association of Canada

Much of the difficulty encountered in the gathering of national annual unit sales and import statistics for new consumer products was related to the fact that until an individual product attains a reasonable volume of sales in the Canadian market, as defined by D.B.S.,

information pertaining to it is not available separately since the product is lumped in with other similar types of goods in all published data. Because this study focuses on the period immediately following a product's introduction to the Canadian market when its sales volume is relatively small, it was found to be impossible to rely on D.B.S. statistics exclusively. Unfortunately, while there are also limitations in the quality of the annual unit sales and import data secured from the remaining sources, no other more satisfactory options were available.

PART II

In the second part of the research, an attempt was made to gain some insight concerning the strategic decision processes of various types of distributive institutions in Canada with respect to adoption of the particular consumer products selected for examination in this dissertation. It was anticipated that the results of this largely qualitative phase of the research would enhance the impact of those findings of the first and more quantitative phase. More specifically, it was hoped that knowledge of the sources of information used by those in different types of firms charged with making decisions to adopt new products would offer an improved understanding of the influences on the developing pattern of acceptance in the Canadian market of the various products being studied.

The empirical data gathered in this phase of the research was provided through the medium of a mail questionnaire to a probability sample of retailers and wholesalers across Canada and through a series of personal interviews with several firms.

In this phase the following information was accumulated for

each of the products studied:

1. The date of original introduction into the Canadian market.
2. The date of original offering for sale by each of the retail and wholesale firms surveyed through the questionnaire.
3. Identification of the types of distributive institutions offering the product for sale prior to their being adopted by the major department store chains.
4. Sources of information concerning new product ideas used by various distributive institutions in Canada and the nature of the decision processes of these firms which preceded their adoption of the new produce.
5. The nature of interactions between the major department store chains and their foreign suppliers which led to the importation of the product.

The bulk of this information was secured by means of the questionnaire which appears in Appendix C. The questionnaire was sent to a sample of about 360 retail and wholesale firms throughout Canada which were selected according to the following procedure.

First, using the 1966 Census of Retailers and Wholesalers in Canada compiled by the Dominion Bureau of Statistics, those categories of firms handling the specific products selected for study in this dissertation were isolated. Within each of these categories a simple random sample was drawn from the D.B.S. 1966 Census enumeration lists. This list of firms was checked using 1970 city directories and telephone directories to eliminate those which had disappeared between 1966 and 1970. Questionnaires were then sent to the approximately 360 firms remaining.

In order to test unambiguously the relationships hypothesized earlier, certain of the terms used had to be clearly defined. The

specific measures employed in testing the various hypothesized relationships are discussed in Appendix D. The means by which the individual products examined in the research were selected appear below.

SELECTION OF PRODUCTS FOR EMPIRICAL EXAMINATION

One of the desirable characteristics of any theory is that it apply under a sufficient variety of circumstances so as to be of value in the sense of its practical utility to decision makers. In recognition of the desirability of maintaining a reasonable scope, an attempt was made to test the previously hypothesized relationships in the context of a variety of consumer products.

It was decided to focus on the category of non-food consumer products for the purposes of this dissertation partly because a constant flow of innovation is in evidence in this category of products, partly because trade in such products represents an increasing proportion of total world trade, partly because trade in these products is in many respects more attractive to the exporting nation than is trade in natural resources or non-manufactured goods, and partly because the pattern of influences on trade flows for this category of products is perhaps most complex.

Since the category of non-food consumer goods itself represents an enormous range of products of widely varying characteristics, it was decided to confine the empirical tests to nine specific products with differing characteristics in an effort to expose the hypothesized relationships to as broad a variety of product types as possible.

In selecting the specific products to be considered for detailed examination, the views of individuals representing retailing, manufac-

turing and the Department of Industry, Trade and Commerce were solicited in order to minimize the possibility of constructing a sample biased in favour of the hypotheses. Each individual was requested to list several of the non-food consumer product innovations which in their opinion were among the most noteworthy to appear in the Canadian market within the past two decades. A major criterion in the narrowing of these preliminary lists of innovations to a final selection of products was the availability of information on unit sales. Many innovations, particularly in the very significant category of wearing apparel, had to be excluded because of the virtual impossibility of obtaining relevant data. The problems of isolating and defining specific innovations in the apparel field also ruled out such products. After considerable deliberation, the following products were chosen from the list of possibilities for examination in the proposed research:

<u>Product Category</u>	<u>Product</u>
Major kitchen appliances	Domestic Dishwashers Twin-tub washers
Home entertainment products	Console stereo record players Colour television
<u>Small appliances</u>	<u>Cassette tape recorders</u>
Beauty aids	Electric hair dryers (Hard shell)
Photographic equipment	Super 8 movie cameras
Sporting goods	Metal skis
Home furnishings	Needle punched carpeting

It is perhaps noteworthy that of these nine products, seven were originally commercialized in the United States, one in the United Kingdom, and one in Holland. Although data was accumulated from the

major departmental chains and through the mail questionnaire for all nine products, it subsequently proved impossible to secure meaningful data on national unit sales of needle punched carpeting. Consequently, this item was deleted from the list leaving eight consumer products for detailed examination in the following chapters.

PART 2

CHAPTER VI

HOUSEHOLD ELECTRIC DISHWASHING MACHINES

Perhaps as a function of its revolutionary newness in terms of the use for which it was designed, the household electric dishwashing machine has exhibited a pattern of market development quite distinct from that of the other products examined in this study. Nevertheless, from the time of its introduction to the Canadian market, the pattern of adoption of the household dishwashing machine has been almost identical to that which the "Diffusion Model" would predict.

One striking feature of the development of the household dishwashing market in Canada has been the length of time during which the product has remained in the "introductory" phase of its life cycle in comparison to other new household appliances. Although electric dishwashing machines would even today be described as "new" by many potential consumers, they have, in fact, been offered for sale in Canada for more than three decades.

The first household electric dishwashing machines were developed by a U.S. firm and offered for sale in that country as early as 1925. It is believed that the first units were made available to Canadian consumers by 1939, although the earliest known attempt by the Canadian subsidiary of a U.S. manufacturer to market the product in Canada came in 1946. In spite of its early introduction to the Canadian market, it was not until the 1950's that household electric dishwashers really progressed beyond the stage of being a "curiosity" to consumers in Canada. All units sold in Canada during the early years were imported

from the United States either by Canadian subsidiaries of U.S. manufacturers or by household appliance distributors. Sales and imports remained negligible, climbing to only 1,330 units in 1952, the first year for which recorded statistics are available on Canadian imports of the product. During the following year, one Canadian subsidiary of a U.S. firm reportedly began to assemble units from component parts imported from the U.S. although the volume of units produced in the Canadian plant remained nominal until 1959. Other subsidiaries of American producers of dishwashers continued to import completed units from their U.S. parents until the early 1960's.

In 1961 the Canadian Government took steps to slow what by then was a rising tide in household dishwashing machine imports into Canada. During that year household electric dishwashing machines were first classified for customs purposes as "made in Canada" which resulted in a sharp increase in import tariff from 7½% to 22½%. The effect of this action, as might be expected, was to lead several other subsidiaries of American producers of dishwashers to undertake production in Canada. At this time "production" consisted largely of assembling units from component parts imported from the U.S. parent. It is only since the latter half of the 1960's that Canadian production has begun to approach an integrated process with an associated decline in foreign produced component content.

Total annual Canadian sales of household dishwashing machines had climbed slowly to 18,128 units by 1962, thereafter increasing sharply to 124,600 units in 1972. (See Table 1). Growth in Canadian imports before 1970, while steady, occurred at a much slower pace, with the result that as a percentage of total Canadian sales, imports dropped from over 90% in

1960 to less than 30% in 1968 and 1969. During the first three years of the 1970's, however, imports have increased sharply both in absolute terms and as a percentage of total Canadian sales. (See Table 1)

A unique and important feature of the market for household dishwashing machines has been the major evolution which has occurred in product design since the time the original units entered Canada. Today there are three distinct basic types of dishwashing machines offered in Canada: the undercounter or built in, the top-loading portable and the front-loading portable. Most firms now offer each of these types in a variety of models and colours. While the fundamental task performed by all three basic types of dishwashers is identical, major shifts have nevertheless occurred in the relative volume of sales accounted for by each type of machine. Between 1968 and 1972 portable top loaders declined in importance from 46.6% of the total market to 11.5% while portable front load models increased their market share during the same period from 15.8% to 51.0%. Built in models accounted for the same market share in both 1968 and 1972. More recently, the appearance and proliferation of the use of colours in dishwashing machines, as in all other kitchen appliances, has become an important factor in the marketing of the product. And finally, to further complicate the picture, manufacturers have tapped still other avenues of product differentiation with the addition of certain features to the basic dishwashing unit itself such as the wooden chopping surface which has become commonplace on many portable models. All this is to suggest that the household electric dishwashing machine, which only recently has begun to enjoy wide acceptance among Canadian consumers, represents an enormous improvement over the first units imported from

the U.S. more than 30 years ago.

A final feature of the dishwashing market in Canada which bears mention involves the channels of distribution for the product. In addition to being sold through traditional retail outlets, a substantial number of units go directly to builders for installation in new homes or apartments. In recent years, more than 15% of dishwashing machines sold in Canada have gone through such builders.

An examination of the developing pattern of acceptance of household dishwashing machines in the Canadian market from the point of view of the involvement of various types of distributive institutions yields additional insights. The experience of Canada's major department store chains with the product has been varied. One firm actually reports having offered electric dishwashing machines for sale as early as 1946 although the results of its early experiment were described by one executive as "unsuccessful". The same firm, in fact, reported that its total volume of dishwasher sales remained negligible until the early 1960's and even in 1969 its total unit volume in the product amounted to less than five percent of the total accounted for by the five major Canadian department store chains alone.

A second large department store chain began to sell imported household electric dishwashers in 1951 followed within a year by a third. Both these firms indicated that the original units which they offered for sale were sourced through Canadian-based distributors or agents for the products of the U.S. manufacturers. The fourth major departmental chain bought a small number of United States produced units through a Canadian importer in 1954 but by the following year was sourcing direct to another American producer. At the other end of

the adoption spectrum, the latest reported date of first offering for sale of dishwashers by a major Canadian department store chain was early 1961. In contrast to the practice of the other large department stores, this firm bypassed Canadian distributors and agents in favour of importing directly from a U.S. manufacturer and, in fact, as of 1972, continued to import all but 5% of its units direct.

Reports of unit sales of household dishwashing machines provided by the five large Canadian department store chains revealed a gradual increase until the middle years of 1960 at which time the rate of growth accelerated noticeably. (See Table 1 and Chart 1). As suggested by the third major hypothesis addressed in this study, the share of total Canadian unit sales of household dishwashing machines accounted for by the five large department stores climbed from 13.6% in 1961, the year in which the last of these firms adopted the product, to a high of 36.1% in 1971. The rate of increase in market share accounted for by the major departmental chains dropped off after 1970 and in 1972 the percentage actually fell to 34.0%. In addition, it is to be noted that it was during 1963 that total Canadian unit sales of dishwashing machines began the sharp upward climb which has continued into the 1970's with

the single exception of the year 1970 which marked a minor recession in the Canadian economy as a whole. In terms of sales, then, dishwashers do appear to fit the pattern hypothesized in the "Diffusion Model" as sales growth entered its steepest phase within two years after the last major department store chain adopted the product. Furthermore, as sales of dishwashers entered the rapid growth period, department stores were seen to have captured a rapidly increasing share of the total market, but as rapid growth continued, the rate of increase in

share dropped off and finally the share itself declined reflecting the increasing participation of other types of retail outlets in sales of the product.

Turning to import activities, the results with respect to the major department store chains are even more enlightening. We have seen that total Canadian imports of domestic electric dishwashing machines climbed steadily up to 1960 at which time they dipped sharply, reflecting the increased duty levied during 1961. By 1965 total unit imports had again surpassed their 1960 level and with the exception of the year 1968, have continued to rise ever since (see Table 1). As a percentage of total Canadian sales, however, imports dropped in almost every year up to 1970 dipping below 30% in 1968 and 1969. Since then imports have risen sharply to 48.9% in 1972. In sharp contrast, the import proportion of unit sales through the five large department store chains as a group has not only been larger than the proportion for the nation as a whole in every year since Canadian production began in earnest, but in recent years has risen to the highest level since Canadian production began. During 1970, sales of imported household dishwashing machines through these five firms represented 95.9% of their total sales of dishwashers. Two of the firms still imported 100% of their units from U.S. producers in 1972. The proportion of total Canadian imports of household dishwashers accounted for by these five firms alone climbed in every year to a peak of 95.7% in 1970. (See Table 1). Conversely, if we examine unit sales of imports for all Canadian retailers excluding these five major department store chains, we find that the total volume has fluctuated irregularly since Canadian production began, with the figure for 1970 being the lowest of any preceding year. Predictably,

therefore, the percentage of unit sales through these remaining outlets represented by imports declined steadily to a low of 2.3% in 1970 before climbing back to 27.8% in 1972. Thus, hypothesis 1 of disproportionate import involvement of major department stores is firmly upheld in the case of household electric dishwashing machines.

The results of the sample survey of Canadian retailers also offer strong support to the hypotheses in the case of dishwashers and, in addition, provide a comprehensive chronological picture of the involvement of various types of distributive institutions with the product. Of the 106 completed questionnaires received, 54 firms reported that they currently stocked electric dishwashing machines, they had in the past or they intended to in the future. Of these 54 firms, 41 indicated the specific time at which they first offered dishwashers for sale. The distribution of reported adoption dates was as follows:

- (1) Five firms, all independent specialty appliance retailers and all located in major Canadian urban centers reported offering dishwashers for sale before 1951 which was the first year that a major department store chain reported seriously offering the product for sale.
- (2) Twenty-one firms reportedly offered dishwashing machines for sale for the first time after the last of the major department store chains accepted the product (i.e., after early 1961).
- (3) The remaining fifteen firms reported first offering dishwashing machines for sale between 1951 and 1961 and most were in the second half of the 1950's.

Of the thirteen firms which did not report a specific date of first offering the dishwashers, more than half reported either that they had decided to stock dishwashers only after the product demonstrated its acceptability in the market or that they believed other firms to have adopted before them.

Thus, the results of the sample survey with respect to dishwashing machines support the idea that, while major department stores were not first to offer the product for sale in Canada, they did so early relative to the bulk of other types of retail firms. It is also noteworthy that serious production of dishwashers in Canada did not occur until after all the major department store chains had begun to offer the product for sale. This observation also tends to support the "Diffusion Model".

In summary, the case of the domestic electric dishwashing machine in every instance appears to confirm the hypotheses outlined earlier. It is a classic representation of the early phases of the "Diffusion Model".

TABLE 1

HOUSEHOLD ELECTRIC DISHWASHING MACHINES
COMPARATIVE DATA

	TOTAL CANADA			TOTAL CANADA LESS MAJOR DEPARTMENT STORES			MAJOR DEPARTMENT STORES		
	Sales	Imports	Import Percentage	Sales	Imports	Import Percentage	Sales as % of Total	Imports as % of Total	Import Percentage
1952	1,330	1,330	100.0						
53	2,205	1,905	86.4						
54 a	3,062	2,662	86.9						
55	3,863	3,343	86.5						
56	6,149	5,883	95.7						
57	6,302	5,854	92.9	5,902	5,454	92.6	6.3	6.8	100.0
58	9,759	9,167	93.9	9,159	8,567	93.6	6.2	6.6	100.0
59	12,382	11,483	92.7	11,582	11,163	96.5	6.5	2.8	40.0
1960	14,665	13,665	93.2	13,765	13,325	96.8	6.1	2.5	37.8
61	16,733	10,733	64.1	14,449	9,089	62.9	13.6	15.3	72.0
62	18,128	10,328	57.0	15,690	8,880	56.6	-13.4	14.0	59.4
63	23,217	11,717	50.5	20,096	9,886	49.2	13.4	15.6	58.7
64	31,365	12,133	38.7	26,738	9,326	34.9	14.8	23.1	60.7
65	38,250	17,553	45.9	31,569	12,933	41.0	17.5	26.3	69.2
66	50,250	18,797	37.4	39,768	11,695	29.4	21.4	37.8	66.2
67	59,650	22,308	37.4	43,066	12,454	28.9	27.2	44.2	60.7
68	72,250	19,004	26.3	54,373	6,572	12.1	25.1	65.4	68.6
69	80,500	23,020	28.6	57,285	6,285	10.9	28.8	72.7	72.1
1970	80,400	28,235	35.1	52,222	1,205	2.3	35.0	95.7	95.9
71	101,000	43,484	43.1	64,566	8,739	13.6	36.1	79.9	95.4
72	124,600	61,989	48.9	82,238	22,891	27.8	34.0	63.1	92.3

Source: (1)

(2)

(3)

(3)

CHART 1

HOUSEHOLD ELECTRIC DISHWASHING MACHINES UNIT SALES GROWTH CURVES

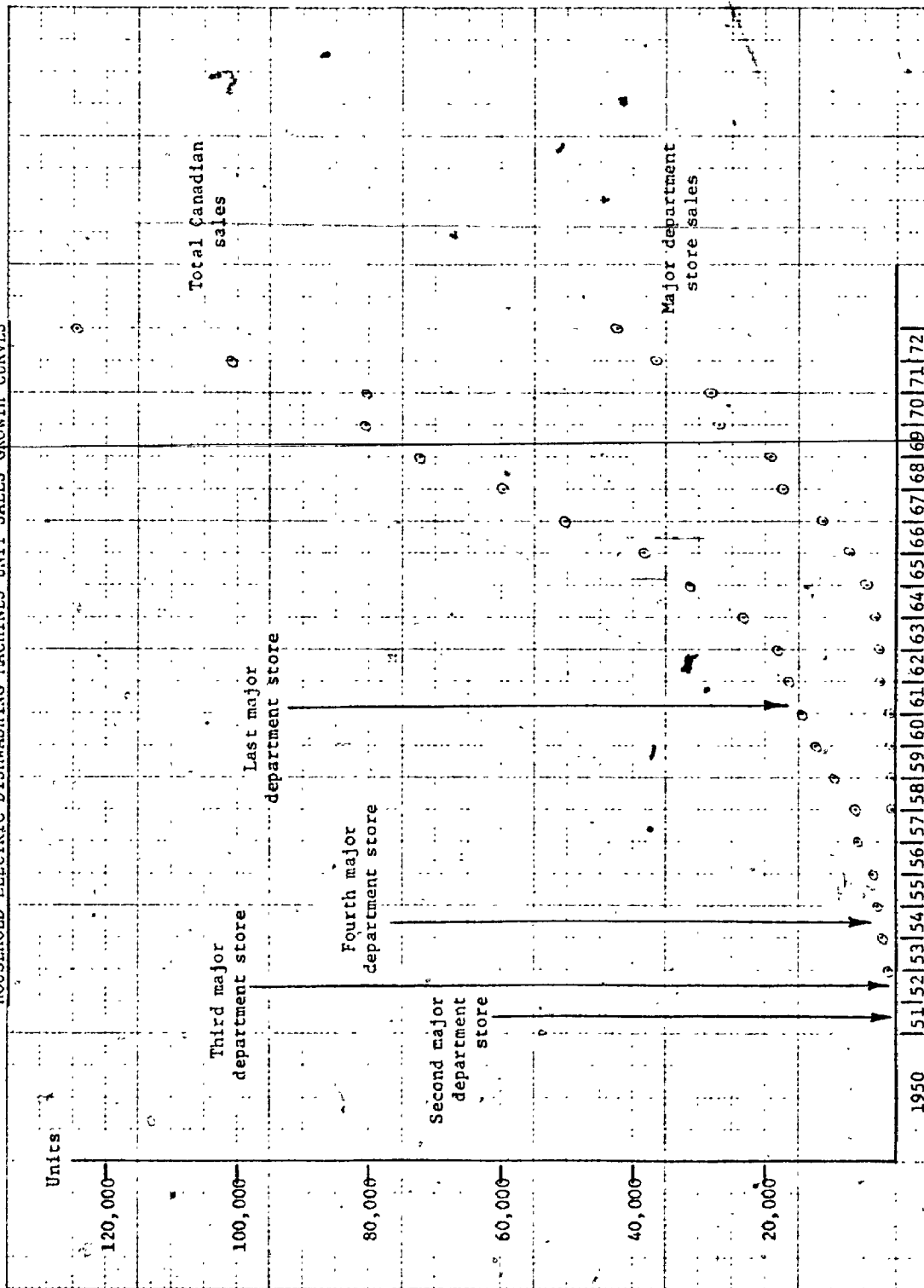
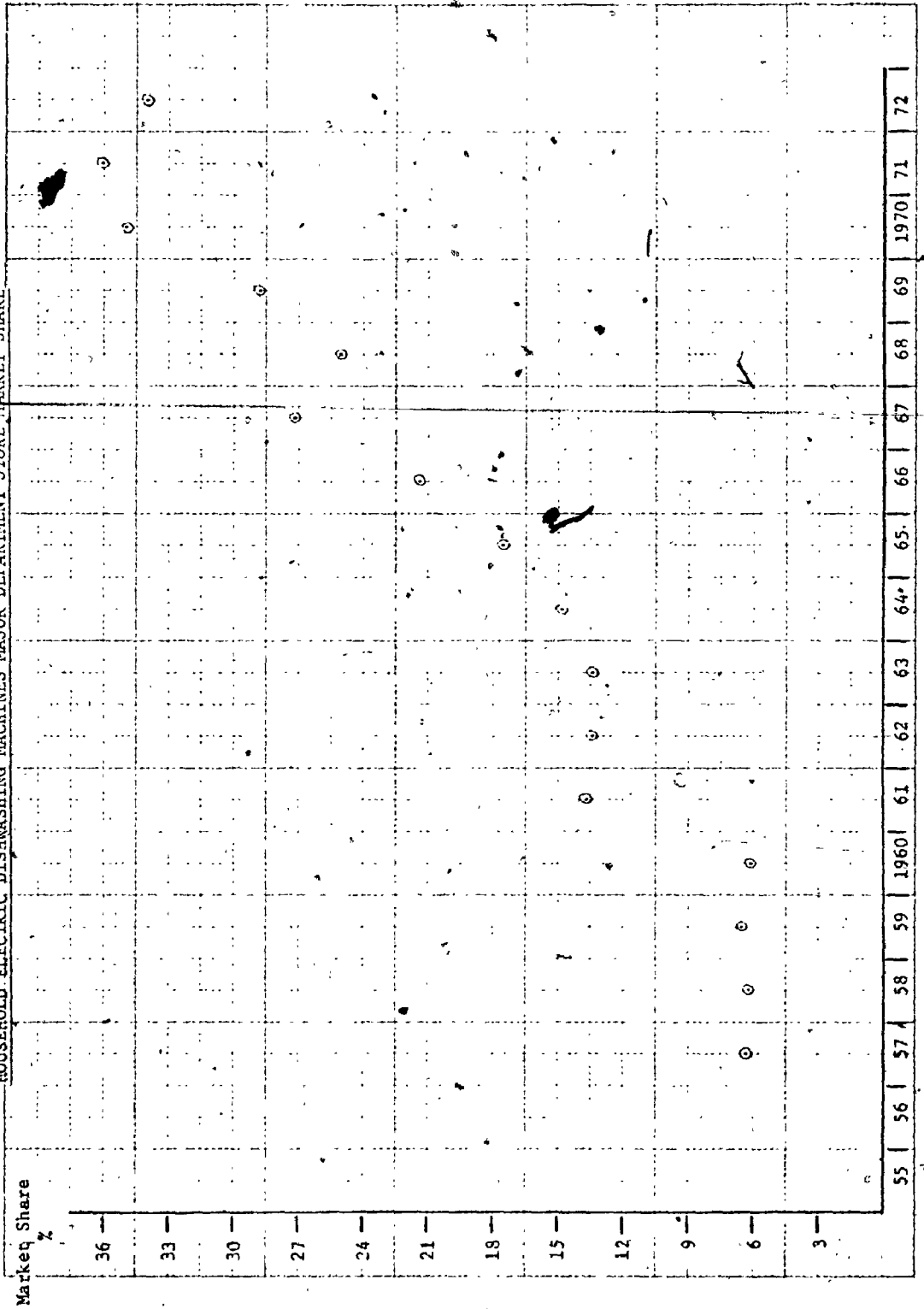


CHART 2

HOUSEHOLD ELECTRIC DISHWASHING MACHINES MAJOR DEPARTMENT STORE MARKET SHARE



SOURCES OF STATISTICAL INFORMATION

- (1) Derived from company production data and imports in the early years and from data provided by the Canadian Appliance Manufacturers Association in subsequent years.
- (2) Derived from United States Department of Commerce FT 410 until 1963 and DBS 65-007 since then.
- (3) Accumulated from confidential records of the individual major Canadian department store chains.

CHAPTER VII

TWIN-TUB WASHING MACHINES

The twin-tub washer is a product of particular interest to this study because it had its commercial origin not in the U.S. but rather in Europe, in response to needs peculiar to the European market. It is perhaps not difficult to envisage that such a product would be conceived in a nation characterized by family dwellings in which excess space is non-existent. Unlike most North American homes, a typical dwelling in Europe does not have a basement in which to place laundry appliances. Consequently, as more and more families were able to afford domestic laundry equipment but did not have the space to accommodate a large North American style washer/dryer set, the development in such a setting of a compact and portable unit incorporating a small automatic washer and spin dryer was not surprising.

The acceptance of the twin-tub in the Canadian market came about in response to a somewhat different set of need conditions. Its major appeal in this country was to apartment dwellers who also were faced with a shortage of space but, more important, were obliged to share communal laundry facilities, often located in a distant part of the building and which normally were available only on scheduled occasions. The addition of a twin-tub unit in the apartment itself enabled the occupant to process small loads of laundry frequently. In addition, the original twin-tub washers featured a much shorter wash cycle time than traditional wringer type machines which made them attractive to

consumers interested in minimizing time spent doing laundry. A particularly illuminating fact concerning the spread in acceptance of twin-tubs to other markets is that not only was the product originally commercialized outside the U.S. market, but it had been successfully introduced to other markets such as Canada before even being offered to consumers in the U.S.

The original development of the twin-tub concept has been credited to the large multinational Dutch based firm, Philips in the early 1950's. However, the first successful commercialization of the twin-tub was engineered by Hoover in Great Britain about 1955. Twin-tubs were introduced to the Canadian market by the Canadian subsidiary of Hoover in September of 1964 and the firm enjoyed a virtual monopoly in the Canadian twin-tub market until 1967.

From the time that Hoover introduced twin-tubs to Canada, the firm has sold directly to retail dealers rather than employing the services of distributors. Interestingly, and in contradiction to what the "Diffusion Model" would predict, the first two retail outlets to offer twin-tubs for sale in Canada were major departmental chains although their success with the product at the outset was limited. Immediately thereafter, Hoover began a program of offering twin-tubs to selected dealers throughout Canada.

A peculiarity of the early development of the twin-tub market in Canada was that until 1967, product acceptance in the major metropolitan centres lagged relative to that of smaller population centres. Nevertheless, the products growth rate between 1965 and 1970 was without precedent in the Canadian appliance industry with annual sales reaching a high of over 137,000 units in 1969. The following year sales dropped

dramatically and although there was a recovery in 1971, unit sales to date have not regained their 1969 high. (See Table 2 and Chart 2)

When Hoover introduced the twin-tub to the Canadian market, they imported complete kits from the U.K. and assembled units in their Canadian plant. Within two years, however, the firm had increased Canadian content of their twin-tub to the point that production of the product was a highly integrated operation. A second Canadian based subsidiary of a foreign firm began easing into production of twin-tubs in a similar manner during 1969. By 1971 what had begun as an assembly operation using British produced components was approaching 50% Canadian content.

Other British producers began exporting completed units to distributors in Canada during 1967 but with limited success until arrangements were made during 1967 with Canadian manufacturing firms having established marketing departments to assume the task of marketing British produced twin-tubs in Canada. 1967 also marked the appearance of Japanese produced twin-tubs in Canada. These units were sold through distributors in Canada and by 1971 the number of imports of Japanese produced units had surpassed that of units coming from the U.K. Unit imports of twin-tubs from the U.K. and Japan jumped sharply to 38,849 units in 1968 with 16,972 of Japanese origin. With the exception of the year 1970, the large increase in imports continued into 1971 (reaching 82,175 units of which 26,154 came from the U.K. and 55,944 from Japan). 1970, however, saw a substantial drop in the number of twin-tubs imported as well as in the number of units produced in Canada. The decline was described by one industry official as the result of a very poor first half in 1970 due to unfavourable economic conditions.

Nevertheless, although a strong revival occurred during 1971 in both imports and sales, by 1972 it was clear that the unprecedented growth record of the twin-tub market in Canada was over. The percentage of total Canadian unit twin-tub sales represented by imported units which had risen sharply in 1968 and 1969, and then dipped slightly during 1970 jumped dramatically again during 1971 as at least one major Canadian producer began to phase out of domestic production.

One feature of the twin-tub itself bears mention in this discussion since it has undoubtedly influenced the market development to some extent. The washing machine assembly in the first twin-tub units was of an impeller driven type in which the swirling action was provided by jets of water sprayed from a rotating impeller. This principle has been maintained in the units of one major supplier and in virtually all the Japanese units. However, in 1967 a new type of washing system, employing an agitator of the type common to a wringer washer was introduced in an otherwise similar twin-tub unit. Although this agitator type twin-tub was able to command a greater than 30% retail price premium over the impeller type unit, it had nevertheless by the end of 1970 gained more than a one third share of the total Canadian twin-tub market and was increasing.

By 1970 other types of miniature portable laundry systems were being developed and sold in the U.S. market. These products were quite different in design to the typical twin-tub, yet were developed to satisfy a similar need. While one industry official commented as late as 1971 that these new systems did not represent a threat to the twin-tub market in Canada because they required special electrical wiring, by the following year it was obvious that the future success of the

twin-tub would be powerfully influenced by the performance of such systems. In 1972, 12,000 compact automatic washing machines and 22,000 compact electric dryers were sold in Canada and industry forecasts were calling for a doubling of washer sales and a 50% increase in dryer sales within two years. In its 1973 Major Appliances Industry Conference Report the Canadian Appliance Manufacturers Association (C.A.M.A.) commented that sales in Canada of twin-tub washers would be increasingly displaced by sales of compact automatic washers.

The distribution of twin-tubs in the Canadian market has been handled almost entirely through conventional outlets. Unlike the situation for other household appliances including automatic washers and dryers in which builders account for a substantial proportion of sales, very few twin-tubs pass through this channel of distribution.

The experience of Canada's major department store chains with twin-tubs is unique among the products studied yet tends to offer support to the central propositions of the "Diffusion Model". As outlined earlier, two of these firms offered the product for sale in September of 1964 before any other Canadian retailers. The first units sold by these firms were obtained from a Canadian-based affiliate of a large British producer. A third department store chain began to offer twin-tubs for sale in 1965 with its source of supply being the same as that of the other departmental chains. Then, in mid 1966, a fourth major department store adopted twin-tubs, also sourcing its original units through the sole Canadian supplier. However, in the following year, this firm elected to bypass Canadian sources of twin-tubs in favour of bringing in a number of the units directly from a British producer. Subsequently, the firm reverted to sourcing through a

Canadian intermediary largely because of servicing problems associated with the product. The last-reported first offering for sale of twin-tubs by a major Canadian department store chain came in the Spring of 1968. This firm bought originally from importers of both British and Japanese units and has continued to import all the units it sells.

The pattern of growth in combined unit sales of twin-tubs through the major department store chains in comparison to total growth in the Canadian market is in marked contrast to the case for domestic electric dishwashers, partly because of the tremendous growth in twin-tub sales which occurred very soon after the product was introduced and partly because two major departmental chains adopted the product before it was available to other Canadian retailers. The product, in effect, had already progressed well into its so-called "growth stage" in the Canadian market before the last major department store chain even offered it for sale. From the year in which the twin-tub was introduced to Canadian consumers, the major department store share of total Canadian twin-tub sales actually declined up to 1967. The drop in share was interrupted, however, in 1968 when department store sales jumped sharply upwards, reflecting the entry into the market of the last of the major chains. Since 1967 the major department store share has climbed steadily. (See Table 2)

The import experience of major Canadian department stores relative to other distributive institutions is consistent with what the "Diffusion Model" would predict. While Canadian-produced units were available from the outset, the major department stores were relatively quick to adopt foreign sources of supply and have to the present day continued to import a large proportion of the twin-tubs they sell.

During each year, they have imported a much larger proportion of their requirements than have all other types of firms.

The results of the sample survey with respect to twin-tubs adds support to the hypotheses of the "Diffusion Model". Fifty-five of the firms returning usable questionnaires reported either that they currently stocked twin-tub washers or intended to in the future. Of the 55, some 41 indicated the specific period of time during which they first offered twin-tubs for sale. The distribution of these times follows:

- (1) Contrary to what the "Diffusion Model" would predict, the first retail institutions to offer twin-tubs for sale in Canada were two major departmental chains.
- (2) Twenty firms indicated they first offered twin-tubs for sale only after the period during which the last major department store did so, or that they had not yet done so. If the relatively late adoption of this last departmental chain is taken into consideration, there are a total of twenty-nine of the firms reporting which adopted twin-tubs after all the other major department store chains.
- (3) Only ten firms adopted twin-tubs during the period September 1964 to June 1966 which spanned the first sale offering of all the major departmental chains with the one exception.
- (4) Of the 14 remaining firms which did not report a specific time at which they first offered twin-tubs for sale, nine indicated either that they adopted the product only after it had demonstrated a general market acceptability or that they adopted the product after they knew it to have been offered for sale by major departmental chains.

In summary, the results of the sample survey reveal that more than two-thirds of the fifty-five firms reporting on twin-tubs offered the product for sale subsequent to its having been available in all but one of the major department store chains.

The case of the twin-tub washer offers mixed support to the

central propositions of the "Diffusion Model". In this case, contrary to Hypothesis II (a), it has been found that two major departmental chains were actually the first distributive institutions in Canada to offer twin-tub washers for sale. However, adoption of the product by all major departmental chains did precede that of the bulk of firms surveyed as part (b) of Hypothesis II would predict. Second, it has been confirmed that the period of most rapid growth in unit sales of twin-tubs in the Canadian market began shortly after the product had been adopted by all but one of the major departmental chains. The proportion of total unit sales accounted for by the major departmental chains has continued to rise to the present day following adoption by the last major departmental chain in 1968. This continual increase in market share has occurred in spite of the fact that total Canadian sales have never regained their peak of 1969 and now show signs of stabilizing as other miniature laundry systems become an increasing factor in the market. And finally, consistent with Hypothesis I, the proportion of department store sales of twin-tubs represented by imported units has been seen to exceed by a wide margin the proportion for all other types of distributive institutions.

TABLE 2

TWIN-TUB WASHING MACHINES COMPARATIVE DATA

	TOTAL CANADA			TOTAL CANADA LESS			MAJOR DEPARTMENT STORES			MAJOR DEPARTMENT STORE CHAINS		
	Sales	Imports	Import Percentage	Sales	Imports	Import Percentage	Sales	Imports	Import Percentage	Sales	Imports	Import Percentage
1964	7,663	0					1,200	0	15.7			0.0
65	20,446	0		17,396			3,050	0	15.0			0.0
66	34,735	20	0	30,829	20	0	3,906	47	11.2			0.0
67	70,154	7,819	11.2	64,804	3,015	4.7	5,350	4,804	7.6			90.0
68	115,000	38,849	35.4	99,864	25,797	25.8	15,136	13,052	13.2			86.3
69	137,100	64,982	47.4	115,271	46,591	40.5	21,829	18,391	15.9			84.1
1970	100,000	41,655	41.7	75,442	21,375	28.3	24,558	20,280	24.5			82.4
71	125,000	82,175	65.7	91,074	53,754	59.0	33,976	28,421	27.2			83.6
72	120,000	75,627	63.0	80,787	46,699	57.9	39,213	28,928	32.7			73.8

Source (1) (2) (3) (3) (3)

CHART 3

TWIN-TUBS UNIT SALES GROWTH CURVES

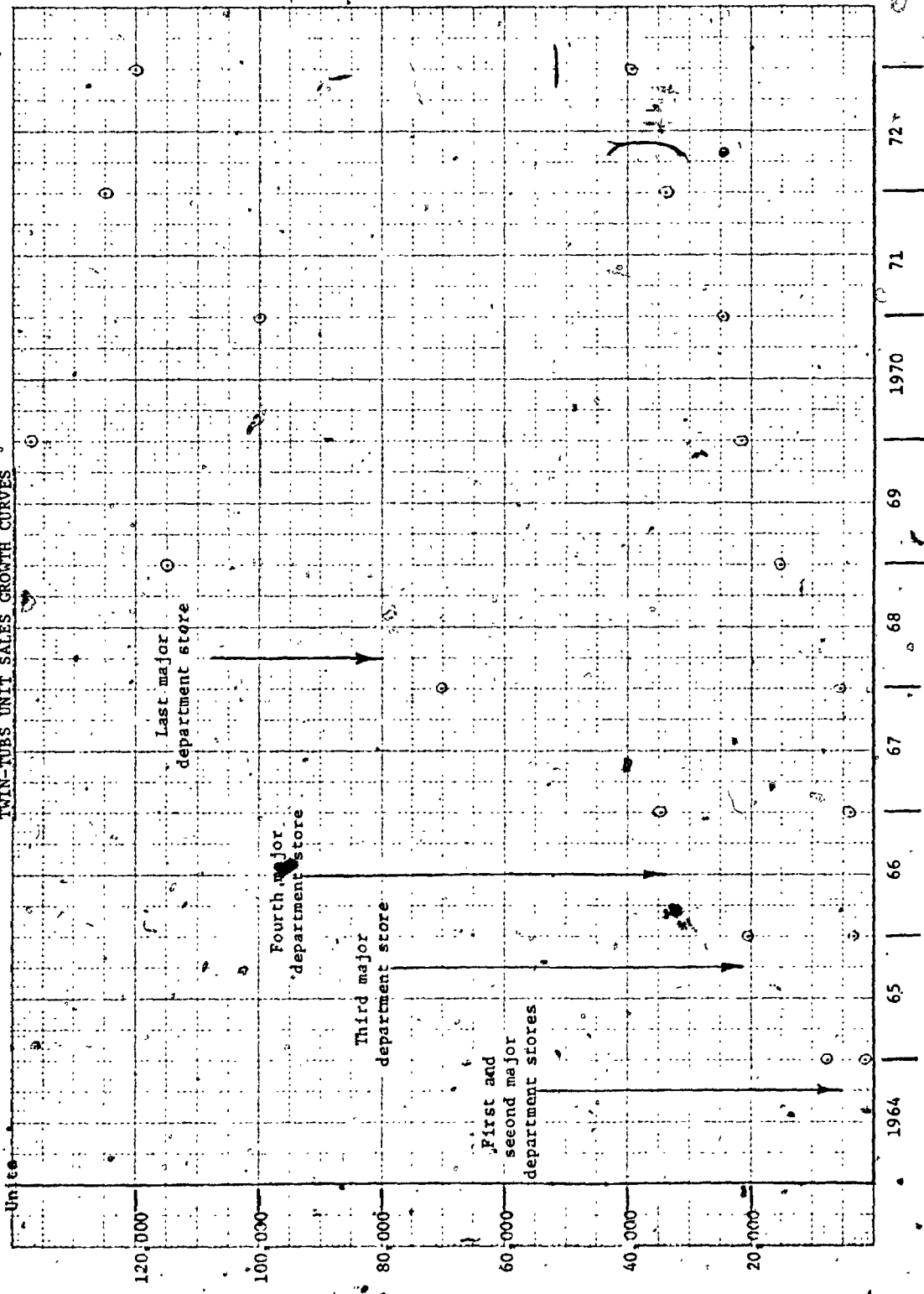
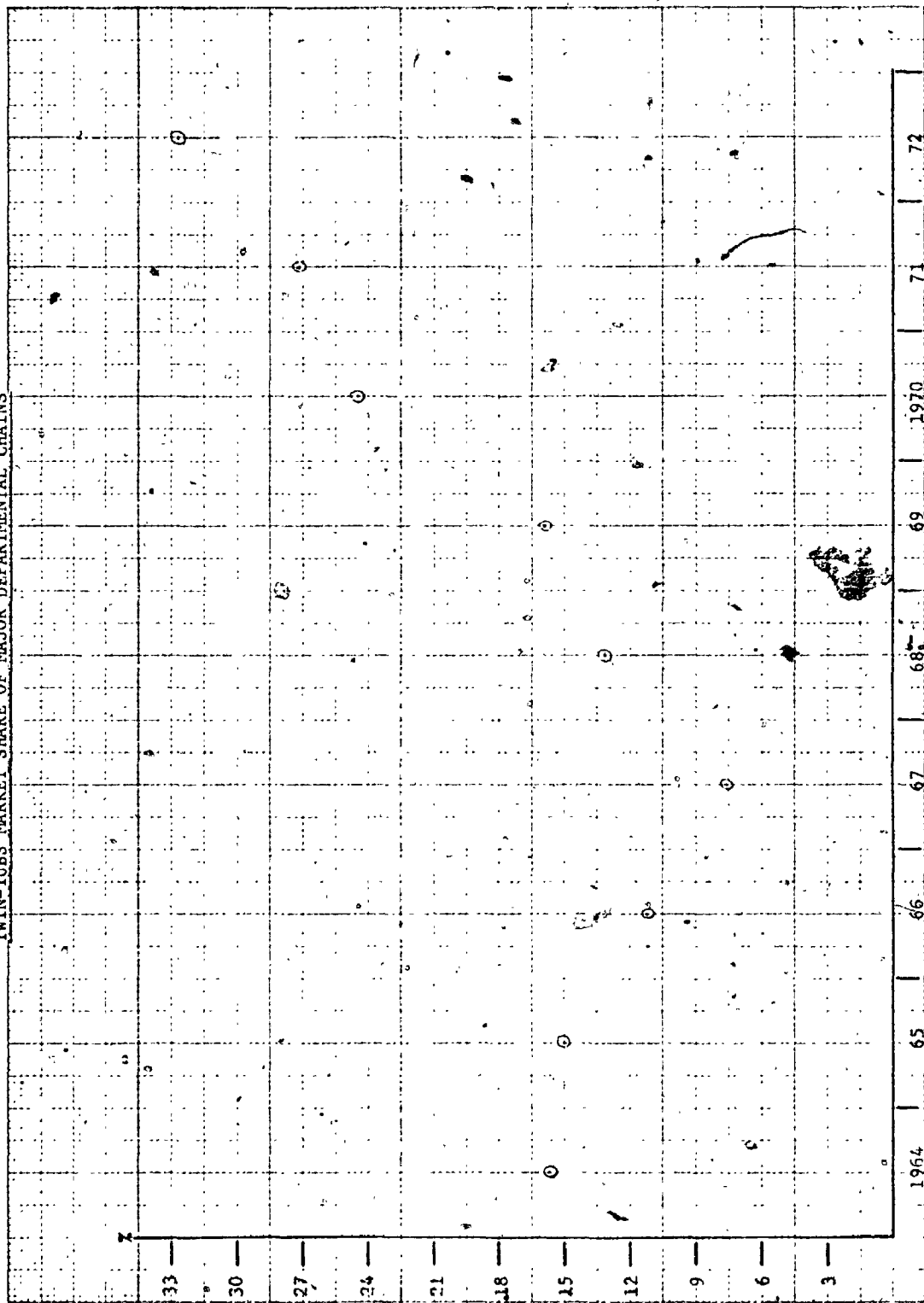


CHART 4
TWIN-TUBS MARKET SHARE OF MAJOR DEPARTMENTAL CHAINS



SOURCES OF STATISTICAL INFORMATION

- (1) Derived from confidential company records before 1968 and from data provided by the Canadian Appliance Manufacturers Association in subsequent years.
- (2) Derived from DBS 65-007 and information provided by the Canadian Appliance Manufacturers Association.
- (3) Accumulated from confidential records of the five individual major Canadian departmental chains.

CHAPTER VIII
COLOR TELEVISION

The case of color television provides a most interesting confirmation of the "Diffusion Model". The introduction and subsequent spread in acceptance of this product in the Canadian market has followed a clearly discernible pattern in which different types of institutions have been important participants at different stages of its acceptance.

Color television has a unique origin in that a systematic planned program of research by a U.S. leader in consumer electronics with a clearly defined objective preceded the innovation of this product. The basic problem surrounding the development of color television was one of developing a picture tube which would provide satisfactory quality and performance at reasonable cost and would not lead to exorbitant costs in chassis design and construction. Herein lay the innovation associated with color television, since the skills of chassis design and cabinetry were not unlike those required in the construction of black and white television. The color tube designed by RCA in the U.S. set a standard for the industry and was incorporated at least initially into most of the color television sets produced in Canada.

Color television sets were being produced in the U.S. as early as 1953, the year in which the Federal Communications Commission approved the standards for color broadcasting, although the first available

records of any substantial production date from 1956 when 100,000 sets were reportedly produced. When a substantial increase in the amount of color programming occurred in the fall of 1961 sales of color television sets in the U.S. began to climb steeply.

Color television sets were actually made available in Canada by subsidiaries of U.S. manufacturers as early as 1954. These first units were offered for sale through dealers handling the products of the importing subsidiary. Sales in Canada remained nominal into the 1960's, and it was not until 1962 that the first color sets were assembled in Canada by RCA, using U.S. components. During that year total Canadian sales of color television sets were estimated at 1,100 units. In the following year some 750 color sets were assembled in Canada with an additional 1,800 imported from the U.S., and in 1964 the totals climbed to more than 1,500 and 3,672 units respectively. (See Table 3). At least two more firms in Canada began to produce color sets during 1964.

Although color television broadcasting did not take place in Canada before fall of 1966, many Canadian homes were able to receive color programs before that time from U.S. stations either directly or via cable T.V. Consequently sales of color sets in Canada exceeded 5,000 units in 1964 and reached 12,000 in 1965. When color broadcasting commenced in Canada during 1966, sales rocketed to 100,000 units in that year and continued to grow rapidly reaching 817,716 units in 1972. A number of other Canadian subsidiaries of U.S. companies began producing color sets in Canada during 1966, likely in recognition of the 20% tariff placed on imported units. The year 1966 was an important one to the color television industry in Canada for yet another reason,

for it was in that year that Canadian producers first experienced import competition from nations other than the U.S., notably Holland and Japan.

Since 1965, importing of color sets into Canada has taken a number of forms and been carried on by a variety of different organizations. First, Canadian subsidiaries of U.S. manufacturers have continued to import completed units from their American parents largely to fill out their lines with "top-of-the-line" models not produced in Canada. In addition, however, they have recently begun to import "low end" portable units from Japan because of their inability to match the very low costs of these Japanese units. A second type of importing has been that resulting from the efforts of certain U.S. producers to market a full line of color sets in Canada direct from their U.S. plants. Although these firms do not have manufacturing subsidiaries in Canada, they have established distribution facilities which have enabled them to carry out aggressive marketing programs in the Canadian market. Imports of color sets from Holland have been made by the Canadian subsidiary of a powerful consumer electronics corporation headquartered in Holland and have tended to be of higher priced units.

Imports of many of the Japanese sets, however, have been of a quite different type. A large number of these units are known to have been imported directly by Canadian retailers, notably the major department store chains who, even as early as 1966, elected to bypass Canadian subsidiaries and distributors in favor of sourcing directly with the Japanese producer to take advantage of substantially lower prices. Many of these Japanese units were private brands built expressly for individual retail firms. Total imports of color sets into Canada climbed

rapidly to 312,265 units in 1972 of which 169,505 came from Japan. A reduction of the import tariff to 15% during 1969 had undoubtedly stimulated the importation of low cost Japanese units in subsequent years. During 1970 Japanese imports had for the first time surpassed those from the U.S.

An important feature of the color television market in Canada pertains to the changing mix in sales and imports between types of units. Where the first units offered for sale in Canada were larger console models, in recent years table or portable models have assumed an increasing share of the market, surpassing 40% by 1970. In light of this pronounced trend, it is significant that while most of the color sets imported from the U.S. in the immediate past years have been of large console units, virtually all those coming from Japan have been portable models.

In summary, it has been noted that color television was originally introduced to the Canadian market by the Canadian subsidiary of a large U.S. consumer electronics firm. This firm imported, from its U.S. parent, the first units it offered to its dealers but was also first to initiate production of color sets in Canada. While several other subsidiaries of U.S. companies and Canadian-owned firms subsequently entered production in Canada, imports remained substantial, particularly in the growing portable segment of the market.

The experience of Canada's major departmental chains with color television, while varied, nevertheless tends to support the central propositions of the "Diffusion Model". The first major Canadian departmental chain to offer color television for sale reports having done so as of November 1958. These original units were imported, being sourced

through a Canadian-based subsidiary which brought in units from its U.S. parent. Subsequently, this firm also sold Canadian-produced units, but in 1966 arrangements were made to import a substantial number of color sets directly from a foreign manufacturer. These direct imports have accounted for an increasing share of the firm's imports to the present day.

During 1964, three more major department store chains began to offer color television sets for sale, and although they all sourced initially through Canadian subsidiaries of U.S. producers, in two cases the units were imported, while in the other they were produced in Canada. The last major department store chain to offer color television for sale did so early in 1965, sourcing directly with a U.S. manufacturer. This firm has continued to deal directly with manufacturers in both the U.S. and Japan for all its import requirements in favour of going through Canadian subsidiaries and distributors. All the portable units sold by this firm have been imported directly from Japan.

Reports of unit sales of color sets through the major departmental chains indicate that sales through these outlets were small until 1965, at which point they began to climb sharply. Since 1966, sales through major department stores have maintained their rapid growth rate, reaching 128,744 units in 1972 (See Table 3). The proportion of total Canadian sales of color sets accounted for by the five major department store chains rose from 4.5% in 1962 to 20.2% in 1967, thereafter declining steadily to 15.8% in 1972. The decline in major department store share of the color T.V. market which occurred subsequent to 1970 occurred while the growth in total Canadian unit sales continued at an accelerated pace. It is significant that the largest

increase in major department store share of total sales came shortly after all these firms had adopted the product and during the early part of the period in which growth in total Canadian sales was most rapid. Once again, the participation of major departmental chains seems to have increased sharply early in the period of most rapid growth in the total Canadian market and declined thereafter as an increasing number of other retail institutions offered the product for sale.

The import involvement of major department store chains does not appear to support the "Diffusion Model" on the basis of aggregate import data. However, as pointed out earlier in this chapter, the existence of three distinctly different types of import activity involving color television sets has the effect of distorting the significance of aggregate import figures. Contrary to what the "Diffusion Model" would suggest, the proportion of major department store unit sales represented by imported sets is lower in all but one year (1966) than the corresponding percentage for all other types of distributive outlets. However, if sales and imports are separated into portable sets and console sets the picture is quite different. Major department stores appear to be importing nearly all of the portable color sets they sell and, moreover, most of them are sourcing these portable units direct from manufacturers in Japan. In recent years, a much higher proportion of the portable units sold in Canada have been imported from Japan or the United States than has been the case for console units where fewer than 10% of the units sold have been imported. Furthermore, information provided by the major departmental chains indicated that in excess of 75% of the portable units they sold were imported while the proportion for the nation as a whole was below 50%. However, when it is

noted that the proportion of portable to total unit sales of color units through the major departmental chains is much smaller than for the nation as a whole, it becomes clear why the gross department store import percentage is smaller than the percentage for all other retailers combined. In the case of portable units the import percentage of the major departmental chains was substantially higher in each year than the percentage for all other retail institutions but for the larger console units the department store percentage would be expected to be smaller.

Results of the sample survey for the case of color television once again tend to confirm the participation of major department stores as coming relatively early in comparison to the bulk of other types of distributive institutions. A total of 75 firms reported either that they currently stocked color television sets or that they intended to in the future. Of these firms, 58 indicated the specific time at which they first offered color sets for sale. The distribution of these times of first offering are as follows:

- (1) Four firms, all independent retailers specializing in television and related products or appliances reported offering color television sets for sale prior to late 1958, when the first major departmental chain in Canada began offering the product for sale.
- (2) Thirty-nine of the firms reported first offering color television for sale only after the time at which the last major department store chain adopted the product (i.e., after early 1965).
- (3) Fifteen firms indicated they first offered color television for sale between late 1958 and early 1965 and five of these adoptions were in 1964.
- (4) Of the remaining fifteen firms which did not report a specific time of first offering color television for sale, nine indicated they had only done so either after the product was available in department stores

or after the product had been offered for sale by other firms and had demonstrated its acceptability in the market.

Thus, the sample survey indicates that nearly two-thirds of the 75 reporting firms added color television to their product assortment only after it had been available in the major department stores while only four firms offered the product for sale before any of the major departmental chains.

Color television, although unique among the products studied in terms of its market development, nevertheless appears to conform to the pattern hypothesized by the Diffusion Model. The relatively low import involvement of the major departmental chains in the case of color television is particularly surprising in view of the considerable initiative known to have been taken by these firms in importing directly from foreign manufacturers.

TABLE 3

COLOR TELEVISION COMPARATIVE DATA

TOTAL CANADA LESS

	TOTAL CANADA			TOTAL CANADA LESS			MAJOR DEPARTMENT STORES			MAJOR DEPARTMENT STORES		
	Sales	Imports	Import Percentage	Sales	Imports	Import Percentage	Sales	Imports	Import Percentage	Sales as % of Total	Imports as % of Total	Import Percentage
1962	1,100			1,050			50	0		4.5	0.0	0.0
63	2,550	1,800	70.7	2,385			115	0		4.6	0.0	0.0
64	5,000	3,672	73.7	4,656	3,573	76.8	344	99		6.9	2.7	28.8
65	12,000	9,766	81.2	10,232	7,998	78.0	1,768	748		14.7	7.7	42.3
66	100,000	19,000	19.0	86,606	15,470	17.9	13,394	3,530		13.4	18.6	26.4
67	120,000	31,000	25.8	94,801	25,316	26.7	24,199	5,684		20.2	18.3	23.5
68	188,000	67,639	35.9	152,634	57,313	37.9	35,366	10,326		18.8	15.3	29.2
69	318,224	113,986	35.0	254,811	98,632	38.7	63,413	15,354		19.9	13.5	24.2
70	340,082	106,117	31.2	289,106	88,909	30.7	59,976	17,208		17.6	16.2	28.7
71	525,659	174,085	33.9	438,299	156,678	35.8	87,360	17,407		16.6	10.0	19.7
72	817,716	312,265	38.3	688,972	274,999	40.0	128,744	37,266		15.8	11.9	28.9
Source (1)		(2)					(3)	(3)				

CHART 5

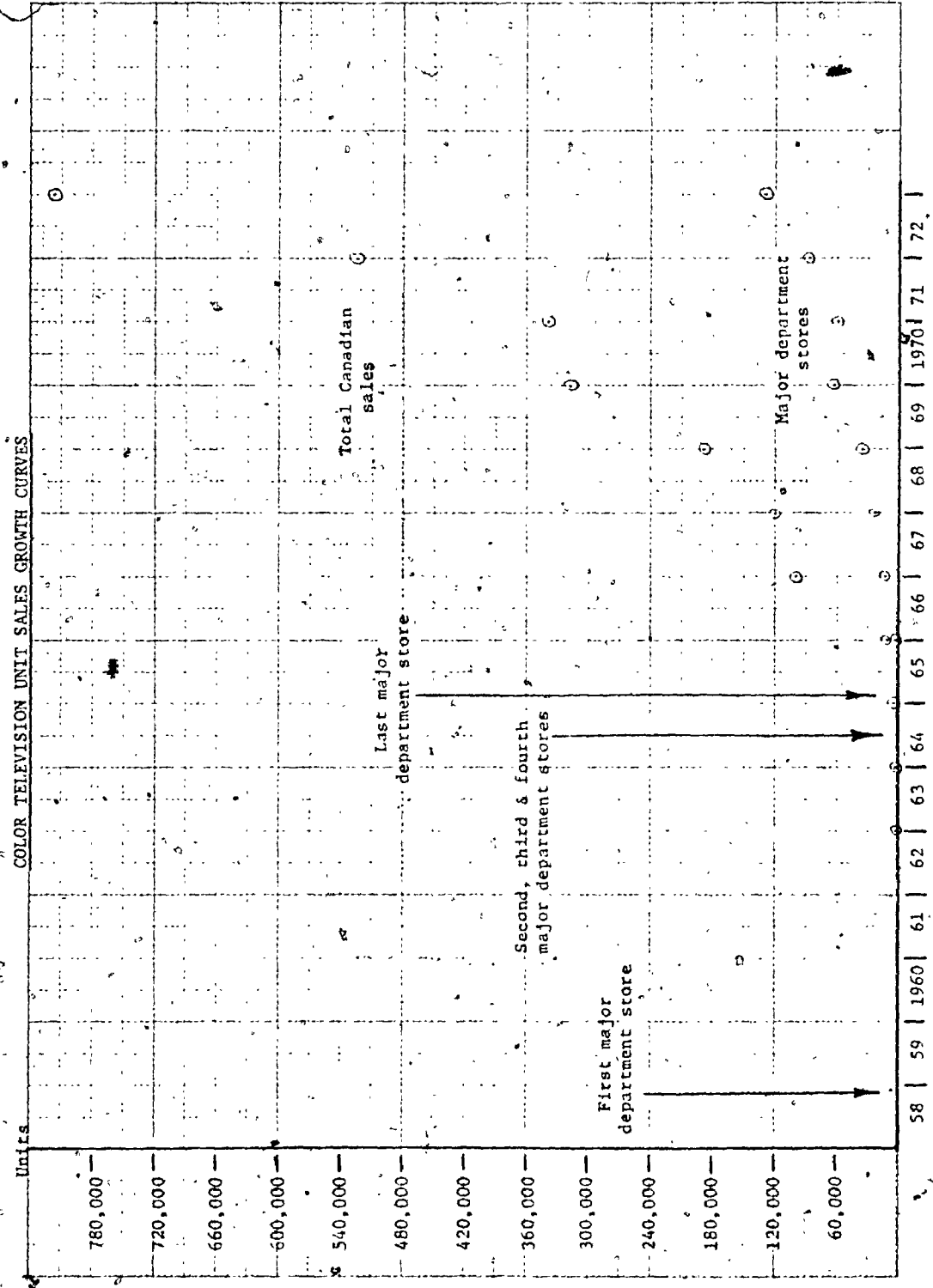
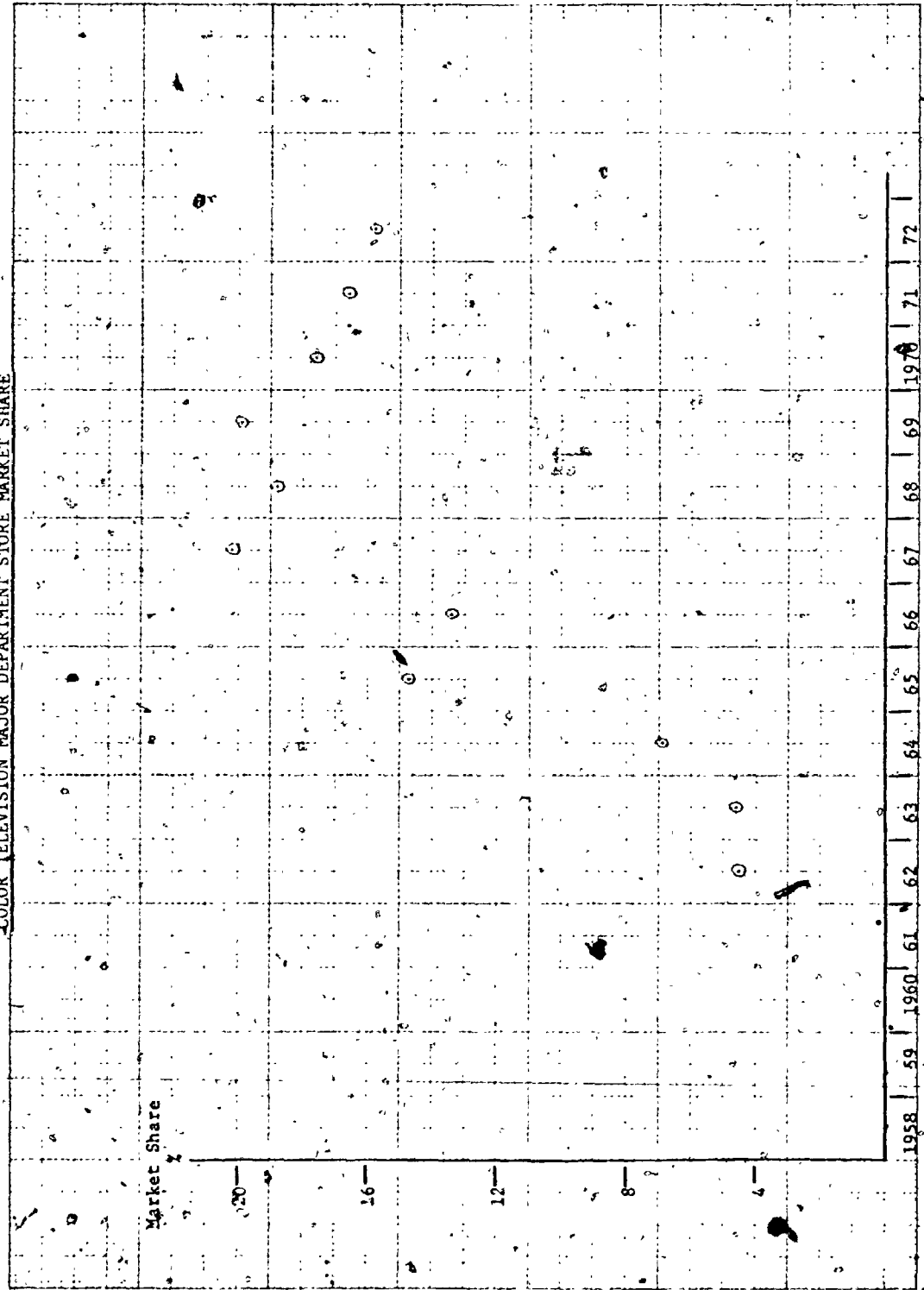


CHART 6
COLOR TELEVISION MAJOR DEPARTMENT STORE MARKET SHARE



SOURCES OF STATISTICAL INFORMATION

1. Derived from data provided by the Electronics Industry Association in the early years and from DBS 43-004 and DBS 65-007 in recent years.
2. Derived from confidential company records in the early years and from DBS 65-007 in recent years.
3. Accumulated from confidential records of the five individual major Canadian departmental chains.

CHAPTER IX

CASSETTE TAPE RECORDERS

The cassette type tape recording system is a relatively recent innovation and is unique among the products studied in that it represents a major modification of an existing similar product, the reel to reel type tape recording system. As such, it experienced competition from other new tape recording systems almost from its inception and the marketing strategy of the firm which launched the cassette system has undoubtedly been a major influence on its subsequent market development. The product is also of particular interest insofar as it was originally developed outside the U.S. market.

Cassette type tape recorders were developed by Philips, a large Dutch based multi-national electronics firm in the early 1960's. They had their world commercial premiere at the Berlin Radio Show of 1963. At the time the cassette system was introduced, the tape recording field was changing rapidly and a number of promising innovations were appearing concurrently. In particular, two types of cartridge tape playing systems made their appearance at about the same time, namely the so-called four track and eight track cartridge systems. While both these latter systems boasted superior frequency response characteristics to the cassette system they suffered the disadvantage that they could neither be used to record nor could they be rewound--functions which were readily performed by the cassette system.

In view of the considerable market uncertainty surrounding the introduction of the cassette system, Philips recognized that it was in

their interests to promote acceptance of the cassette system regardless of who might be manufacturing cassette recorders in order to insure a large market in total. Rather than closely protecting their patent rights on the cassette system, thereby assuring themselves of a large share of a small market, Philips elected to make the invention and design available free of charge to other manufacturers in order to boost the cassette systems chances of gaining a major portion of the uncertain tape recording market. While the company forfeited any licensing revenues under such an agreement, they did, nevertheless, assure themselves of close control over manufacturing quality which has prevented the entry of low quality versions into the market. The net effect of this marketing strategy has been the rapid appearance on the market of low cost Japanese produced units of quality comparable to that of the units produced by Philips themselves. As early as 1969 more than 90% of the cassette tape recorders sold in Canada were of Japanese origin.

The first cassette tape recorders were introduced to the Canadian market by the Philips subsidiary in the Fall of 1964. These first units reached the retailers through those Canadian distributors who handled the Philips line. In the following year, the first shipments of Japanese made cassette recorders arrived in Canada and since that time Japanese imports have climbed sharply. Imports of cassette tape recorders rose from 4,547 units in 1964, the year in which cassettes were introduced, to over 754,860 units in 1972 of which some 84% came from Japan. (See Table 4). Sales may be considered to closely reflect imports since as of 1972 no cassette recorders have been produced in Canada.

The involvement of the major Canadian department stores with cassette tape recorders has exhibited many of the characteristics of their involvement with color television. In both cases major departmental chains have demonstrated considerable initiative in sourcing the units they sell directly through Japanese manufacturers rather than going through distributors based in Canada.

Two major departmental chains report having offered cassette tape recorders for sale in 1964, the first year in which they were available in Canada although sales in that year were reportedly nominal. The first units obtained by these firms were of Dutch origin and came through a Canadian distributor. However, in 1968 one company began to source a large proportion of their requirements directly with Japanese manufacturers thereby bypassing Canadian based distributors. The second firm also adopted the strategy of importing directly from foreign producers in 1969. A third departmental chain began to offer cassette recorders for sale in 1966 with their original units coming from Japan via a Canadian importer. The fourth major department store chain adopted the product in 1967. Their first units were obtained through the Canadian subsidiary of Philips but in the following year they too began to secure the majority of their requirements directly from Japanese manufacturers. The last major departmental chain to offer cassette recorders for sale did so early in 1968. While the first units they obtained came from Japan via a Canadian importer, this firm switched almost immediately to sourcing the vast majority of their requirements directly with Japanese manufacturers.

Until 1968 sales of cassette tape recorders through the five major department stores grew only slightly but since then growth has

been phenomenal climbing sharply to over 100,000 units in 1969 in comparison to fewer than 4,000 in 1967. (See Table 4). It is important to note that the unit sales figure for the major departmental chains during the year 1969 were heavily weighted by the extraordinary reported unit sales performance of a single firm. This firm's unit sales, which were already relatively high in 1968, reportedly increased by a factor of five between 1968 and 1969 and then slipped by 75% of the 1969 figure in the following year. Consequently, the department store data for the year 1969 must be considered to be exceptional. When compared to total Canadian sales of cassette type tape recorders the proportion of unit sales accounted for by the major departmental chains rose from a low of 2.2% in 1965 to 25% in 1969. This increase in share has been particularly noteworthy since 1967 when the total cassette market had just entered its period of rapid growth. As of 1972 the proportion of total sales accounted for by major department stores had dropped below that of the preceding year although the rapid rate of growth in the total Canadian market for cassette recorders showed no signs of slowing. The drop during 1972 in share of the total market for cassette recorders accounted for by the major departmental chains is consistent with hypothesis III (b).

The hypothesis regarding the relative import involvement of major department stores could not be tested as of 1972 since all units sold in Canada continued to be imported. Nevertheless, there is one important feature of the import involvement of major departmental chains which does bear comment. As pointed out earlier, virtually all the major department stores obtained the first cassette tape sets they sold from Canadian based distributors or agents who in turn had imported from

abroad. However, in at least four of the five cases for which data were available, it was noted that the firms very quickly bypassed these Canadian distributors and imported themselves direct from foreign manufacturers. In 1968, 51.2% of reported department store imports of cassette recorders came direct from the foreign manufacturer and in 1972 the proportion climbed to 86% which represented nearly 10% of all Canadian imports of cassette tape recorder units.

This aggressive import activity on the part of major departmental chains had already occurred in the case of portable color television sets and was not without explanation. By importing direct from foreign producers, the major department store chains found that they were able to offer cassette recorders to consumers at more attractive prices than had been the case when they bought from Canadian distributors. Consequently they realized a competitive advantage over other types of distributive institutions handling the product.

The reason why major department stores were able to command a lower price was related to the fact that their distribution costs when buying direct were lower than those incurred by other firms such as distributors and subsidiaries of foreign manufacturers who were bringing in units for resale. The major departmental chains were able to buy cassette recorders in substantial quantities and to distribute them among their various outlets. Canadian based subsidiaries and distributors, on the other hand, which also bought large quantities were then faced with selling them in addition to all the physical handling costs associated with the product. Selling could involve a sales force and perhaps even brand advertising, the value of which was uncertain since brand loyalty appeared to be declining in the cassette market in

recent years. What is perhaps surprising about this aggressive import activity on the part of major departmental chains is that it came at such an early period in the life of cassette recorders in the Canadian market. The effect of price on demand does not normally take on such an important aspect until a product has gained a broad market acceptance. It is important in all this to recognize that while major department stores have in recent years become actively involved in sourcing cassette recorders directly with foreign producers, they were, nevertheless, not first to do so. It was only after Canadian distributors had accepted the risks of dealing initially with foreign producers and after the product began to demonstrate its solid potential that major departmental chains moved to direct importing.

The results of the sample survey offer clarification of the participation of major department stores in the Canadian market for cassette tape recorders. This participation in some ways parallels that of the twin-tub washer where one of the major departmental chains appeared to offer the product for sale relatively late in comparison to the others of its type. Nevertheless, the case of the cassette recorder once again offers support to the "Diffusion Model".

More of the firms surveyed reported having stocked cassette recorders in the past or having the intention of adding them in the future to their product assortment than was the case for any of the other products surveyed, - 76 in total. The distribution of times of first offering for sale of the 58 firms who reported specific adoption dates, were as follows:

- (1) Two firms, both independent retailers specializing in T.V., radio and Hi-fi products reported offering cassette recorders for sale before the time specified

by the first major department store chains. However, both these first also indicated that they believed other firms to have offered the product for sale in Canada before they did. One even indicated that he believed that department stores had done so before his firm.

- (2) Thirty-four firms reported having first offered cassette recorders for sale after the time at which the last of the major department store chains had adopted them. (i.e., after early 1968).
- (3) Twenty-six firms indicated that they first offered cassette tape recorders for sale between the beginning of 1965 and the end of 1967 and of these ten were during the year 1967 by which time all but the last major departmental chains were offering cassette recorders for sale.
- (4) Of the remaining fourteen firms which were unable to indicate the specific time at which they first offered cassette recorders for sale, nine reported that they did so only after the major department stores carried them or after the product had demonstrated its potential in the Canadian market.

Thus, in the case of the cassette tape recorder, we find that more than half of the firms surveyed did not adopt the product before it had been available to consumers through all the major department store chains. What is perhaps unique about this case is that two major department store firms were apparently among the first retail institutions in Canada to offer cassette recorders for sale while the others did not follow suit for nearly two years. Nevertheless, the pattern of adoption exhibited by the cassette tape recorder appears to add further support to the central propositions of the "Diffusion Model". Major departmental chains have all adopted the product in advance of the majority of retailers surveyed and the period of most rapid growth in total Canadian sales began just as the last major departmental chains were first offering cassette recorders for sale. Furthermore, as the

model would predict, the share of the total market accounted for by major departmental chains has risen sharply during the early period of the rapid growth phase. As of 1972, the major department store share had actually declined in spite of the fact that the growth rate in the total Canadian market showed no signs of slowing down. (See Table 4 and Chart 7).

TABLE 4

CASSETTE TAPE RECORDERS COMPARATIVE DATA

	TOTAL CANADA		TOTAL CANADA LESS		MAJOR DEPARTMENT STORE CHAINS		
	Estimated Sales & Imports	Sales & Imports	Sales & Imports	Direct Imports	Sales & Imports as % of Total	% of Imports Which were direct	
1963							
64	4,547	4,267	280		6.2		
65	44,926	43,926	1,000		2.2		
66	84,861	82,881	1,980		2.3		
67	156,920	153,220	3,700		2.4		
68	299,296	274,783	24,513	12,685	8.2	51.2	
69	425,425	319,074	106,351	70,740	25.0	66.4	
1970	527,959	475,148	52,811	39,176	10.0	74.3	
71	574,002	500,677	73,325	63,500	12.8	86.6	
72	754,860	671,488	83,372	71,920	11.0	86.0	
Source	(1)	(2)	(2)	(2)			

CHART 7
CASSETTE TAPE RECORDERS UNIT SALES GROWTH CURVES

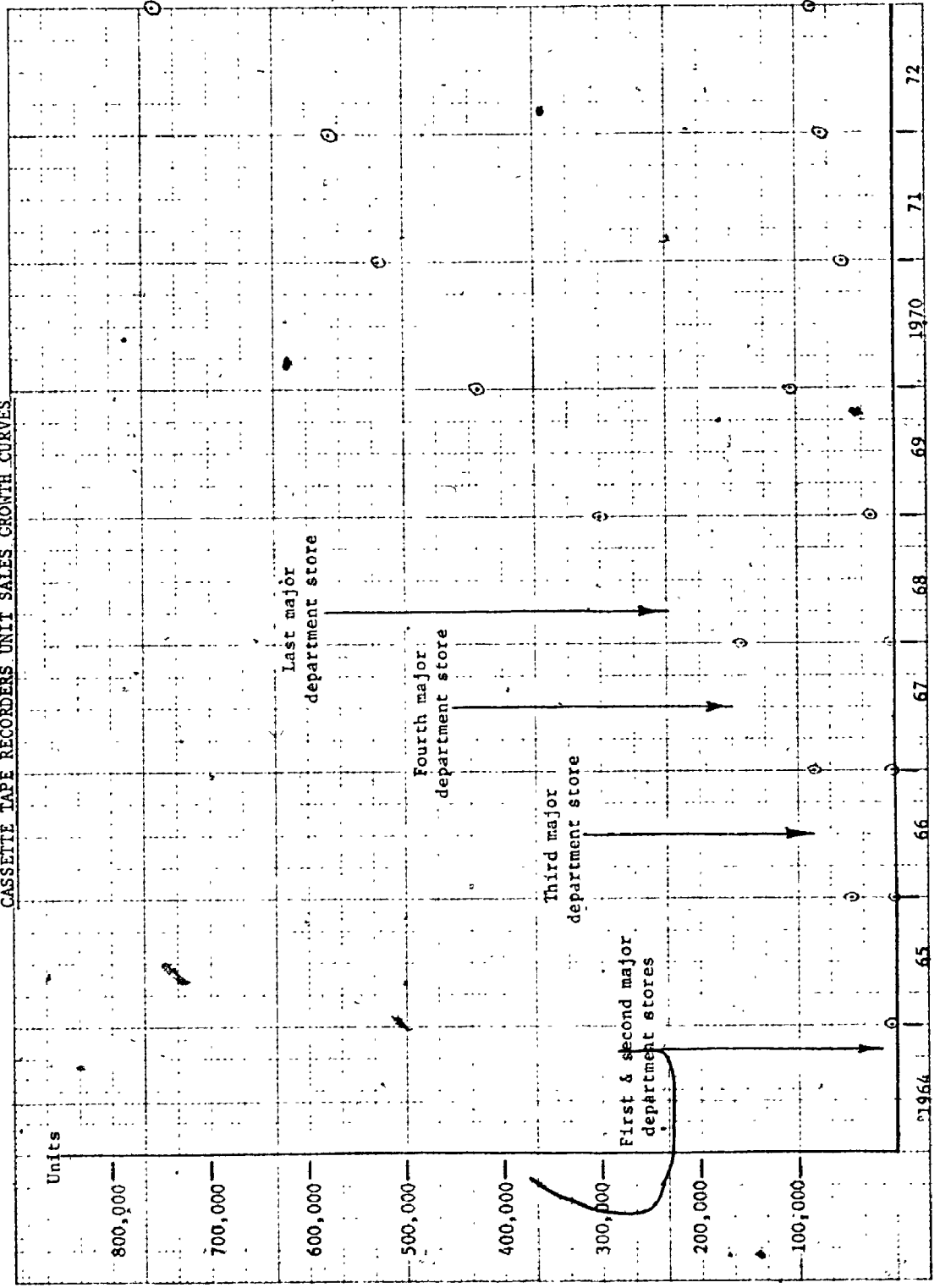
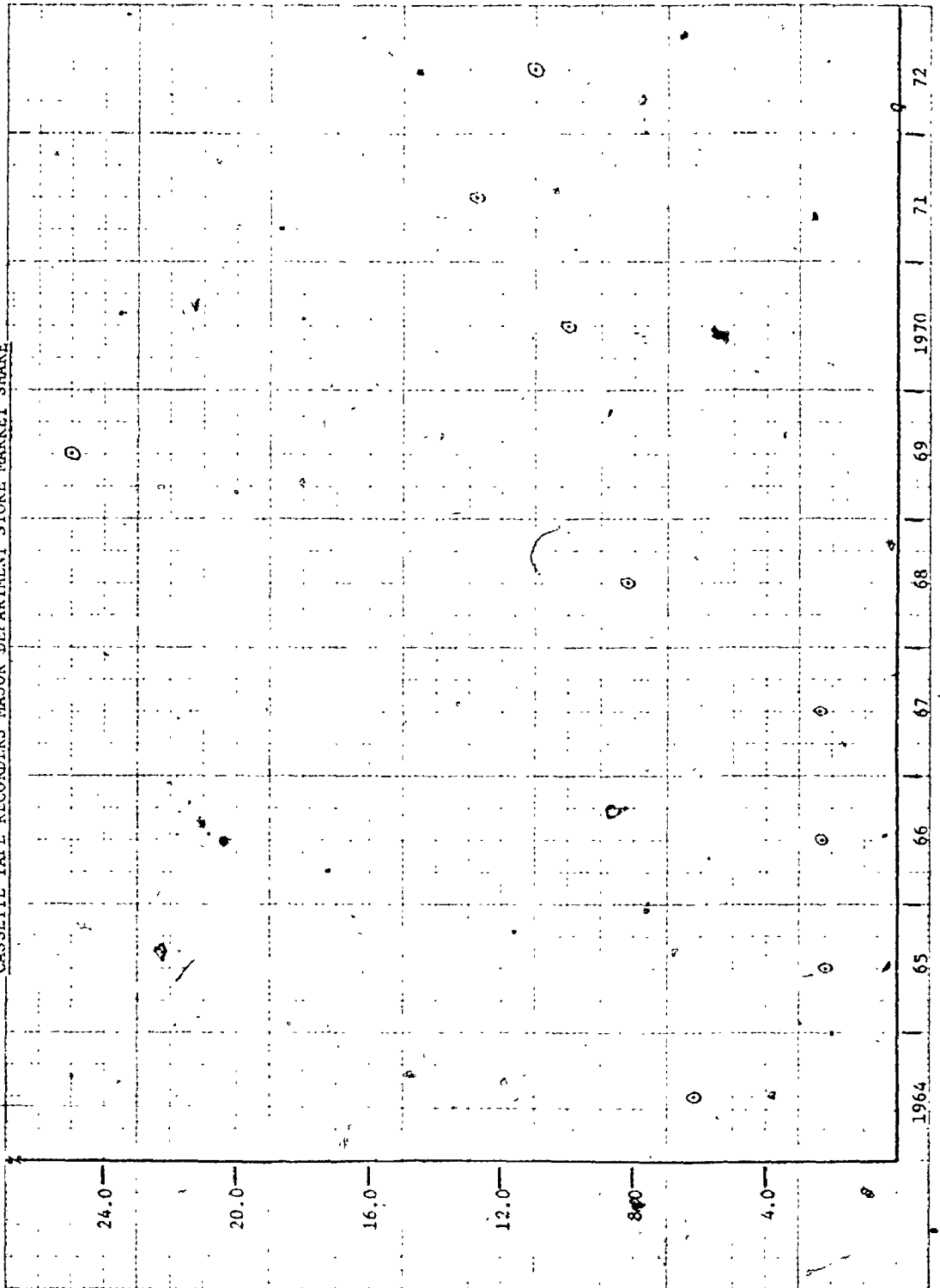


CHART 8

CASSETTE TAPE RECORDERS MAJOR DEPARTMENT STORE MARKET SHARE



SOURCES OF STATISTICAL INFORMATION

1. Derived from DBS 65-007, Special study #26-71, Import Analysis Division of the Department of Industry, Trade and Commerce, and Japan: Exports and Imports, Japan Tariff Association.
2. Accumulated from confidential records of the five individual major Canadian departmental chains.

CHAPTER X

CONSOLE STEREOPHONIC RECORD PLAYERS

Of the products chosen for examination in this study, stereophonic record players in console form may be one of the more advanced in terms of its position in the product life cycle. One fact is clear with respect to the stereophonic market in Canada and that is that since the end of the 1960's it has been changing rapidly. Sales of console units have dropped off appreciably since 1969 while the growth in modular and custom component stereophonic systems has been considerable. The existence of a definite trend away from consoles and towards components appears to be confirmed. It is to be noted that from a technical point of view, this transition is not proving to be an easy one, particularly for Canadian based producers. The explanation is simple. The chassis in a typical console stereophonic system is cubic while component systems employ a flat chassis. As of the end of 1970 no Canadian producer was producing the flat component type chassis and the investment involved in switching over is considerable. Consequently, very few component systems are being produced in Canada. Those Canadian based manufacturers who are producing component systems are importing the component parts and assembling them in cabinets. One senior executive of the Canadian subsidiary of a large multi-national electronics firm has predicted that Canadian based producers of console stereophonic sets will increasingly import the electronic components and assemble these into cabinets while phasing out production of the older cubic stereophonic chassis. The net result of the recent growth

in the market for stereophonic components has been that console units have passed relatively quickly from a state of rapid growth to one of decline.

Stereophonic record players were first commercialized in the U.S. in 1956. During the same year stereophonic systems were introduced to Canada and in 1957 the Canadian subsidiary of a large U.S. electronics firm offered the first packaged stereo units for sale by importing a small number of console units to be sold through its distributors. Imports, however, were almost immediately supplemented by domestically produced units as Canadian based manufacturers quickly moved into the manufacture of console stereophonic sets during 1958.

Data on sales and imports of console stereophonic sets is somewhat complicated by the fact that such units are lumped in with all combinations which contain a radio including cassette player-radio combinations and other similar types which are not console units. This complication is particularly troublesome in the case of imports where the majority of units are non-console combinations. Fortunately, the difficulty has a simple resolution when it is recognized that virtually all imports of console stereophonic units into Canada come either from the U.S. or from West Germany. Since very few non-console combinations are manufactured in Canada, the data on sales of domestic produced combinations closely represents sales of console stereophonic record players.

Sales information on stereophonic console systems is sketchy during the early years because of the fact that stereophonic and monaural units were lumped together in the statistics. However, industry officials were quick to point out that in the field of console

units, monaural systems were being phased out as early as 1959 and by the end of 1962 they had virtually disappeared. Between 1957 and 1969 total Canadian unit sales appear to have climbed at a relatively steady rate from an estimated 4,315 units to 170,904. As indicated earlier the picture for 1970 represented a reversal with sales dropping nearly 13% although they did come back strongly in 1971 and 1972. (See Table 5). Imports of console stereophonic sets have not followed a definite pattern but have tended to fluctuate from one year to the next. However, the sharp increase in console stereo sales during 1971 and 1972 is largely accounted for by increased imports from the United States of units packaged in new types of consoles.

In examining the market in Canada for console model stereophonic record players, it is essential to note that improvements have been taking place continually in the stereophonic equipment which is incorporated into the console models and the typical unit offered for sale in 1970 represented a substantially higher quality product than the first units offered for sale in Canada.

Because of the length of time console model stereophonic record players have been on the market, some of the major departmental chains have encountered difficulty in assembling complete data on unit sales and imports. Consequently, the reported major department stores experience with console stereo is based on the experience of the four largest of the five major department store chains with the data from one of these being incomplete prior to 1967. This latter firm actually reported offering console stereo units for sale during 1956, the year in which they were introduced to the Canadian market. However, the unit volume sold by the firm prior to 1967 was reportedly small in relation

to other departmental chains and continued to account for less than 10% of the department store total in all those years for which the firm had unit volume records. The first units handled by this firm were obtained from the Canadian subsidiary of a large American electronics firm. While the first units were imported from the American parent, since 1968 all the units sold by this department store chain were Canadian made. All three remaining firms report having first offered console stereo sets for sale during the following year, 1958, although one did so in the Spring season while the other two followed later in the year. The firm which adopted earlier in the year imported all the units it sold in 1958 directly from a manufacturer in the U.S. However, in subsequent years virtually all their console stereo requirements were met by Canadian manufacturers. Both of the major departmental chains which first offered the product for sale later in 1958 reported sourcing the original units they sold through Canadian based producers although one has subsequently engaged in the sale of imported units in recent years.

Reported unit sales of console stereo units through these four major departmental chains grew at a gradual rate until the middle part of the 1960's when sales increased sharply during a period of a few years. (The leap in unit sales reported in 1963 is a result of the fact that prior to that year one of the firms did not have records of unit sales although they were known to have been significant). The data in Table 5 indicate that the share of the total Canadian console stereo market accounted for by four of the five major department store chains has declined in every year except 1971 from a peak during 1968.

The case of console model stereophonic record players appears

to confirm some others of the hypotheses associated with the diffusion model. First, it has been noted that at least one departmental chain offered console stereo units for sale before Canadian based producers had actually entered into domestic production of the product. This observation is particularly significant in this case where the technology required to produce stereophonic console units did not differ enormously from that required to produce monaural units which were already being produced in Canadian plants.

The case of console stereophonic record players offered powerful support to another proposition of the "Diffusion Model", namely, that which would predict that the department store share of the total Canadian market would rise early in the rapid growth phase of the products life cycle but would subsequently decline as other retail outlets adopted the product. In the case of console stereos, the major department store share climbed to a peak in 1968 - 1969 and then declined as growth in the total Canadian market was checked as a result of the growing acceptance of component stereophonic systems. Growth in the total market itself, unlike the situation for most of the other products studied, did not exhibit any one period in which unit sales suddenly began to climb steeply. Thus it was difficult to assess whether the rapid growth in major department store share occurred early or late in the growth phase for the total Canadian market.

The results of the sample survey serve to clarify the participation and timing of involvement of the major department stores in the Canadian market for console model stereophonic record players. A total of 73 of the companies returning usable questionnaires reported that they currently stocked console stereo sets or that they intended to in

the future. Of these 73 firms, 55 were able to specify the time at which they first offered console stereos for sale. The distribution of these adoption times relative to the period during which the major department store chains reported first offering consoles for sale is as follows:

- (1) Fourteen firms, consisting primarily of specialty retailers but including three regional department store firms, reported offering console model stereo record players for sale before the time at which the first major departmental chain did so.
- (2) Thirty-eight firms reported having adopted console stereos only after the period during which all the major departmental chains had done so.
- (3) Three firms reported first offering console stereos for sale during 1958, the year in which the three largest major departmental chains also adopted the product.
- (4) Of the remaining eighteen firms which did not indicate the specific time at which they adopted console stereos, ten reported that they decided to adopt the product for sale only after the major department stores carried them or after the product had demonstrated its potential in the Canadian market.

In summary, the case of console stereos appears to conform to the pattern of institutional adoption hypothesized by the "Diffusion Model". Nearly two-thirds of the firms reporting in the sample survey indicated they adopted the product after it was available in all the major department store chains. One unexpected result of the survey was the relatively large number of firms reporting having adopted the product before any of the major department stores. Such a result is, however, consistent with the unusually early entry of Canadian based producers into the manufacture of console stereos. It was also noted that the share of total unit sales of console stereos accounted for by

the major department chains did increase steadily during the period in which growth in the total market was most rapid and subsequently began a slow decline.

TABLE 5

CONSOLE STEREOGRAPHIC RECORD PLAYERS
COMPARATIVE DATA

	TOTAL CANADA				TOTAL CANADA LESS MAJOR DEPARTMENT STORES				DEPARTMENT STORES			
	Sales	Imports	Import Percentage	Import	Sales	Imports	Import Percentage	Import	Sales as % of Total	Imports as % of Total	Imports	Import Percentage
1957	4,315	4,315	-100.0									
58	17,137	6,403	37.5	37.0	14,689	5,451	37.0	2,448	14.3	14.8	952	38.9
59	42,317	7,104	16.8	17.8	39,797	7,104	17.8	2,520	6.0			
1960	51,274	6,016	11.8	12.8	47,096	6,016	12.8	4,178	8.1			
61	91,728	7,845	8.6	9.2	86,368	7,845	9.2	5,360	5.9			
62	120,382	17,926	14.9	15.5	115,473	17,926	15.5	4,909	4.1			
63	120,951	11,271	9.3	11.0	102,877	11,271	11.0	18,074	15.0			
64	122,700	10,788	8.8	10.6	101,834	10,788	10.6	20,866	16.9			
65	147,776	7,889	5.3	6.7	124,597	7,889	6.7	23,179	15.7			
66	142,303	10,505	7.4	8.8	119,529	10,505	8.8	22,774	17.1			
67	153,552	9,540	6.2	7.4	123,114	9,040	7.4	30,438	19.8	5.2	500	1.6
68	167,283	11,714	7.0	8.0	133,508	10,714	8.0	33,775	20.2	8.6	1,000	3.0
69	170,904	11,997	7.0	7.8	134,512	10,497	7.8	36,392	20.1	12.5	1,500	4.1
1970	149,427	18,664	12.5	7.7	124,923	9,664	7.7	24,498	16.4	48.2	9,000	37.7
71	172,639	43,732	25.4	23.2	143,712	33,232	23.2	28,927	16.8	22.9	10,500	37.4
72	220,419	86,250	39.1	39.3	189,148	74,250	39.3	31,271	14.2	13.9	12,000	38.4

Source (1) (2) (3)

CHART 9

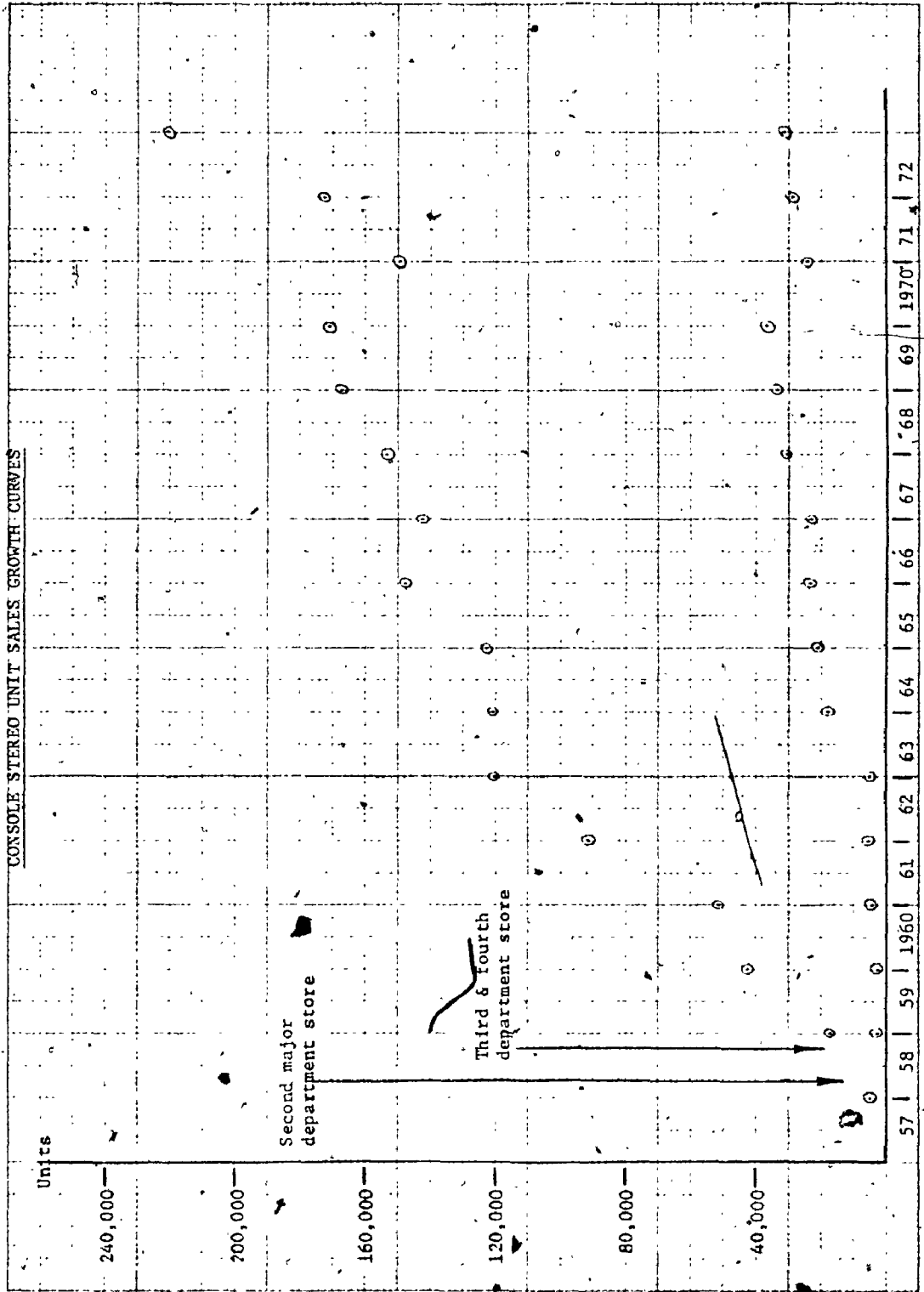
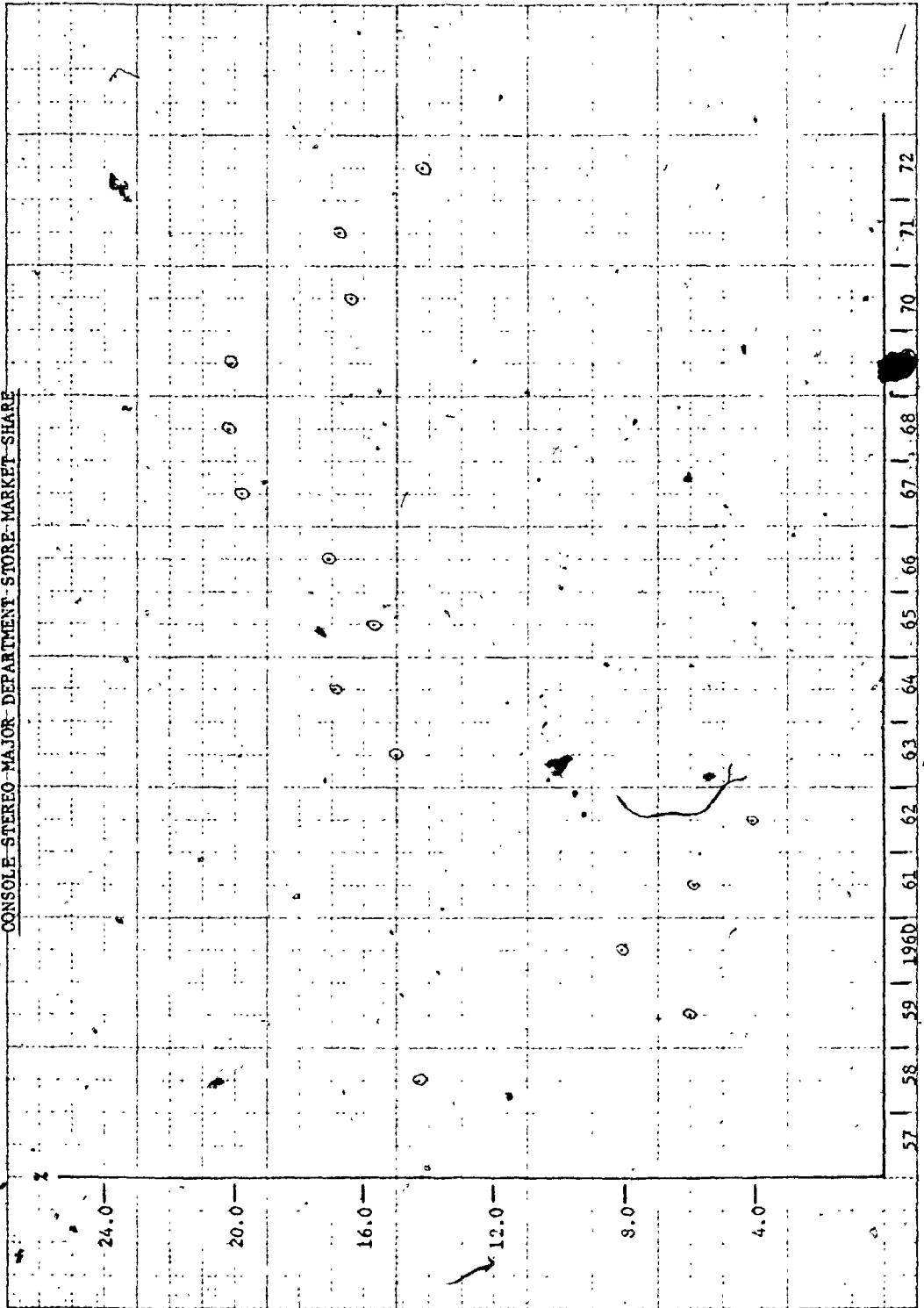


CHART 10
CONSOLE STEREO MAJOR DEPARTMENT STORE MARKET SHARE



SOURCES OF STATISTICAL INFORMATION

1. Derived from DBS 43-004, DBS 65-007, United States Exports FT 410, Bureau of the Census, and information provided by individual companies.
2. Derived from DBS 65-007, U.S. Exports FT 410, and information provided by individual companies.
3. Accumulated from confidential records of the five individual major Canadian departmental chains.

CHAPTER XI

SUPER 8 MOVIE CAMERAS

In some sense, the Super 8 movie camera could be described as the counterpart in the photographic field to the cassette tape recorder. Both products represent technological modifications of existing products and a major benefit of both has been that they offer significant advances in simplicity of operation. The Super 8 camera was developed around a new type of 8 mm movie film which was contained in an easy-to-use cartridge rather than being loaded on a reel as the existing regular 8 mm movie film system required. In effect, the real innovation was the cartridge type movie film itself but the necessity of developing a camera capable of accepting the new type of film was of no less importance.

The Super 8 movie system was developed by Kodak in the U.S. and first commercialized in that market during 1964. The system was then introduced to the Canadian market by Kodak's Canadian subsidiary in the Spring of 1965. The introduction was noteworthy in that it took the form of a blanket introduction to dealers and retail outlets. Such a rapid widespread adoption of an essentially new product by distributive institutions in Canada may be related to the fact that the new system had been widely publicised in advance of its introduction and many consumers were aware of the product before it was available in most retail outlets. There is one peculiarity of the Super 8 movie camera experience which bears special attention. When the product was introduced to the United States market it gained rapid acceptance among

American consumers and, furthermore, the innovating firm, Kodak, secured a major proportion of the total camera market. However, by the time the Super 8 system was introduced to the Canadian market a year later, a wide range of Japanese produced units were already available and as a result, Kodak never did gain a significant share of the total Canadian market for Super 8 cameras. The share of Canada's Super 8 camera market held by Kodak was known to have been highest during 1965 but even in that year was not appreciable. What is even more significant in all this is that acceptance of the Super 8 system itself by Canadian consumers was considerably less widespread than was the case in the United States market.

The strategy of Kodak with respect to the manufacture of Super 8 movie cameras closely paralleled that of Philips in the Cassette tape recorder market. In late Fall of 1964 the Canadian photographic industry had been advised by Kodak that the Super 8 system would be introduced to the Canadian market during the following Spring. In addition, the firm announced that they would not charge royalties on Super 8 hardware production in order to encourage other manufacturers to produce Super 8 equipment. Kodak realized they did not have the capacity to provide all the hardware requirements to satisfy the demand which would be generated by the introduction of the new system, nor did they have the capability to produce the range of camera types that would be required. The waiving of royalty fees virtually assured Kodak that a sufficient supply of the right types of Super 8 cameras would be available to consumers at the time of introduction of the new system. Kodak had a second reason for making the hardware technology freely available. About the same time that they were introducing the new

Super 8 system to America, the Japanese firm Fuji had developed and introduced the so called "Single 8" film system which also represented marked improvement over the existing Regular 8 or "Double 8" system. Herein lay an additional incentive for Kodak to encourage hardware manufacturers to produce equipment to support their Super 8 system rather than the competitive Single 8 system. It is important in all this to note that the primary interest of Kodak was to sell the Super 8 film cartridges themselves and without sufficient supporting hardware, a satisfactory level of sales could not be attained.

The first Super 8 cameras sold by Kodak in Canada were reportedly imported from the U.S. although the company did begin manufacturing cameras in their Canadian factory during 1965. Other Canadian producers were ready with Super 8 units imported from the United States and Japan at the time Kodak introduced the system but as early as 1966 sales of Japanese units accounted for more than 80% of the Canadian total.

Growth in total Canadian sales of Super 8 cameras has been both sluggish and erratic climbing from 15,900 units in 1965, to 63,100 units in 1972. While 1971 and 1972 sales did represent improvement, the product has not to date enjoyed widespread acceptance. One industry official attributed the limited success of the Super 8 system to the fact that many consumers had been "turned off" movie systems in general following bad experiences with poor quality Double 8 equipment prior to the introduction of the Super 8 system.

The experience of Canada's major departmental chains with Super 8 movie cameras lends additional support to the Diffusion Model. Three of the major department store chains actually reported have adopted Super 8 movie cameras in April of 1965 when the new system was

formally introduced to the Canadian market. The first units obtained by these firms were imported from the U.S. and Japan and were obtained from the Canadian subsidiaries of foreign manufacturers. Two of these three firms have continued to sell imported units exclusively to the present day. A fourth major departmental chain began to offer the Super 8 movie camera for sale in the Fall of 1965, obtaining its first units from the U.S. via an importer. This firm has imported all the Super 8 cameras it sells but, like the other departmental chains, has done so through an importer as opposed to sourcing directly to foreign manufacturers. The last major departmental chain to report offering Super 8 cameras for sale did so early in 1966. The first units handled by this firm came directly from a Canadian producer although since that time both imported and domestically produced units have been sold through the company's outlets. All imported units have been obtained through importers.

It is noteworthy that none of the major departmental chains have elected to import cameras directly from foreign manufacturers. One of the reasons given for this phenomenon by a senior executive of one of the companies was that servicing of Super 8 cameras presented a number of problems with which department stores did not wish to become involved. By sourcing through importers the servicing problems could be handed over to these people.

It is a widely quoted opinion that sales of Super 8 movie cameras in Canada have to date fallen short of the manufacturers' expectations for the product since its introduction. The experience of the major departmental chains would bear this out. Since 1965, the year during which the Super 8 system was introduced, unit sales have only

climbed from 1,693 units in 1965 to 13,421 in 1972. It would appear that the Super 8 system has yet to enter its period of rapid growth - if, in fact, it is destined to do so. The pattern of growth in Canadian market acceptance of Super 8 movie cameras has been further distorted by the fact that considerable evolution has occurred in the nature of the product since its initial introduction in 1965. In particular, the developments in recent years of cameras requiring no auxiliary light source for indoor use and of cameras with synchronized sound recording units have undoubtedly expanded the appeal of earlier units without these features. The proportion of major department store sales of Super 8 cameras represented by imports has remained very high (over 98%), in every year and shows no sign of dropping.

Only thirty of the firms returning usable questionnaires reported that they had stocked Super 8 cameras, that they currently did so or that they intended to in the future. However, the small number is not to be interpreted as an under-representation of firms carrying the product since most Super 8 cameras are sold through relatively few types of retail outlets of which photographic supply stores are by far the most important. Unfortunately, these photo supply stores handle very few of the other products examined in the survey and the surveying of a larger number of such firms was neither warranted nor could it be justified. Of the thirty firms reporting, twenty-two indicated the specific time at which they first offered Super 8 movie cameras for sale. The distribution of these times in relation to the period during which the major departmental chains first offered the product is as follows:

- (1). Although three major departmental chains reported offering Super 8 cameras for sale from the time the new system was formally introduced to the Canadian

market in April of 1965, five other firms reported handling Super 8 movie cameras during 1964 in anticipation of the Canadian introduction.

- (2) Eight firms reported offering Super 8 cameras for sale during the brief period which spanned the adoption by all major departmental chains. (i.e. April, 1965 to the end of the first quarter 1966)
- (3) Nine firms indicated that they first offered the product for sale after it had been available in all the major departmental chains.
- (4) The eight remaining firms did not indicate a time at which they first offered the product for sale. However, only two of the eight reported that they believed they were among the first firms in Canada to offer Super 8 cameras for sale.

Thus, in spite of what might be described as unusual circumstances surrounding the introduction of the Super 8 system to Canada, the sample survey confirmed that major Canadian departmental store chains while not first, nevertheless offered Super 8 movie cameras for sale before the majority of other Canadian retailers handling the product. As a result of the blanket introduction of the system to the Canadian market, with all its preceding and accompanying publicity, the survey also confirmed that three major Canadian departmental chains were among the first firms in Canada to adopt the product.

The data pertaining to the case of Super 8 movie cameras offers strong support to the propositions of the "Diffusion Model" concerning the relative import involvement of major department store chains and the chronology of adoption by these firms in relation to other distributive institutions in Canada.

TABLE 6

SUPER 8 MOVIE CAMERAS COMPARATIVE DATA

	TOTAL CANADA				TOTAL CANADA LESS MAJOR DEPARTMENT STORES				MAJOR DEPARTMENT STORES				
	Sales	Imports	Import Percentage	Import Percentage	Sales	Imports	Import Percentage	Import Percentage	Sales	Imports	Sales as % of Total	Imports as % of Total	Import Percentage
1965	15,900	14,945	93.9	93.4	14,207	13,282	93.4	93.4	1,693	1,663	10.6	12.5	98.2
66	58,500	56,867	97.2	96.9	51,559	49,971	96.9	96.9	6,941	6,896	11.9	13.8	99.3
67	60,500	57,413	94.9	94.3	51,186	48,133	94.3	94.3	9,314	9,280	15.4	19.3	99.5
68	48,000	45,560	94.9	93.8	38,420	36,025	93.8	93.8	9,580	9,535	19.9	26.4	99.6
69	52,500	49,655	94.6	93.4	42,408	39,623	93.4	93.4	10,092	10,032	19.2	25.3	99.4
1970	38,800	37,784	97.3	96.7	29,432	28,489	96.7	96.7	9,368	9,295	24.1	32.6	99.4
71	55,700	54,961	98.1	98.3	43,234	42,522	98.3	98.3	12,466	12,439	22.4	29.2	99.8
72	63,100	62,309	98.9	98.4	49,679	48,888	98.4	98.4	13,421	13,421	21.3	27.4	100.0

Source (1) (2) (3)

CHART 11

SUPER 8 MOVIE CAMERAS UNIT SALES GROWTH CURVES

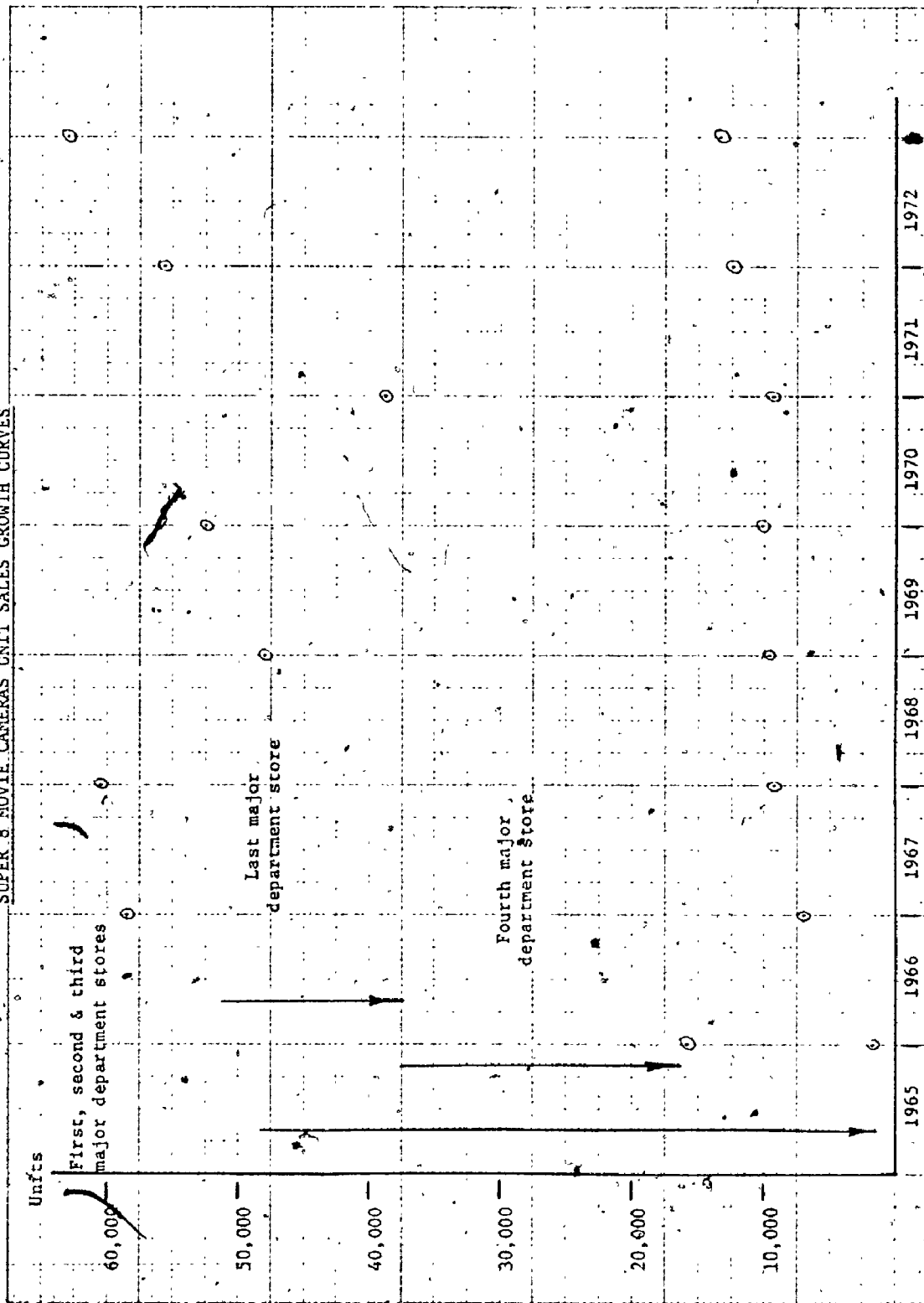
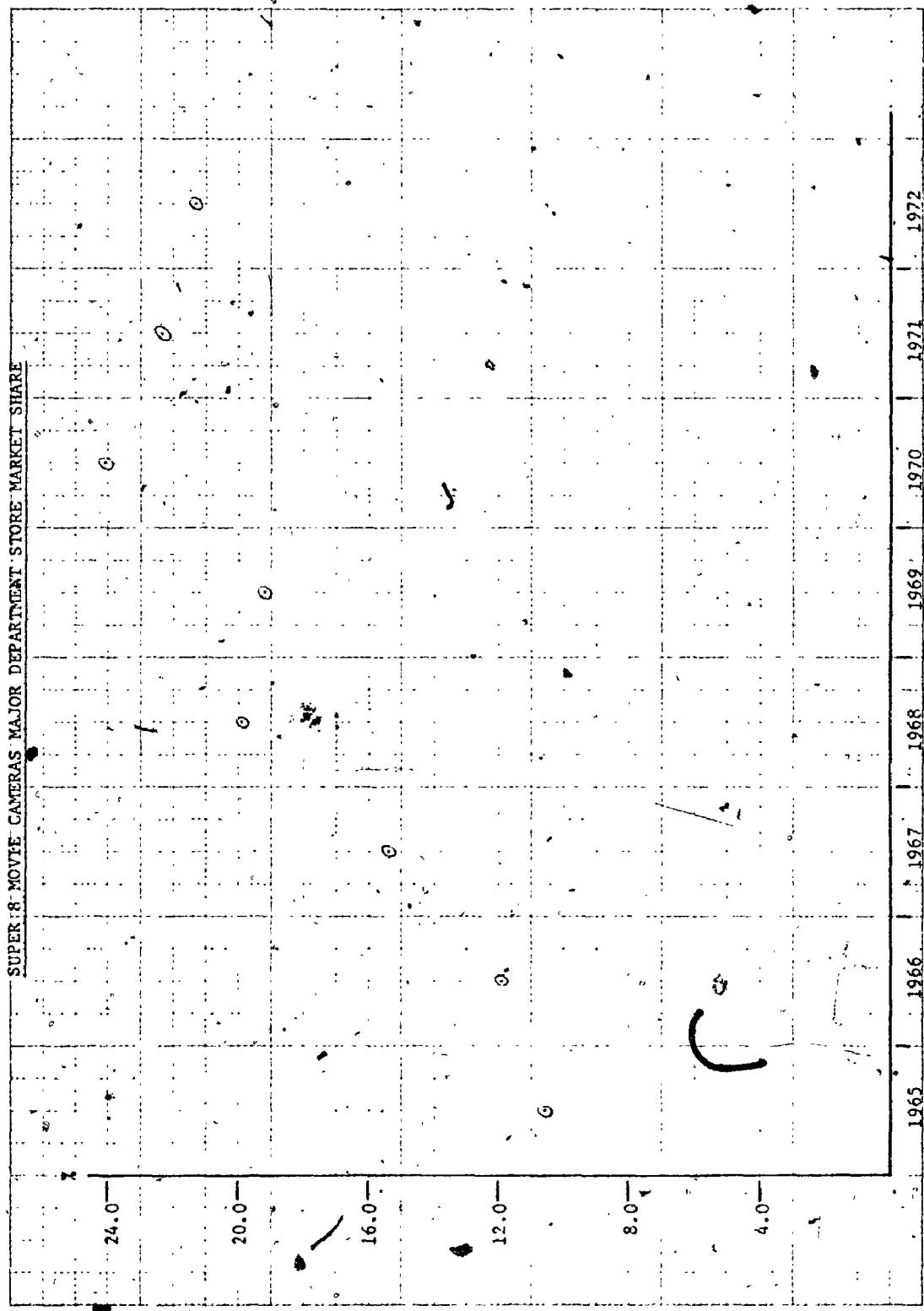


CHART 12

SUPER-8 MOVIE CAMERAS MAJOR DEPARTMENT STORE MARKET SHARE



SOURCES OF STATISTICAL INFORMATION

1. Derived from confidential data provided by private companies, DBS 65-007, Japan: Exports and Imports, Japan Tariff Association and U.S. Exports FT 410, Bureau of Census.
2. Derived from DBS 65-007, Japan: Exports and Imports, Japan Tariff Association and U.S. Exports FT 410, Bureau of Census.
3. Accumulated from confidential records of the five individual major Canadian departmental chains.

CHAPTER XII

HARD SHELL DOMESTIC HAIR DRYERS

The case of domestic hard shell hair dryers is an interesting one for examination with respect to the diffusion model as its unit price to consumers is significantly lower than that of any other product under study. The low unit value has also led to considerably greater difficulty in obtaining national data on the product as little is available from published sources. A most striking feature of the development of the Canadian market for domestic hard shell hair dryers was the rapidity with which the product was accepted by consumers. As shown in Table 7, unit sales during 1963, the year in which the product was introduced to the market, were substantial and subsequent annual unit sales increments have been small relative to the 1963 total. Such performance may be partially explained by the fact that while the hard shell hair dryer specifically was a new product, other types of portable domestic hair dryers had been available to Canadian consumers since the 1950's. Thus, acceptance of the visibly superior features of the hard shell type dryer was simple and occurred almost instantaneously.

The first hard shell type domestic hair dryers were developed by Schick in the United States and introduced to that market during 1962. In mid-summer of the following year the product was introduced to the Canadian market by the same company. This firm enjoyed a virtual monopoly in the Canadian market until 1965 and built up a large market before two other subsidiaries of large American consumer products firms offered units for sale in Canada. All the hard shell hair dryers sold

in Canada before 1966 were imported from the United States although some of the units were shipped to Canada in knocked-down kits and were assembled in Canada. The first integrated production of hard shell units in Canada was undertaken again by Schick during 1966 with other producers establishing Canadian production facilities within a year. Distribution of hard shell hair dryers during the earlier years was handled both through wholesalers and directly to dealers although recently, direct distribution has become increasingly important.

An important feature of the market for hard shell hair dryers in Canada is the continuous evolution which has occurred in product design since the products introduction in 1963. Among the more important changes have been the addition of a moveable control in 1965 and of a steaming feature to some dryer units in the Fall of 1966. Today hard shell hair dryers may be purchased with a variety of features and although the basic function performed by the product remains unchanged, the average unit sold in 1978 is readily distinguishable from the first units sold in Canada.

Total annual Canadian sales of hard shell hair dryers have climbed slowly from 121,000 units in 1963 to 250,000 units in 1972. Growth, however, has occurred at a steady rate since the year 1963, the year of its introduction, when the product enjoyed rapid acceptance. (See Table 7). Imports which accounted for 100% of the units sold in Canada prior to 1966 declined in importance to less than 5% of the Canadian total during 1969 but have increased again in recent years. (See Table 7).

The pattern of institutional adoption of the hard shell hair dryer in Canada may be compared to that of the Super 8 cameras since

both products were formally introduced to the Canadian market in conjunction with an extensive promotion program by subsidiaries of foreign manufacturers. Schick introduced the first hard shell hair dryer to their Canadian accounts simultaneously in mid 1963 and thus no single type of institution may be isolated as having adopted the product before others. As for the Super 8 situation, the initiative for introduction of the hard shell hair dryer was assumed by the Canadian subsidiary of a foreign manufacturer.

Because the major departmental chains were all accounts of Schick, they all reported offering hard shell hair dryers for sale as early as the Fall of 1963. However, it is significant that the form of adoption by these firms differed considerably. While some of the major departmental chains introduced the standard Schick branded hard shell unit at least one firm reportedly contracted with Schick from the beginning for exclusive designs bearing the department stores own private label.

Unit sales of hard shell hair dryers reported by the four largest of the five major departmental chains exhibit a pattern unique among the products studied. The share of the total Canadian market accounted for by these firms was higher during the introductory year than in any subsequent year to date declining steadily from 48.3% in 1963 to a low of 16.6% in 1968. (See Table 7). Furthermore, the actual unit volume reported by these firms dropped from over 58,000 units in 1963 to fewer than 30,000 units in 1968 while the total Canadian unit volume was steadily climbing. Both share of the total market and unit volumes of the major departmental chains have risen in recent years, likely reflecting involvement with new models of hard shell hair dryers

with improved features.

While the case of hard shell hair dryers is not as clear as that of other products studied because of the rapid acceptance of the product, it does appear to offer support to the unit sales pattern hypothesized in the "Diffusion Model". The most rapid period of growth in total Canadian unit sales of the product occurred during the last quarter of the year in which the product was introduced and all four of the major department stores reporting had offered hard shell hair dryers for sale soon after the product was available. Furthermore, as total Canadian unit sales of hard shell hair dryers continued to climb after 1963 the share of total market accounted for by the major department stores declined significantly up to 1968. Unit sales performance of hard shell hair dryers has undoubtedly been affected, particularly in recent years, by the proliferation of product features added to the basic unit and in some sense it is surprising that the product's unit sales performance adheres as closely as it does to the pattern hypothesized in the "Diffusion Model".

The departmental chains involvement in importing of hard shell hair dryers lends powerful support to the pattern hypothesized in the "Diffusion Model". Since integrated production of hard shell units began in 1966 the proportion of department store sales accounted for by imports has substantially exceeded the comparable proportion of all other retail institutions in every year. (See Table 7). In fact, the units imported by the four departmental chains reporting have represented more than 40% of the total of Canadian imports in every year and climbed to nearly 70% in 1972. Most of the imported units sold through department stores have been handled by two firms with one

in particular accounting for the majority. This firm has in recent years satisfied a major proportion of its requirements through the importing of "knocked-down" units which are assembled in Canada. The percentage of unit sales represented by imports through all other retail institutions in Canada excluding the four largest departmental chains has not followed any identifiable trend but has followed closely the fluctuations in proportion for the four departmental chains.

The results of the sample survey in the case of hard shell type hair dryers offer strong support to the pattern of adoption hypothesized by the diffusion model.

Fifty-three of the firms reporting in the sample survey indicated that they had offered hard shell type hair dryers for sale at some time although some no longer did so. Of the fifty-three firms, thirty-four indicated the specific time at which they first offered the product for sale. The distribution of these times in relation to the period of adoption spanned by the major departmental chains is as follows:

- (1) Thirteen firms reported having offered hard shell type hair dryers for sale during 1963, the year in which all the major departmental chains, reporting did so.
- (2) Twenty-one firms reported adding hard shell type hair dryers to their product assortments only after they were available in all the major departmental chains. (i.e. after September 1963)
- (3) Nineteen firms did not specify the time at which they first offered hard shell type hair dryers for sale but nine of these firms report that they did so only after they knew the product to be available in department stores or in other outlets.

Thus, nearly sixty percent of the firms reporting dates of

adoption indicated they first offered hard shell type hair dryers for sale after all the major departmental chains had done so. At the other extreme, thirteen firms reported offering hard type hair dryers during the same year as all of the major department stores.

TABLE 7

HAND SHELL DOMESTIC HAIR DRYERS COMPARATIVE DATA

	TOTAL CANADA LESS						DEPARTMENT STORES		
	TOTAL CANADA			MAJOR DEPARTMENT STORES			DEPARTMENT STORES		
	Sales	Imports	Import Percentage	Sales	Imports	Import Percentage	Sales as % of Total	Imports as % of Total	Import Percentage
1963	121,000	121,000	100.0	62,655	62,655	100.0	48.3	48.3	100.0
64	128,700	128,700	100.0	75,200	75,200	100.0	41.5	41.5	100.0
65	135,500	135,500	100.0	79,912	79,912	100.0	41.2	41.2	100.0
66	146,000	21,166	14.5	85,488	7,543	8.8	41.4	64.5	22.6
67	162,000	18,440	11.4	125,743	7,370	5.9	22.4	60.0	30.5
68	180,000	12,997	7.2	150,200	6,989	4.7	16.6	45.4	20.4
69	190,000	8,685	4.6	152,793	4,685	2.9	19.6	48.5	11.3
1970	205,000	20,369	9.9	154,675	10,208	6.5	24.6	49.8	20.1
71	225,000	31,113	13.9	158,596	12,913	8.1	29.5	58.5	27.4
72	250,000	31,754	12.7	178,715	10,054	5.6	28.5	68.2	30.4

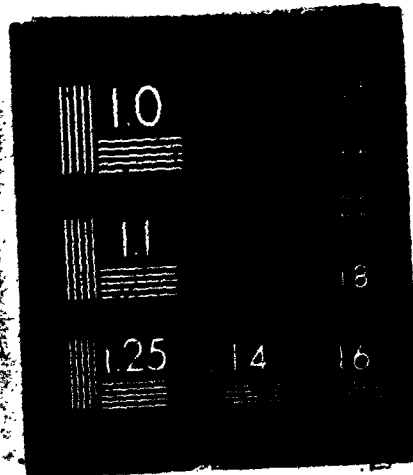
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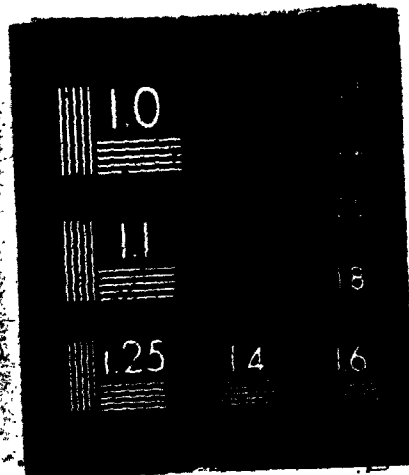


CHART 13

HARD SHELL HAIR DRYERS UNIT SALES GROWTH CURVES

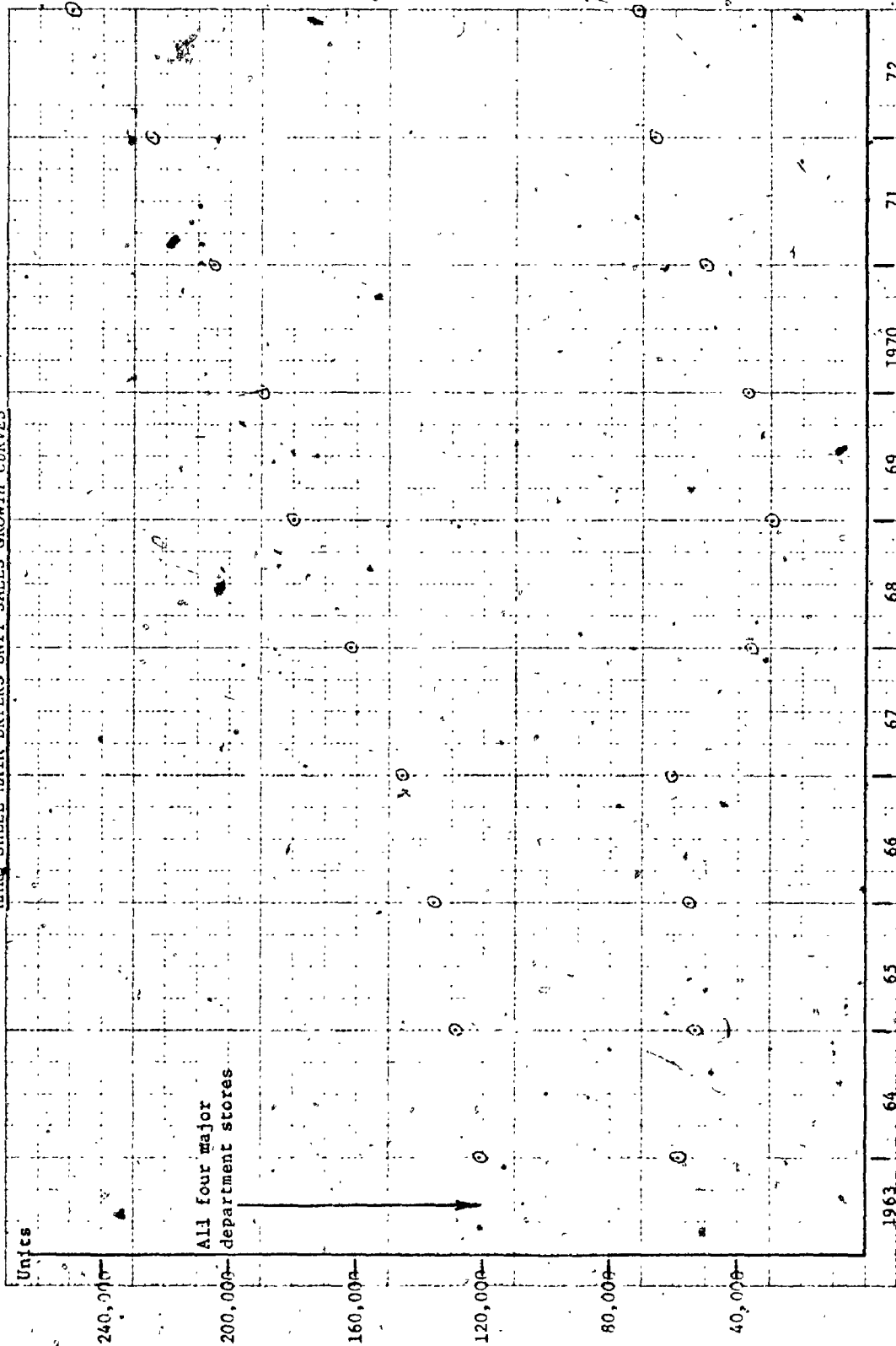
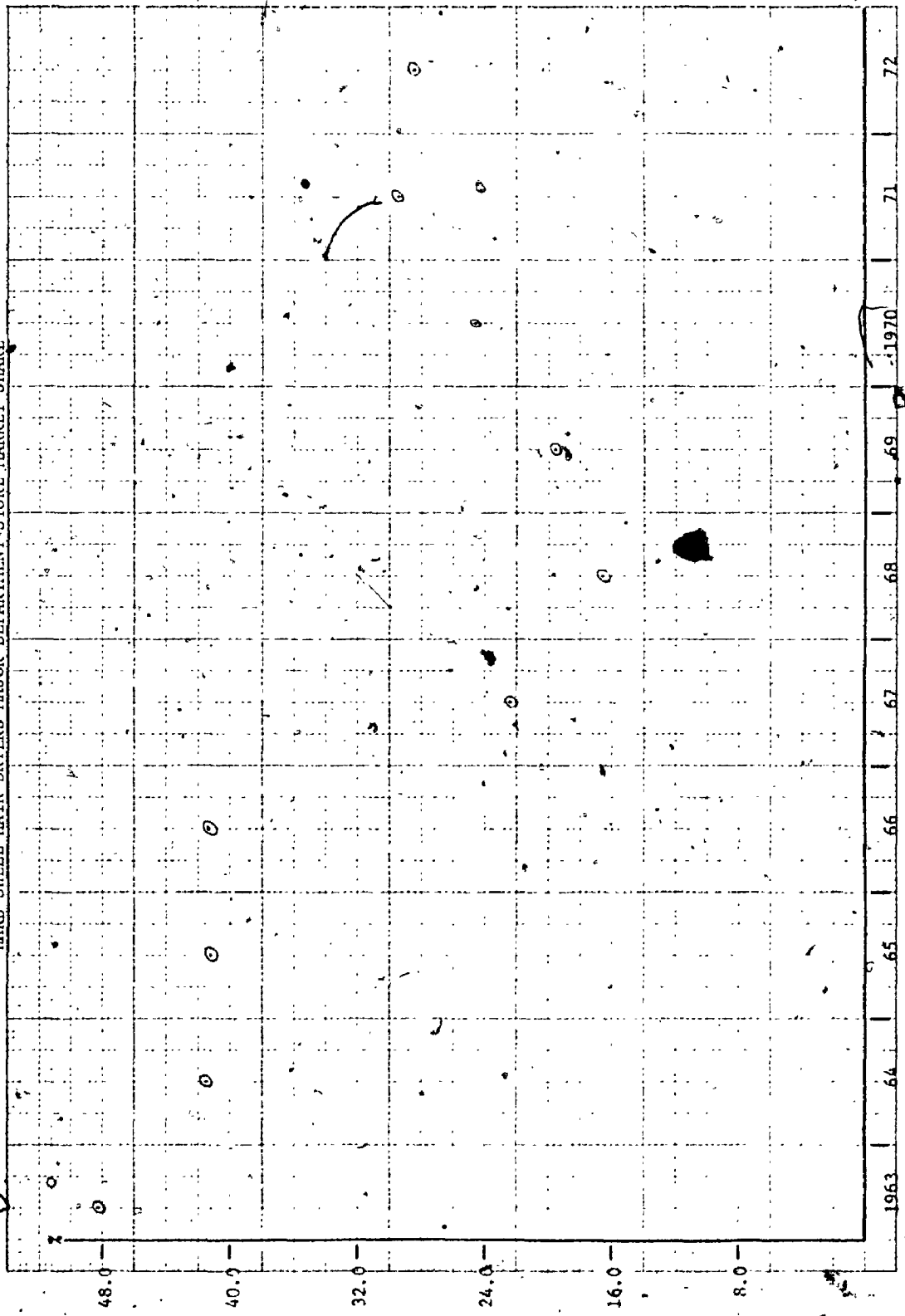


CHART 14

HARD SHELL HAIR DRYERS MAJOR DEPARTMENT STORE MARKET SHARE



SOURCES OF STATISTICAL INFORMATION

1. Derived from confidential data provided by private companies and DBS 43-003.
2. Derived from confidential data provided by private companies and U.S. Exports FT 410, Bureau of Census.
3. Accumulated from confidential records of the five individual major departmental chains.

CHAPTER XIII

METAL SKIS

The case of metal skis represents a noteworthy departure from the other products examined in this study. The product represented a significant innovation in its field when introduced although skis made of wood have been in existence for many decades. In addition to the superior endurance and performance characteristics of the metal ski over its wooden predecessor, the product was distinguished by a significantly higher price to the consumer. An examination of the pattern of adoption in the Canadian market associated with this product is of particular interest to this study since it represents a major departure in terms of its use from the majority of other products selected.

While several attempts had reportedly been made to produce skis out of metallic materials prior to the 1950's, the first successfully commercializable metal ski was developed in the U.S. by the Head Ski Company and was offered for sale in that country as early as 1950. Within a year of their U.S. introduction, a few pairs were brought to Canada by well informed individual retailers and distributors although acceptance by skiers was relatively slow in coming due to the high cost and uncertainty associated with the new product. While American produced metal skis managed to establish themselves firmly in the Canadian market by the early 1960's, European produced units swept into Canada thereafter and captured a large segment of the market by the middle of the decade. Unfortunately, most of the available

statistics on imports of metal skis are lumped in with imports of skis of wood and plastic materials. While it has been found possible to separate out most of the lower priced wooden skis from the data, it is more difficult to separate metal skis and plastic skis because of the greater price similarity. Although plastic skis made an appearance in the Canadian market as early as 1963, they did not begin to account for an important share of the non-wood ski market until after 1967. Nevertheless, the import data for the total Canadian market shown in table 8 represents an amalgamation of data for imports of metal skis, plastic skis and, in very recent years, metalo-plastic combinations. Although precise data is not available from any source, industry sources confirm that by 1972 metal skis were a relatively unimportant factor in the total Canadian ski market as plastic and metalo-plastic skis had assumed a dominant role.

Before 1967 all metal skis sold in Canada were imported but by the end of the decade a subsidiary of an American firm was assembling units in Canada and one Canadian company was manufacturing metal skis. While precise data are not available on Canadian production for any year, industry sources pointed out that the volume was so small as to be negligible in comparison to the number of units imported. At no time did Canadian produced units account for even 5% of total Canadian sales.

An important feature of the distribution of metal skis in Canada is the relatively important position held by the importers and distributors. Each foreign manufacturer appeared to be aligned with one or a few powerful importers who handled distribution of the brand for all of Canada or at least for major areas of it.

The experience of the major Canadian department store chains

with metal skis in terms of the time at which they first offered them for sale varies greatly with one firm in particular trailing the others substantially. One major departmental chain actually reported experimenting in 1947 with a Canadian produced ski made of an aluminum/magnesium alloy however, the experiment was short lived. The first reported offering of a commercial metal ski by a major departmental chain occurred in the fourth quarter of 1954. The first units handled by this firm were imported directly from a manufacturer in Switzerland. However, shortly thereafter the firm switched to importing via a Canadian importer. All the metal skis sold by this firm have been imported. Nearly a decade passed before the next major department store chain began to offer metal skis for sale in 1963. This firm dealt from the outset with a Canadian distributor which handled metal skis produced in the U.S. A fourth major departmental chain began selling metal skis in 1964 and they also sourced their first pairs in the U.S. via a Canadian distributor. The last major department store to offer metal skis for sale did so in August of 1967. This firm elected to bypass the Canadian distributors and in cooperation with a large U.S. retailer imported directly from an Austrian manufacturer.

Sales of metal skis through the major departmental chains climbed from 300 pair in 1960, the first year for which sales data were available to a peak of over 4,800 pair in 1969. Thereafter, unit sales plunged as plastic skis assumed a dominant market position. The sharp rise in sales during 1968 may be largely explained by the fact that one of the firms reporting did not have data before 1968 but by that year was selling a large volume of metal skis. It is difficult to draw any firm conclusion as to whether the case of metal skis adheres to the unit

sales pattern hypothesized in the "Diffusion Model" because of the fact that department store reported unit sales are of metal skis exclusively while the national data includes all types of non-wood skis. Nevertheless, it is significant that the department store share of the total Canadian non-wood ski market does climb during the 1960's from less than 3% in 1963 to nearly 7% in 1969. Furthermore it is to be noted that major department store sales of metal skis were virtually non-existent by 1972 although the product was still being sold through other retail outlets.

With regards to the import participation of the major department store chains, it is noteworthy that in every case, 100% of their requirements were met from foreign producers. While most of the firms purchased their imported units through Canadian distributors, one had elected to import directly from a foreign producer.

Of all the products examined in this study, it is most difficult to project firm conclusions concerning the metal ski market based on the results of the sample survey. Virtually all metal skis have been sold through specialty sporting goods retailers or through full line departmental type stores with sporting goods departments and since the metal ski is the only product of those under study which is handled by sporting goods stores, a disproportionately large sample of independent sporting goods stores could not be justified. A compounding difficulty associated with the sample survey as it applied to sporting goods stores was a disappointingly low response rate by these firms relative to the rate of other types of institutions surveyed. These factors in combination are reflected in the fact that only 16 of the firms returning usable questionnaires reported that they currently stocked metal skis

or that they intended to in the future. Fourteen of these firms did indicate the specific time at which they first offered metal skis for sale and the distribution of these times relative to the period of adoption by major departmental chains is as follows:

- (1) One specialty sporting goods retailer reported offering metal skis for sale before the first serious offering by a major department store chain. This retailer indicated that he had seen metal skis while on a ski trip abroad and had ordered a few pair to sell through his outlets.
- (2) A total of eight firms reported first offering metal skis for sale during the relatively long period spanned by their adoption by the first and last of the major departmental chains. However, five of these eight firms first offered metal skis for sale only after all but one of the major department stores had done so.
- (3) Five firms indicated that they first offered metal skis for sale after August 67, the time when the last major department store chain adopted the product.
- (4) The remaining two firms did not specify the time at which they first offered metal skis for sale but both indicated that they believed the product to have been available in department stores before they did so.

Thus, in spite of the small number of firms reporting there is evidence in the case of metal skis of the pattern of adoption which the "Diffusion Model" would predict. Major departmental chains while not first to adopt the metal skis in Canada appeared to do so before the bulk of other firms which offer the product for sale today.

This examination of the market for metal skis in Canada has been of particular interest not only because the findings appear to offer support to the "Diffusion Model" but primarily because the product involved is of a distinctly different nature from the others examined in the study. Subjecting the model to varying market conditions was

one of the objectives which the study hoped to achieve.

CHART 15
METAL SKIS UNIT SALES GROWTH CURVES

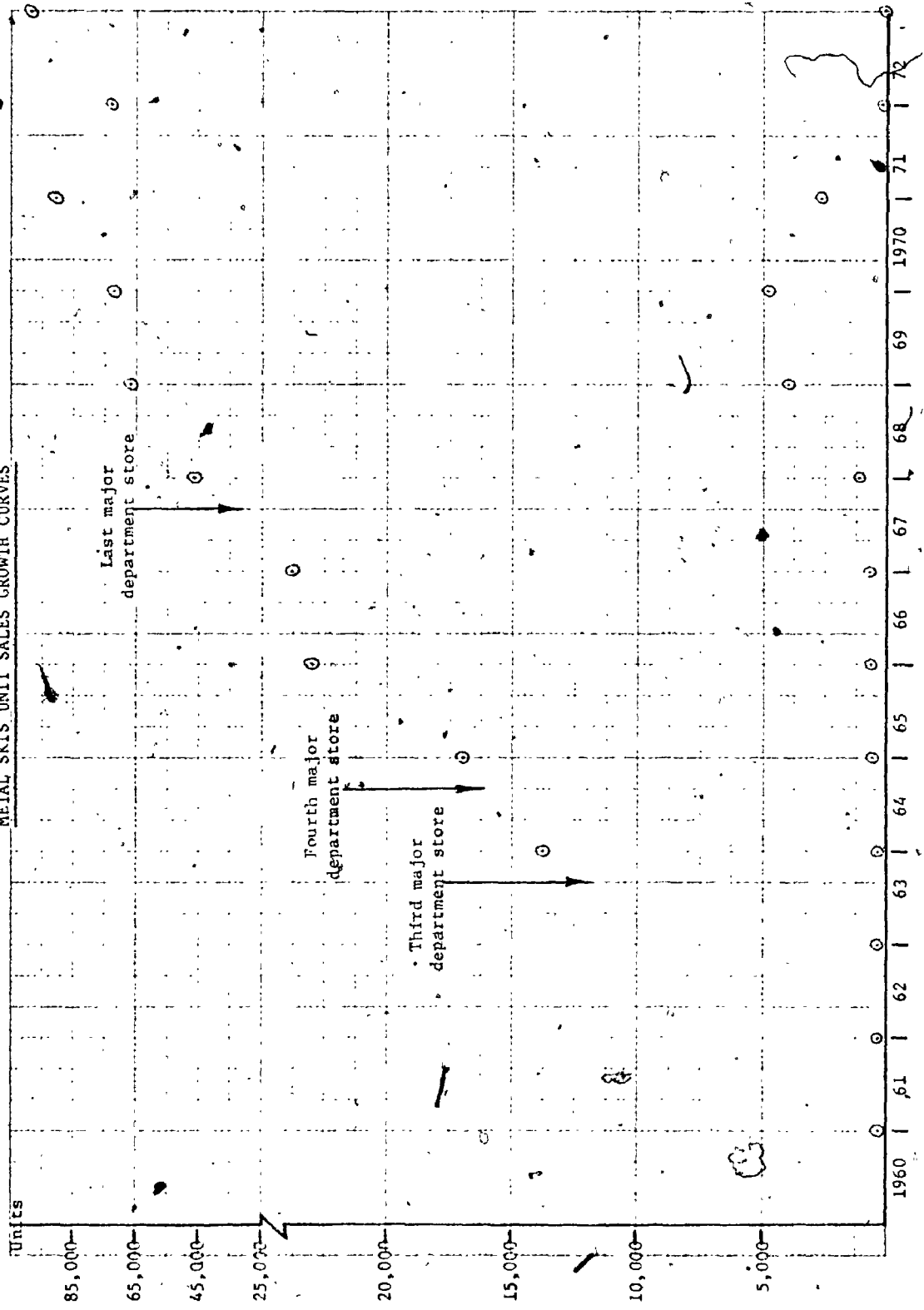
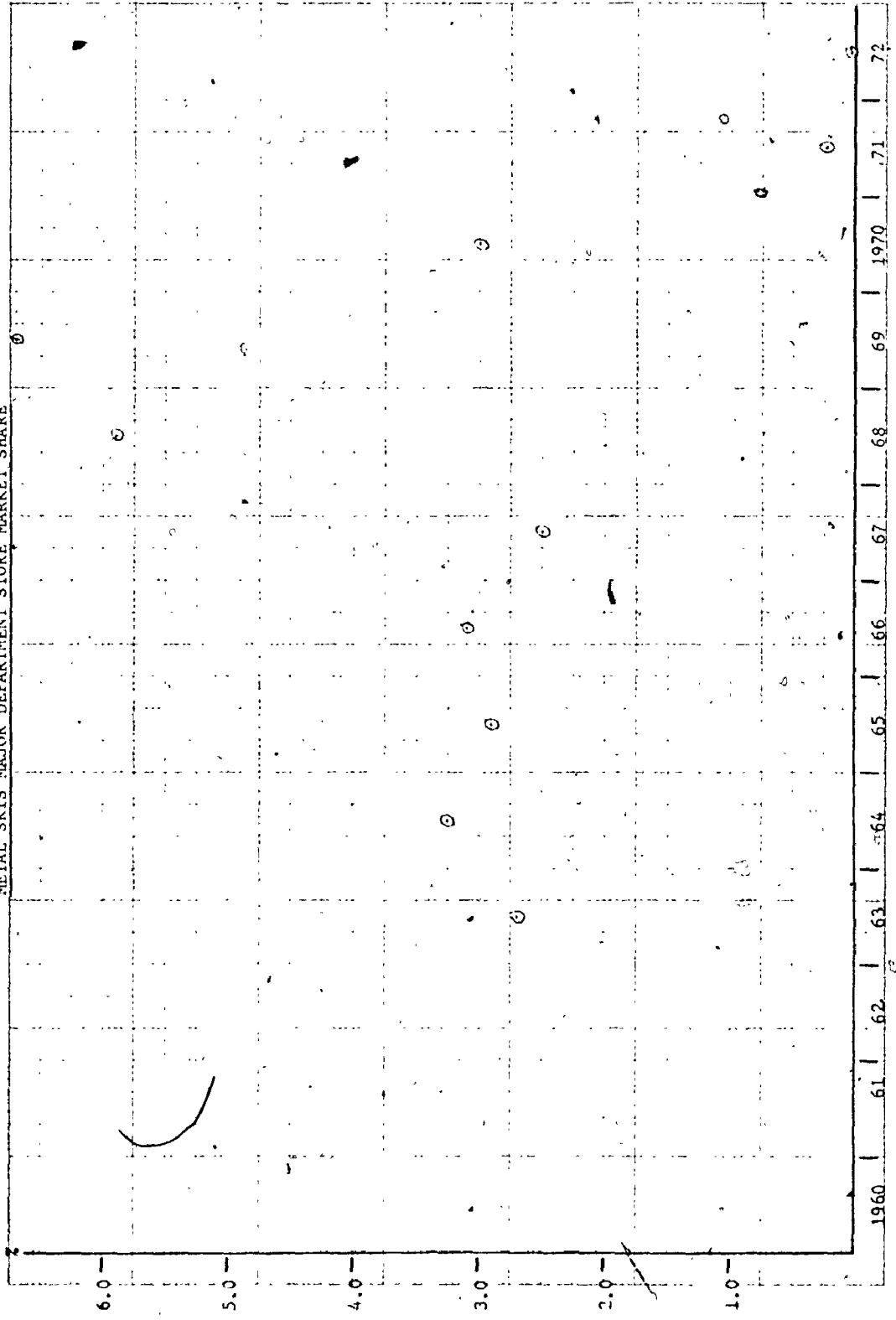


CHART 16
METAL SKIS MAJOR DEPARTMENT STORE MARKET SHARE



SOURCES OF STATISTICAL INFORMATION

1. Derived from DBS 65-007, Special Study 5-14-64, Import Analysis Division, Department of Industry, Trade and Commerce, Austria: Exports and Imports.
2. Accumulated from confidential records of five individual major departmental chains.

PART 3

CHAPTER XIV

AN OVERVIEW

In assessing the principal results of this study it is worthwhile to examine each of the two major phases in turn, beginning with the mail survey and then moving to the major quantitative portion of the research.

THE MAIL SURVEY OF CANADIAN RETAIL INSTITUTIONS

In light of the focus in the major quantitative phase of the research on the involvement of major Canadian department stores, it was decided to obtain additional information concerning the products being studied by examining the nature and timing of participation of other types of distributive institutions in the market for these products. In particular, this phase of the research was intended to provide verification of hypothesis II dealing with the time of adoption of new products by major Canadian departmental chains in relation to the time of adoption by other retail outlets. The validity of the hypothesis across the range of products studied is examined in this phase of the study. The method selected for obtaining supplementary information on the eight products studied was a questionnaire mailed to a sample of those Canadian retailers who handled these products.

The discussion of the mail survey will be divided into four parts: one dealing with the design of the actual questionnaire used

in the survey, a second which outlines the sample selection procedures, a third which explores the question of returns for the questionnaire, and the last one touching on the principal findings of the survey. The first three parts are contained in Appendix B. The principal findings are described below.

Principle Findings of The Mail Survey

Detailed findings of the survey with respect to the dates of adoption of the eight products under study by the firms surveyed are reported in the chapters dealing with individual products. This data shows that for all but three of the products, more than 50% of the retail firms reporting indicated that they first offered a product for sale at a time after it had been available in all the major departmental chains. However, these results are perhaps misleading when account is taken of the fact that in the cases of six of the eight products, one of the major department stores adopted considerably later than the others. For five of these six products, the percentage of retailers adopting after all but one of the major departmental chains is in excess of 70%, providing strong intuitive support to the hypothesis that of the several types of merchandising institutions which do adopt a new product, the major departmental chains will be among the earlier adopters.

Hypothesis II (b): Adoption by major departmental chains in relation to time of adoption by other retail outlets.

The mail questionnaire survey yielded a number of specific adoption dates for each of the products from which a sample mean could be calculated and compared to the mean adoption date for the five major

departmental chains. These means are expressed in Table 9 in terms of the number of years after the product had been known to be available in the Canadian market.

On the strength of a one-sided test for difference between means at a 5% significance level, the mean departmental chain adoption time was found to be significantly earlier than that of the other retailers except for color T.V. and metal skis. At a 10% level, only color T.V. was not significant. In the case of metal skis, one major departmental chain adopted long after all the others had done so, which tended to bias the department store results. It is interesting to examine the case of color T.V. for a possible explanation, as to why the mean adoption time of the major departmental chains was not found to be significantly earlier than that of the other retailers surveyed. In chapter VIII it is pointed out that Canadian unit sales of color television sets increased by a factor of more than eight during 1966, the year in which color broadcasting commenced in this country. Clearly, the demand for color sets was closely tied to the availability of color programming in Canada. Although many Canadian homes were able to receive color programs from the U.S. stations prior to 1966 the importance of color programming originating from Canadian networks was nevertheless shown by the data on unit sales to be a critical influence on Canadian demand. There is little doubt that the major Canadian departmental chains, which are constantly in search of new products with substantial potential sales volume would have examined the relationship between color programming and demand for color sets when considering the adoption of color television sets. Hence, the timing of their adoption of this product may well have been influenced by some estimate of when color

TABLE 9

MEAN ADOPTION TIMES

	Mean Adoption Time of Major Departmental Chains	Mean Adoption Time of Mail Survey Respondents
Dishwashers	13.4 years	20.2 years
Twin-tubs	1.15 years	2.9 years
Color T.V.	8.95 years	10.4 years
Cassette recorders	1.8 years	3.2 years
Console stereos	1.75 years	5.1 years
Super 8 movie cameras	.35 years	1.6 years
Hard shell hair dryers	.5 years	3.1 years
Metal skis	8.85 years	13.3 years

broadcasting in Canada might commence.

In summary, the data accumulated from the mail survey on adoption dates for each product offer powerful support to the hypothesis that of the several types of merchandising institutions in Canada which do ultimately adopt a new product, the major department stores will be among the earlier adopters. The mean adoption time of the major departmental chains was found to be earlier than that of the other retailers surveyed for all eight products studied and significantly earlier for all but color T.V. where special circumstances influenced departmental chain adoption.

THE QUANTITATIVE STUDY

In this major phase of the research, an attempt was made to verify empirically the specific hypotheses arising out of the previously discussed diffusion model. In chapters VI to XIII, each of the eight products for which quantitative data were available was examined in turn with respect to the individual hypotheses outlined in chapter V. This section of the study is devoted to a detailed analysis of each of the major hypotheses for all the products studied with a view to drawing conclusions about the validity of each hypothesized relationship across a range of individual products.

Hypothesis I: Import propensity of major departmental chains compared to import propensity of all other retail establishments.

It has been suggested by the diffusion model that major departmental chains, all of which have overseas buying connections, will, even at an early stage in the life cycle of a product in the Canadian market,

search domestic and foreign markets alike in search of lower-cost sources of supply or sources offering superior product features, either of which will provide them with a competitive advantage in the Canadian market. However, as Canadian-based manufacturers have tended not to become heavily involved in the production of a new product until it demonstrates a significant market potential in Canada, it is to be expected that the major departmental chains with their ready access to information on foreign markets will tend to import a higher proportion of the units of any new product they sell than would be the case for all other types of retail outlets combined. Furthermore, while it is suggested that the proportion of imports to total units sold by major departmental chains may decline as a product progresses to a later stage in its life cycle in the Canadian market, for the same reasons as above, this proportion should nevertheless be expected to remain higher than the comparable proportion for all other retail outlets. An examination of the import propensity of the major departmental chains compared to all other retail outlets for the eight products studied has yielded the observations in Table 10.

~~In the case of cassette tape recorders, no domestic manufacturing facility has to date been used to produce this product.~~ Hence there remain seven products which provide comparative data on import propensity. These seven products collectively account for a total of 69 years during which both domestic and imported units were offered for sale in the Canadian market. During these 69 years the import proportion of the major department stores exceeded that of all other retail outlets in 45 years and was less in 24 years. On the strength of a χ^2 test of significance it has been shown that such a result

TABLE 10

COMPARATIVE IMPORT STATISTICS

Year Canadian production commenced	Total Years for which department store data reported	Number of these years during which units produced in Canada and imported		Number of years for which department store import proportion exceeded proportion for other retailers		Number of years for which department store import was less than for other retailers
		Canada and imported	other retailers	import proportion exceeded proportion for other retailers	other retailers	
Dishwashers 1953	16	16	14	1	2	2
Twin-Tubs 1964	9	6(1)	6	0	0	0
Console Stereo 1956	15	15	3	12	10	12
Color T.V. 1962	11	11	1	10	10	10
Cassette Recorders not yet	9	0	-	-	-	-
Hard Shell Hair Dryers 1966	10	7	7	0	0	0
Super 8 Movie Cameras 1965	8	8	8	0	0	0
Metal Skis 1966	12	6	6	0	0	0
TOTAL		69	45	24	24	24

1. During the first three years that twin-tube were offered for sale in Canada no completed units were imported.

offers strong support to the hypothesis dealing with the import propensity of major departmental chains (see Appendix A).

Support for this hypothesis is further strengthened when it is noted that virtually all the instances of smaller import percentages for the major departmental chains were confined to two products, namely color T.V. and console stereo record players. It is important to examine these two exceptions for possible explanations.

The explanation, in the case of color T.V. is straightforward and has been alluded to in Chapter VIII. The reason for this pattern is that the product category, color television, included both portable units of which more than 30% have been imported each year, and table or console units for which the import proportion rarely exceeds 10%. Those units of the latter type which are imported into Canada have tended to be high priced and elaborate with features not offered on Canadian produced units. Since more than 60% of the color T.V. units imported into Canada in recent years have been of portable units, combining data on console, table model and portable units has resulted in a conclusion that is misleading for this research. Information provided by the major departmental chains themselves has indicated that they account for a much smaller share of sales in the highly price-sensitive portable segment of the total color T.V. market and in the top priced console segment than they do of the volume priced table model and console segment. Furthermore, these firms have revealed that in the order of 70% to 90% of the portable units they sell are imported, a proportion far in excess of the value for all other retailers as a group. Hence, while the gross import percentage of the major departmental chains was found to be less than that of all other retail

institutions, in fact, the percentage was substantially higher for portable units considered separately.

The probable explanation of the observed pattern with respect to console stereo units lies with inaccuracy in the data on total Canadian imports, as pointed out in chapter X. An official of a large Canadian home entertainment products manufacturer pointed out that the data published by Statistics Canada on Canadian imports of radio-phonograph combinations consists largely of compact portable and table-top combinations which are not under examination in this study. As no precise method existed for separating such units from larger consoles in the import data, gross data was employed throughout, with the result that the import proportion for retail institutions other than the five major department stores is artificially and significantly high. An equally important contributing factor is a confirmed incompleteness of data on department store imports for the years prior to 1967. In the case of console stereos, where by far the largest proportion of units was secured from domestic sources, the records of four of the five major departmental chains on imported units for the years prior to 1967 were known to be incomplete. Hence, for the purpose of testing the hypothesis concerning import propensity, it is questionable whether data on console stereos for the years preceding 1967 should be included in the χ^2 test of significance.

There remains an important observation concerning the form of import involvement of major department stores. Although in the case of every one of the products studied imported units have been continuously available through Canadian-based distributors or through Canadian subsidiaries of foreign producers, it is noteworthy that the major

department stores have repeatedly bypassed such firms in favour of sourcing their imported units directly with foreign producers. The extent of direct importing engaged in by the major departmental chains is indicated in Table 11.

In the particular cases of dishwashers, cassette recorders, console stereos, and metal skis, at least one of the departmental chains imported 100% of its requirements for some years directly from foreign producers. Conspicuous by the absence of any direct importing on the part of major departmental chains is the case of Super 8 Movie Cameras. One senior department store official explained this phenomenon by the fact that department stores did not wish to become involved with the servicing of this product; by sourcing through Canadian-based distributors they could leave servicing problems to the distributor.

Two departmental chains in particular bear special comment at this point as their import activities were observed to be exceptional relative to the other firms. One firm engaged in direct importing for every product studied except super 8 movie cameras, while the other imported directly five of the eight products.

In summary, the results of the quantitative phase of the research offer powerful support to the hypothesis dealing with import propensity. A χ^2 test of the data provided confirmation of the hypothesis that Canada's five major departmental chains as a group demonstrate a greater propensity to import new consumer products than do all other retail institutions combined. An important related finding is the considerable degree of direct import activity engaged in by the major departmental chains with respect to the products examined.

TABLE 11

DIRECT IMPORTS

	Number of departmental chains which imported directly in one year or more	Number of years during which one department store reported importing units	Number of years during which one department store or more reported importing units directly from foreign manufacturer
Dishwashers	2	16	14
Twin-Tubs	3	6	5
Console Stereo	2	7	5
Color Television	3	9	6
Cassette Recorders	4	9	5
Hard Shell Hair Dryers	0	10	0
Super 8 Movie Cameras	0	8	0
Metal Skis	3	13	5

Hypothesis II (a) & (b): Chronology of Department Store Adoption

In the diffusion model, it is suggested that the process by which a new consumer product is introduced to the Canadian market will be largely determined by the relationship of the innovating foreign company to the Canadian market. Specifically, it is to be expected that the most rapid spread of a new product to the Canadian market will tend to occur when the original innovating firm is multinational with an influential and relatively autonomous subsidiary in Canada. In such circumstances the Canadian subsidiary is well placed to assess the potential in the Canadian market for the new product and to import sample quantities to test market acceptance. Where the new product is introduced to the Canadian market in this manner, the subsidiary will frequently select retail outlets which provide maximum exposure in order to test Canadian market acceptance. The most conspicuous example of such retail outlets are the major departmental chains. Hence, in cases where the original innovator of a new consumer product is a multinational firm with a significant Canadian subsidiary, some major departmental chains may be expected to become involved with the product from the time of the product's original introduction.

In the cases of six of the eight products examined in this study, the original innovating foreign company had an established subsidiary in Canada.

It has been suggested, however, that the role of the major departmental chains is quite different where the original foreign innovator is inexperienced in the Canadian market. In such cases the initiative for introducing the new product to the Canadian market will

tend to be assumed by an entrepreneur of distinctly different characteristics, often an importer or a small specialty retailer. The risks associated with the adoption of a new product of this type are perceived as being greater than is the case when a Canadian subsidiary of the original innovator assumes the role of entrepreneur in the Canadian market. Consequently, major department stores will tend to let other innovative specialty retailers experiment with the market acceptance of new consumer products of this second type before becoming involved themselves. If the new product does demonstrate a reasonable potential, however, they will move relatively quickly to offer the product for sale. Of the eight products studied, only two were innovated by firms which did not have existing Canadian subsidiaries. These products were domestic dishwashers and metal skis.

The two parts of the hypothesis dealing with the chronology of department store adoption are dealt with below.

- (a) Adoption by major departmental chains relative to the original date of introduction to the Canadian market.

It has been suggested that the five major Canadian departmental chains will tend not to be the first firms in Canada to adopt a new product, particularly in those cases where the product was innovated by a foreign producer with no existing subsidiary in Canada. An examination of the adoption dates of each of the eight products studied has yielded the information shown in Table 12.

Information from Canadian manufacturers and the major departmental chains indicate that in the case of twin-tubs alone, two major department stores were positively identified as being the first

TABLE 12

ADOPTION BY MAJOR DEPARTMENTAL CHAINS

Was a major departmental chain positively identified as being the first retailer to offer the product for sale in Canada?

Number of departmental chains reporting adopting the product at time it was introduced to market

Product

Dishwashers

no

Twin-Tubs

yes

Console Stereo

no

Color T.V.

no

Cassette Recorders

no

Hard Shell Hair Dryers

no

Super 8 Movie Cameras

no

Metal Skis

no

2

A

retailers in Canada to offer the product for sale. The case of twin-tubs is unique in that the Canadian subsidiary of Hoover took the initiative for introducing the product to the Canadian market, and in order to gain rapid exposure to the market it approached two major departmental chains first. For all seven of the other products studied, however, retail institutions other than the major departmental chains were known to have been first to offer the products to Canadian consumers. This result is particularly interesting in the case of products such as hard shell hair dryers, Super 8 movie cameras, and color T.V. which were developed and commercialized in the United States by firms with established Canadian subsidiaries.

In summary, the research findings with respect to seven of the eight products studied offered strong support for the hypothesis that major departmental chains will tend not to be the first firms in Canada to adopt a new product. These results are particularly revealing when it is recognized that at least three of the products examined were developed, commercialized and heavily promoted in the United States at the time of introduction to that market by firms with established Canadian subsidiaries and yet were still adopted by other Canadian retailers prior to their adoption by the major department stores. Perhaps the important point to note here is that while some major departmental chains were known to have adopted some of these products, at the time of their formal introduction to the Canadian market by the Canadian subsidiary of the foreign innovator, there were nevertheless some other retailers who obtained units and offered them for sale prior to their formal introduction. The one contradiction to the hypothesis was in the case of the twin-tub, a product introduced to Canada from

Britain by the established Canadian subsidiary of the leading British producer. It is interesting to note that this product was introduced to the Canadian market considerably in advance of its introduction to the United States.

- (b) Adoption by major departmental chains in relation to time of adoption by other retail outlets.

The diffusion model would suggest that although major departmental chains may tend not to be first to adopt a new product in the Canadian market, they will nevertheless tend to be among the earlier adopters. The validity of this part of the hypothesis has been assessed in the first major section of this chapter dealing with the mail questionnaire survey. Some comments regarding the quantitative phase of the analysis are, however, appropriate here.

First, it is to be noted that a reasonable degree of consistency was observed to exist in connection with the pattern of adoption of the individual major departmental chains. One of the five major departmental chains exhibited a consistent pattern of being relatively late in the adoption of the new products examined in this study. For six of the eight products studied this firm was the last of the major departmental chains to offer the product for sale and second-last in a seventh case. Only once was this firm among the first to adopt, and this occurred in the case of hard shell hair dryers which were introduced and heavily promoted by the Canadian subsidiary of a United States manufacturer. Not only was this firm consistently last to adopt, but in at least four cases its adoption came more than a year after all the other departmental chains had done so. At the other

extreme; two of the major departmental chains demonstrated a consistent pattern of aggressiveness in adopting the new products studied. One of these firms was reportedly first to adopt or tied for first in the cases of five of the eight products, and second in a sixth. The other firm was also first or tied for first in five cases but was last in one and second last in two others. Of the remaining two major departmental chains, one was first in one case and last in another, but otherwise in the middle of the adoption time spectrum, and the other firm was never either first or last.

Another significant feature of the chronology of adoption by the major Canadian departmental chains was that the elapsed period from the time the first firm adopted a new product until the last ranged from less than one year in the cases of Super 8 movie cameras and hard shell hair dryers, to more than 13 years in the cases of domestic dishwashers and metal skis. Such a result is perhaps not surprising when it is noted that the first two products were both heavily promoted at the time of their introduction to the Canadian market by Canadian subsidiaries of United States manufacturers, while the latter two products were both innovated by foreign producers with little experience in the Canadian market and no established Canadian subsidiary.

In summary, the section of this chapter dealing with the mail survey has provided confirmation of the hypothesis that of the several types of merchandising institutions in Canada which do adopt a new product, the major departmental chains will be among the earlier adopters. However, it is important to note that within the group of five major departmental chains, there exist significant and consistent

TABLE 13

COMPARATIVE GROWTH RATES AFTER ADOPTION
BY SECOND MAJOR DEPARTMENTAL CHAIN

Period from original introduction to adoption time of second major departmental chain		Average annual growth in unit sales in years for which data reported		Increase in unit sales during immediately following year		Average annual increase in unit sales during two following years	
Years involved	(1)	(2)	Units	% of (2)	Units	% of (2)	(3)
Dishwashers	1946-51	na	na	na	na	na	na
Twin-tubs	1964	7,663	12,783	167%	13,536	177%	
Color T.V.	1958-64	1,950	7,000	359%	47,500	2,440%	
Cassette Recorders	1964	4,547	40,379	889%	40,157	885%	
Console Stereos	1956-58	8,596	25,180	293%	17,069	199%	
Super 8 Movie Cameras	1965	14,945	41,922	281%	21,234	143%	
Hard Shell Hair Dryers	1963	121,000	7,700	6.5%	7,250	6%	
Metal Skis	1950-54	na	na	na	na	na	na

bring about an increase in unit sales reflecting acceptance by a broader market segment. Initially, the increased volume of sales is largely to be attributed to the considerable power of department stores to overcome barriers to consumer acceptance. However, as the product demonstrates increasingly broader acceptance, continued increases in unit sales are expected to result from increased product exposure as other types of retail outlets offer the product for sale.

Evidence concerning both parts of the hypothesis dealing with the participation of major departmental chains in the Canadian market is presented below.

- (a) Growth in total Canadian unit sales following adoption by major departmental chains.

It is suggested that once a new product is adopted by the major Canadian departmental chains, the product will enter a period of more rapid growth in unit sales in the Canadian market. The quantitative verification of this hypothesis for the eight products under study was complicated by the fact that in some cases examined the period of time which elapsed between adoption of a new product by the first and the last of the major departmental chains spanned many years. In addition, as pointed out earlier, one of the major departmental stores was found consistently to adopt new products after all the others, and in at least four cases this lag in adoption time was considerable. Thus, the decision as to precisely when a given product could be deemed to have been "adopted" by the major departmental chains as a group could presumably have a significant effect on the validity of this hypothesis. Thus it was decided to employ two distinct measures

of cut-off time and to compare the differences which existed between the two sets of results. Use of the time of adoption by either the first or last of the major departmental chains ran a considerable risk of biasing the results in relation to either the most or the least innovative of the firms. In introducing such a bias it was felt that the results would not accurately reflect the influence of the major departmental chains as a group on the Canadian market. Consequently, the time at which each product was adopted by the second major departmental chain on one hand and by the second last on the other were chosen as the cut-off for evaluation of the rate of growth in unit sales of the products under study.

An examination of the comparative rates of growth in total Canadian unit sales of each product before and after adoption by the second major departmental chain yielded the results shown in Table 13.

By way of contrast the comparative rates of growth in total Canadian unit sales of each product before and after adoption by all but one of the major departmental chains yielded the results shown in Table 14.

It is interesting to note that a change in choice of a cut-off time has no effect on the results in the cases of four of the eight products examined. Due to limitations in the availability of data for dishwashers and metal skis in the early years, use of the time of adoption by the second major departmental chain as a cut-off yields no comparative growth statistics in those two cases whereas using the other cut-off does provide results.

The case of hard shell hair dryers bears special mention as the figures for this product in tables 13 and 14 are not meaningful. The

TABLE 13

COMPARATIVE GROWTH RATES AFTER ADOPTION
BY SECOND MAJOR DEPARTMENTAL CHAIN

Period from original introduction
to adoption time of second major
departmental chain

Years involved	(1)	(2)		(3)		(4)		
		Average annual growth in unit sales in years for which data reported	Units	Increase in unit sales during immediately following year	Units	Average annual increase in unit sales during two following years	% of (2)	% of (2)
Dishwashers	1946-51	na	na	na	na	na	na	na
Twin-tubs	1964	7,663	12,783	167%	13,536	177%		
Color T.V.	1958-64	1,950	7,000	359%	47,500	2,440%		
Cassette Recorders	1964	4,547	40,379	889%	40,157	885%		
Console Stereos	1956-58	8,596	25,180	293%	17,069	199%		
Super 8 Movie Cameras	1965	14,945	41,922	281%	21,234	143%		
Hard Shell Hair Dryers	1963	121,000	7,700	6.5%	7,250	6%		
Metal Skis	1950-54	na	na	na	na	na		na

TABLE 14

COMPARATIVE GROWTH RATES AFTER ADOPTION BY
SECOND LAST MAJOR DEPARTMENTAL CHAIN

Period from original introduction
to adoption time of second last
major departmental chain

Years involved	(2)		(3)		(4)	
	Average annual growth in unit sales in years for which data reported	Units	Increase in unit sales during immediately following year	Units	Average annual increase in unit sales during two following years	% of (2)
Dishwashers	1946-54	866	801	93%	1,544	179%
Tvis-tubs	1964-66	11,578	35,419	316%	39,633	343%
Color T.V.	1958-64	1,950	7,000	359%	47,500	2,440%
Cassette Recorders	1964-67	39,230	142,376	366%	134,252	342%
Console Stereos	1956-58	8,596	25,180	293%	17,069	199%
Super 8 Movie Cameras	1965	14,945	41,922	281%	21,234	143%
Hard Shell Hair Dryers	1963	121,000	7,700	6.5%	7,250	6%
Metal Skis	1950-64	3,161	6,131	194%	3,454	109%

explanation for the apparent contradiction of the hypothesis in this case lies in the inappropriateness of using the year as a unit of time. Adoption of hard shell hair dryers by Canadian consumers was so rapid that it had been accepted by a broad range of consumers during the first year following its introduction to the market. In effect the product moved from the Introductory through to the General Acceptance stages of its life cycle with such rapidity that the Product Life Cycle concept loses much of its meaning in this case. The relatively low unit price and high rate of exposure of the product to consumers in advance of its introduction to the Canadian market through U.S. television advertising and magazines published in the U.S. offer some explanation for the rapid rate of acceptance in Canada.

The results in tables 13 and 14 indicate that, with the exception of hard shell hair dryers, each product studied entered a period in which the rate of growth in unit sales in the total Canadian market increased sharply. It is important to note, however, that in the cases of dishwashers, metal skis and color T.V. the total market was subsequently to enter a period with a still greater increase in rate of growth in unit sales. In all three of these cases Canadian market acceptance was a more gradual process than was true of the other products studied. At the opposite end of the spectrum was the hard shell hair dryer for which acceptance by Canadian consumers during the first year was exceptional.

There remains one aspect of the rates of adoption of the individual products which merits special comment. In the cases of hard shell hair dryers and Super 8 movie cameras, it was observed that adoption by the major departmental chains occurred much more rapidly

than for the other products examined. In both cases at least four of the five firms had adopted during the year the product was formally introduced to the Canadian market. It is interesting to look for a possible explanation of the abnormally rapid rate of adoption here. Three features of these two products are noteworthy in this regard. First, they are both relatively low priced items in comparison to the others. Second, they were both introduced with heavy promotional back-up to the U.S. market within a year prior to their Canadian introduction. And third, they were both introduced by established Canadian subsidiaries of the multinational corporations which innovated the product in the U.S. It would appear that the multinational firms played a significant role in the rate of adoption of these two products in the Canadian market. By way of contrast, the data would further suggest that the opposite effect holds in cases where established Canadian subsidiaries of the originating foreign firm do not exist. Such was the case with dishwashers and metal skis where periods of eight and 14 years respectively elapsed between introduction to the Canadian market and adoption by four of the five major departmental chains. Thus the findings of this research suggest an important relationship between rate of adoption of a new product in the Canadian market and the presence of an established Canadian subsidiary of the innovating firm.

For the products under examination, support for the hypothesis concerning the rate of growth in total Canadian unit sales following adoption by the major departmental chains is strong. Thus the data tend to confirm that the rate of adoption of a new consumer product in Canada is heavily influenced by whether or not the major departmental chains have become involved with it. In the case of each product, with

the exception of the hard shell hair dryer for which the results are unclear, the rate of growth in unit sales increased dramatically immediately following adoption by the major departmental chains. There is in the data, however, an important qualification to this finding. It would appear that in those cases where the original foreign innovator of a new product has a subsidiary in Canada with established marketing facilities, that the rate of adoption both by departmental chains and ultimate consumers themselves will be accelerated to an extent that may even overshadow the influence of the departmental chains.

(b) Retail market share accounted for by major departmental chains.

It might be expected from the diffusion model that the retail market share (in units) accounted for by the major departmental chains would initially rise from the time of adoption by the first of these firms but would subsequently reach a peak and decline, reflecting the entry of other types of retail institutions into the market. An examination of the market share patterns of the major departmental chains as a group for each of the products studied yielded the information shown in Table 15.

The market share performance patterns of the major departmental chains with respect to twin-tubs, hard shell hair dryers and Super 8 movie cameras bear isolation for special comment because of the exceptional circumstances surrounding them. As pointed out earlier, major Canadian departmental chains were known to have been among the first retail institutions in Canada to offer all these products for sale and for twin-tubs, two of the major departmental chains were

TABLE 15

MARKET SHARE OF MAJOR DEPARTMENTAL CHAINS

	Did market share rise following adoption by first major departmental chain?	Did market share subsequently decline?
Domestic Dishwashers	yes	yes
Twin-Tubs	no	yes
Console Stereo	yes	yes
Color T.V.	yes	yes
Cassette Recorders	yes	yes
Hard Shell Hair Dryers	no	yes
Super 8 Movie Cameras	yes	yes
Metal Skis	n.a.	yes

identified as being the first retailers to adopt the product. Hence, these departmental chains, as expected, accounted for a significant share of total Canadian sales of these products from the time they were introduced. This share, in fact, immediately declined, reflecting the early entry of other non-departmental chains into the market, but as other large major departmental chains subsequently adopted the product the share accounted for by these firms as a group once again began to rise. The situation for twin-tubs and Super 8 movie cameras was further complicated by the fact that total Canadian unit sales of both have declined from the level of earlier years during their respective histories. In the case of Super 8 cameras, recent years have shown sharp gains, with the result that the hypothesized pattern of market share enjoyed by major departmental chains has been observed. However, the decline in total unit sales of twin-tubs shows no sign of being reversed and the departmental chains' share of the total market, which declined steadily from the year of the product's introduction, has risen in every year since the last of the major departmental chains offered the product for sale. As data on total unit sales of metal skis in the Canadian market were incomplete for the early years after its introduction, it was not possible to determine whether the share accounted for by the major departmental chains did increase subsequent to the products adoption by the first major departmental chain. However, the departmental chains market share for this product was subsequently observed to first rise and then decline in keeping with the hypothesis concerning market share.

The products studied, with the above qualifications, have all exhibited a pattern of growth in major department store market share

consistent with hypothesis III. For these products the major departmental chains market share rose from the time of its adoption, subsequently reaching a peak and beginning to decline. Thus the data appear to support the idea that the share of the total Canadian market for a new consumer product held by the major departmental chains as a group will first rise subsequent to its adoption by these firms in response to its acceptance by the much broader range of consumers which comprise the department stores' clientele and that this share will later decline as other retail outlets further increase the products' exposure.

SUMMARY

The combined principal findings of the quantitative phase of the research and of the mail survey are the following:

1. The hypothesis which stated that from the time domestic production begins, the proportion of department store unit sales of each product represented by imports will exceed the comparable average proportion for all other retail institutions combined, was confirmed. Major Canadian departmental chains do exhibit a higher propensity to source new products abroad than do other retail institutions, and furthermore demonstrate a marked tendency to import directly from foreign producers in preference to buying from Canadian based importers.
2. Both parts of the hypothesis dealing with relative time of adoption by major departmental chains in comparison to other retail institutions were strongly confirmed. The data

revealed that major departmental chains were not first to adopt in the cases of seven of the eight products studied. Furthermore, it was found that while major departmental chains tended not to be first to adopt, they were among the earlier adopters in all eight cases examined. A major qualification to this finding was that within the group of major departmental chains, two firms consistently adopted a more innovative stance with respect to adoption of new products than did the others and another firm was consistently last to adopt, apparently preferring to avoid the risks associated with the handling of new products.

3. Both parts of the hypothesis dealing with the involvement of major departmental chains in the pattern of adoption of new consumer products in the Canadian market were supported. The rate of growth in total Canadian unit sales exhibited a tendency to increase significantly in the period immediately following adoption by the major departmental chains in seven of the eight cases studied. An important qualification to this finding was that in cases where the original foreign innovator of a new product had a subsidiary in Canada with established marketing facilities, the rate of growth in unit sales was accelerated to an extent that virtually over-shadowed the influence of the major departmental chains. The market share accounted for by the major departmental chains was also found to rise following their

adoption of a product, but subsequently to decline, reflecting the increasing participation of other retail institutions in the market. The major Canadian departmental chains, thus, do appear to play a role as "gatekeeper" in the Canadian market, performing a linking role between the specialty segment and other consumers.

CHAPTER XV

IMPLICATIONS OF RESEARCH AND SUGGESTIONS

FOR FURTHER RESEARCH

The research reported in the preceding chapters has presented some revealing insights into the important role played by the major Canadian departmental chains in stimulating the flows of new consumer products into the Canadian market and in influencing the subsequent patterns of acceptance and of trade inflows of these products in Canada. It is noteworthy that the research involves a significant departure from the traditional orientation of studies designed to examine and explain developing patterns of trade between nations. Specifically, it takes as its field of study those distribution intermediaries operating within a nation which adopts a product subsequent to its original innovation in another country. Recent studies in the field of International Trade based on the Product Life Cycle concept have tended to concentrate on the changing influence of both foreign and domestic manufacturers on trade flows as a product passes through various stages of acceptance in a given market. What these studies have neglected is the considerable market power represented by firms such as the major departmental chains in Canada. These firms are capable of intervening directly in the foreign trade process by placing substantial orders with overseas manufacturers, thereby bypassing normal trade channels. In such instances the initiative for the trade process lies with the importing department store and not with the foreign manufacturer or Canadian importer. The observed capability of

major Canadian departmental chains to source products directly from foreign manufacturers offers these firms an additional advantage over and above any cost saving through direct importing. Specifically, the relationship provides the major departmental chains with quicker access to new product features which would not otherwise be available until a later date if innovation were to follow the traditional route from foreign parent to domestic subsidiary. The net effect of all this is that the major departmental chains in Canada appear to accelerate the progression of many consumer products along their life cycle in the Canadian market and in so doing, they may distort the orderly development of a Canadian-based manufacturing capability in the product. The suggestion of earlier studies in the area has been that while the first units of a new consumer product sold in Canada will likely be imported from a foreign producer, once acceptance of the product in Canada appears assured, Canadian-based production will begin in earnest. However, Canadian department stores are seen very early in a product's life cycle to seek out foreign producers offering either relatively low costs or exclusivity of product features and to source substantial quantities of the product directly from these producers. In so doing, the departmental chains substantially reduce the potential attractiveness to Canadian-based manufacturing facilities of producing the product. One reaction of Canadian-based producers to the aggressive foreign sourcing activities of departmental chains has been to forego production of a product (in effect skipping this stage completely) in favour of importing completed units from a foreign affiliate and performing a marketing function in Canada based heavily on the maintenance or creation of a manufacturer's brand name as a means of competing with private-branded direct imports of

departmental chains. In some extreme cases such as that of cassette recorders, direct importing has had such a substantial influence on the Canadian market that even a sizeable import duty has not been a sufficient incentive for a single Canadian-based facility to engage in production to date.

Implications of Research

The adoption of the particular research orientation taken in this study gives rise to a number of implications of both social and practical significance. The research should provide impetus for further study on the structure of a nation's distributive network. The important influence of major departmental chains in the Canadian market on the flow of certain categories of new products into Canada, and also on the process by which these products are subsequently diffused throughout the market, has been documented in some detail in this study. One is tempted to speculate as to the nature of the process by which new products are adopted and subsequently gain acceptance, and the source and nature of influences on trade inflows of consumer products, in those economies where retail institutions such as major departmental chains are relatively insignificant or absent. At the very least, one would expect the life cycle of any given product to be relatively retarded in such an economic setting. In addition, the lack of powerful retail institutions exerting a significant direct force on trade inflows might be expected to affect the relative importance of domestic and foreign sources of new consumer products.

In Canada as major departmental chains expand their operations to gain exposure to an even broader segment of the population and as they accumulate experience in dealing directly with overseas manu-

facturing resources, their influence on trade inflows of consumer products should further increase. Such a situation does not provide much stimulus for Canadian-based manufacturing facilities, which, apart from proximity and servicing, have little to offer a retailer who views the entire world as a potential source of its requirements. Conversely, any attempts to discourage major Canadian departmental chains in their aggressive sourcing activities would have the effect of denying a major segment of Canadian consumers quick access to new consumer products and improved product features at lower cost, features which have resulted from the active role to date of these firms in the Canadian market.

Implications of the research for managers in both the manufacturing and distribution segments are numerous. For those firms currently or potentially involved with the category of consumer products, the findings offer guidelines for the formulation of strategy and timing of merchandise activities. Consider, for example, the significance of the research to a foreign innovator. While it is tempting for such an innovator to contact immediately the major departmental chains in Canada if he wishes to gain access to the Canadian market, the findings suggest that the vast potential market and relatively few contacts represented by these firms may be misleading. First, since the tendency has been observed for the major departmental chains as a group to tend not to adopt a new product immediately, preferring to let other firms run the risk of introducing a new product into an uncertain market, the foreign innovator might be better advised to contact initially an innovative Canadian specialty retailer or importer who has access to such retailers to gain access to the market. Such a strategy would have particular validity in those cases where the

original innovator is inexperienced in the Canadian market and does not have a Canadian subsidiary with established market connections. A second reason suggested by the research for a foreign innovator to avoid the major departmental chains initially is that in exposing the product to the department stores prior to establishing even a limited acceptance for his own product in Canada, he increases the risk of having the major departmental chains seek out another foreign source which will produce a unit at lower cost or with improved features under a private brand exclusively for that department store. The situation will vary in those cases where the product is innovated by a producer with a powerful Canadian subsidiary and an established brand name in Canada. Here the marketing power represented by an established and widely accepted brand name may more than offset those advantages which accrue to a departmental chain through direct importation and the producer would be well advised to approach major departmental chains from the outset in order to achieve rapid market penetration.

The findings would suggest a different strategy for foreign or domestic producers other than the original innovator. Those manufacturers specializing in rapidly copying or adapting new products would do well to monitor the experience of innovative Canadian retailers for promising new product ideas and quickly offer a more attractively priced version of the product to the major departmental chains in Canada. Presumably, this copy of the original new product idea would be in a form which might make it more acceptable to a much larger segment of the Canadian market than the original innovation itself.

Canadian merchandisers, including retailers, wholesalers and

even manufacturers, may find in the research implications for their operations. Those firms which are concerned about risk and uncertainty associated with the addition of a new product to their line may be able to improve their confidence by systematically observing the experience of other more innovative institutions in the market which normally adopt such new products relatively early.

Perhaps the implications of the research for Canadian manufacturers are more significant than for any other group. Since the risks associated with tooling up to produce a new product for which acceptance is uncertain are much greater than the risks involved in buying a supply of the product from an existing manufacturer abroad, the speed with which Canadian departmental chains are able to pick up a new product idea and source it through a low cost foreign manufacturer may increasingly lead Canadian producers to bypass the production of a new product in favour of buying it abroad and selling it through their own distribution facilities, at least until Canadian demand enables them to justify production. Hardest hit by this tendency will be independent Canadian manufacturers, who will be at a distinct disadvantage relative to Canadian subsidiaries of foreign producers when it comes to buying completed units abroad. For those few Canadian manufacturers competing in the innovation forum who are seeking foreign markets for their products, the implications of the research are not unlike those for the foreign innovator attempting to gain entry to the Canadian market. However, the Canadian innovator faces the complication that in those markets where powerful retail institutions such as major departmental chains are not prominent, the diffusion pattern would be expected to differ markedly from the Canadian experience and

a different marketing strategy would be appropriate.

Finally, trade policy formulators and administrators may find in the research certain important implications with respect to trade in the growing category of consumer products. Since the major Canadian departmental chains are seen to exert such a profound influence on the developing Canadian trade inflows of new consumer products, then presumably their cooperation would be essential to the success of any program aimed at controlling trade inflows for such products or stimulating domestic production of consumer products. None of the five major departmental chains examined indicated a reluctance to source merchandise through Canadian manufacturers, indeed some commented on instances in which their own large orders had been responsible for setting domestic producers in motion. However, these firms are very cognizant of the importance of maintaining competitiveness in the products they handle and will not hesitate to source their requirements abroad if advantages result from such activities.

On the other hand, insofar as major departmental chains, through importing, tend to make useful new products available to a broad segment of Canadian consumers soon after their introduction, they might be encouraged to continue such activities because of the benefits to Canadian consumers. Conversely the importation of widely accepted mature products which might be displacing Canadian manufactured goods solely on the basis of lower cost might be discouraged. It is important in connection with this latter comment to point out an essential difference between the United States and Canadian trade situations with respect to consumer products. The work of Vernon and his associates has provided repeated confirmation of the observation

that the United States tends to export new products and import mature ones, largely because most consumer products are innovated in the United States market. Canada, on the other hand, has been observed to import both new products from innovating nations as well as established mature products from low-cost foreign sources. To the extent that major Canadian departmental chains are accelerating the rate at which imports of low-cost, mature products appear in Canada, they may be contributing to the current highly publicized difficulties experienced by Canadian manufacturers of consumer products. On the other hand, it might equally be argued that by importing at an early stage low-cost mature products, the major departmental chains may be sparing Canadian manufacturers the losses associated with bad short-run decisions to manufacture a product.

The primary contribution of this study may perhaps best be emphasized by reference to a statement made by Louis T. Wells in the foundation chapter of his book "The Product Life Cycle and International Trade".¹ In discussing the usefulness of various product life cycle models of trade for understanding the flows of manufactured goods across international borders, he commented:

For the advanced countries, the models offer food for thought as to what the effects of the spread of multinational enterprises might be. With the establishment of efficient information networks among subsidiaries, the gap between introduction in the first market and a second market might be diminishing.

It is to be noted that the emphasis in this statement remains with the manufacturers themselves and with their potential influence on international flows of manufactured goods. The findings of this study, however, offer powerful evidence that, in the Canadian market

the aggressive overseas sourcing activities of retail intermediaries such as major Canadian departmental chains may be at least as important a contributor to the diminishing of the gap between introduction of a new consumer product in the first market and the Canadian market.

Suggestions for Further Research

1. Due to the limitations of time and resources, this study has been restricted to examination of the process by which certain consumer product innovations were introduced to and subsequently widely accepted in the Canadian market specifically. Confirmation of the important influence of major departmental chains on trade inflows to Canada of various products raises the question of whether a similar situation exists in other national settings. An examination of the distribution structures of other nations with particular emphasis on determining the extent to which powerful institutions, comparable to the major Canadian departmental chains, exist elsewhere and exert comparable influence constitutes an appealing topic for further research. The United States market in particular with its large numbers of major regional department stores would be of particular interest if for no other reason than the fact that most consumer product innovations originate in that market. Conversely, nations such as Italy, where large department stores are known to be relatively unimportant would also make interesting topics of research for comparative purposes.

2. This study has, for reasons of data availability, been limited to products of relatively high unit value, a fact which limits the hypotheses examined. It is significant that in the course of conversation with senior executives of Canadian departmental chains, it was revealed that the extent of import involvement of these firms in certain other product areas, notably wearing apparel, was even greater than for the products actually studied. Support for the central propositions of the diffusion model would be further strengthened if the range of products examined could be extended.
3. While this study has provided a significant picture of the important influence of major Canadian departmental chains on imports of new consumer products and the pattern of market acceptance of these goods, it became apparent during the course of the research that there was a distinct lack of documented information on how large resale institutions make sourcing decisions. A detailed examination of these sourcing decision processes would provide valuable additional insights with respect to the importance and nature of the major departmental chains' influence on flows of consumer goods into Canada.
4. While this study has established that in connection with the introduction of new consumer products to the Canadian market certain retail institutions have tended to offer these products for sale prior to their adoption by the

major departmental chains, the principal focus of the research has been the departmental chains themselves. It would be useful to switch the focus and attempt to isolate the outstanding characteristics of those retail institutions in Canada which lead in the adoption of new consumer products and to establish whether there is any degree of consistency in the identity or typology of these early adopters across different products.

5. While this study has examined in detail the involvement over time with certain new products of Canada's major departmental chains in terms of their unit sales volume relative to other retail institutions and of the source of the units they have sold, no attempt has been made to investigate the effects of unit prices of the products studied. It would be most revealing to explore in detail the relationships between price of those units sold by these firms, the relative volumes sold, and the origin of the units. It is to be expected that the price factor would yield additional insights into the matter of the influence of major Canadian departmental chains on flows of new consumer products into Canada.
6. Of the eight new consumer products examined in detail in the research, only two were originally innovated by firms which did not have an established Canadian subsidiary. A particularly revealing finding of the research in this regard was that, in the cases of both these products the

rate of adoption among major Canadian departmental chains and by ultimate consumers, as a whole was observed to be significantly slower than for the other six products studied. A more comprehensive look at the rate of adoption of new consumer products in the Canadian market in the light of the extent of the original innovating company's involvement in the Canadian market at the time of the new products commercialization would be an interesting topic for further research.

7. Although this study has yielded a significant picture of the influence of Canada's major departmental chains as a combined force on developing patterns of trade inflows and on patterns of market acceptance of new consumer products, little emphasis has been placed on an examination of the consistently observed differences in characteristic patterns of behavior of the individual firms themselves. An appealing focus for additional research in this area would be the two major Canadian departmental chains which in this study consistently demonstrated more innovative behavior than the others. One objective of this additional research could be to assess the role of these firms as "gatekeepers" in the flow of new products to Canadian consumers by examining such issues as why these firms are innovators, their relative success in this role and how they make decisions about adopting and sourcing new products.

APPENDIX A

TESTS OF THE HYPOTHESES

Hypothesis I:

From the time domestic production begins, the proportion of department store unit sales of each specified product represented by imports will exceed the comparable average proportion of imports for the product sold by all other retail institutions.

Data required to test hypothesis I

For each product:

1. total unit sales by year through major department stores
2. total sales through major department stores by year of units which are imported
3. total Canadian unit sales by year
4. total Canadian sales by year of units which are imported

Form of hypothesis test

1. Import proportions for each product studied were calculated for department store sales and sales through all other institutions together and the difference noted for each year and each product. (See table 10 of Chapter XIV).
2. For each product and each year commencing from the time domestic production begins, a frequency count was made of the number of instances in which the department store proportion of unit sales represented by imports exceeded the average proportion for all other institutions.

- 3. The test of this hypothesis consisted of determining whether the number of instances for which the department store import proportion exceeded the average for all other institutions was significantly different than that which could be expected by chance.
- 4. Due to the heterogeneous nature of the data collected and anticipated differences between products, care was taken in testing this hypothesis to spot any individual products for which the import pattern deviated markedly from that of the other products studied.

Test

1. The Chi Square Test

The null hypothesis of $H_0 : n_1 = n_2$ was tested where n_1 is the number of observations for which the department store import proportion exceeds the average proportion for all other institutions. In establishing such a null hypothesis, it was argued that if there were no reason for the import proportion of the major departmental chains to be higher than that of all other retail institutions combined, then, on average, one would expect no difference in import proportion for the two groups. The alternate hypothesis is $H_1 : n_1 > n_2$.

As indicated in Table 10 of Chapter XIV there were a total of 69 years for which department store data was reported for the eight products and during which Canadian production took place. For 45 of these 69 observations,

the department store import proportion exceeded the average proportion for all other retailers and for 24 the converse was true. These observations are summarized below.

	<u>Expected frequency (E)</u>	<u>Observed frequency (O)</u>
Larger department store import proportion	34.5	45
Larger import proportion for other retailers	34.5	24
	<u>69</u>	<u>69</u>

Hence, for 1 degree of freedom:

$$\chi^2 = \frac{(O_1 - E_1 - .5)^2}{E_1} + \frac{(E_2 - O_2 - .5)^2}{E_2}$$

$$= \frac{(45 - 34.5 - .5)^2}{34.5} + \frac{(34.5 - 24 - .5)^2}{34.5} = 5.79$$

The χ^2 value for one degree of freedom and a probability of .99 is 6.63 and a probability of .95 is 3.84 which suggests that χ^2 has slightly less than 99% chance of being less than 5.79. Thus the hypothesis of equal import proportions for major departmental chains and all other retailers is rejected.

Hypothesis II (b):

With reference to relative order of institutional adoptions

- (a) major department stores will tend not to be the first firms in Canada to adopt a new product
- (b) of the several types of merchandising institutions which do adopt a new product, the major department stores will be among the earlier adopters

Data required to test hypothesis II

For each product:

1. approximate date of introduction to the Canadian market
2. approximate dates of adoption by major Canadian department stores
3. type of institution introducing the product to the Canadian market
4. approximate dates of adoption by a sample of firms from each of the six other types of institutions surveyed

Form of test of hypothesis II (b)

1. For each product, every firm reporting was ranked according to its order of adoption.
2. In addition, all adoption dates were expressed in terms of number of quarter years after the date of original introduction to the Canadian market.
3. The test of this hypothesis consisted of determining whether the mean adoption date for the five major department stores was significantly less than the mean adoption date for the sample of other retail institutions.

Test

1. One sided test for difference between means

Each of the eight products studied were tested using the null hypothesis of $H_0: \mu_1 = \mu_2$ where μ_1 is the mean adoption time for the product by the major departmental chains and μ_2 is the mean adoption time for all other types

of retail outlets handling the product. It was reasoned in establishing such a null hypothesis that if there were no reason for adoption of a new product by major departmental chains to come at an earlier time than adoption by the majority of other retail outlets, then, on average, one would expect no difference in mean adoption time for the two groups. The alternative hypothesis is $H_1 : \mu_1 < \mu_2$

Table 16 indicates the sample mean adoption time (in years) and sample variances for both the major departmental chains and the mail survey respondents. Also indicated are the corresponding "t" statistics and degrees of freedom for each product. At a 5% significance level the null hypothesis of equal mean adoption times is rejected in every case except those of color T.V. and metal skis.

Hypothesis III

The adoption pattern of new consumer products in the Canadian market will tend to exhibit the following general characteristics:

- a) the period ending with adoption of a new product by the last of the major Canadian department stores will be followed by a period of significantly more rapid growth in total Canadian unit sales
- b) from the time of adoption by the first of the major Canadian department stores, the retail market share (in units) accounted for by these firms will first rise to a peak and subsequently decline

Data required to test hypothesis III

For each product:

1. approximate dates of adoption by each of the major Canadian department stores
2. total Canadian unit sales by year
3. total unit sales through the major department stores by year

Form of test of hypothesis III (a)

1. For each product, the average annual rate of growth in Canadian unit sales was calculated for the year (or years) during which the major department stores adopted. Where the period from the time of adoption of the first major department store until the last spanned more than one year, the average growth rate for the period was calculated.
2. For each product, the average annual rate of growth in Canadian unit sales was calculated for the two years immediately following adoption by the second last of the major department stores and the average for these two years calculated.
3. The test of this hypothesis consisted of comparing the average annual growth rate for the period during which each of the major Canadian department stores adopted a new product to the rate for the immediately subsequent two year period to determine if the latter was significantly greater.

TABLE 16

MEAN ADOPTION TIMES OF MAJOR DEPARTMENTAL CHAINS
AND MAIL QUESTIONNAIRE RESPONDENTS

	Mean adoption time of major departmental chains (number of years after first introduction)	Mean adoption time of respondents in mail questionnaire	t	df
Dishwashers	13.4	20.2	t=3.19	df=8.0
Twin tubs	1.15	2.90	t=2.62	df=7.1
Color T.V.	8.95	10.40	t=1.26	df=7.1
Cassette Recorders	1.8	3.20	t=2.19	df=6.1
Console Stereos	1.75	5.1	t=5.85	df=20.6
Super 8 Movie Cameras	.35	1.60	t=3.11	df=7.4
Hard Shell Hair Dryers	.5	3.10	t=5.89	df=6.0
Metal Skis	8.85	13.30	t=1.46	df=7.2

APPENDIX B

THE MAIL QUESTIONNAIRE SURVEY

Questionnaire Design

In designing a questionnaire for distribution to a sample of Canadian retailers, a number of objectives were considered. First, it was deemed desirable to restrict the complete questionnaire to a length such that it could be completed within a few minutes by the respondent. Second, it was felt that the content of the document should be sufficiently straightforward that it could be completed by a single individual, knowledgeable about his firm's merchandising activities, with a minimum of recourse to the advice of others in his company or to other sources of information. Both these requirements were felt to be essential if the response rate was to approach an acceptable level.

In addition to these practical considerations, there were other objectives which the questionnaire was designed to fulfill. One of the more important functions of these was to provide a distribution of the dates of adoption of each of the nine products by a sample of the other major types of retailers in Canada which handled each product. Such a distribution would provide a basis of comparison to the time at which the major department stores adopted each product so that statements could be made as to the relative order of adoption of various types of institutions. It was also hoped to gain an impression of each retailer's perception of the earliness or lateness of the time at which his firm actually adopted each product relative

to other types of distributive institutions. A related objective was to obtain each retailers impression of the level of market acceptance attained by each product at the time it was adopted by his firm. A third important objective which the questionnaire was to fulfill was to provide insight into the new product strategies of a sample of Canadian retailers of the products under study. Included in this objective were an examination of the experience of each retailer sampled with respect to:

- (i) the extent and nature of the firm's search for new products with potential for addition to the existing product assortment
- (ii) the principal sources of information about the specific new products under study which were employed by the firm
- (iii) the identity of other types of distributive institutions whose experience with each new product the firm observed prior to adopting themselves.

And finally, it was hoped to determine to what extent those retailers in the sample observed the assortments of other types of distributive institutions in Canada or abroad as a source of new product ideas in general. Such information would provide further insight into the issue of whether or not major department store chains in Canada influence the adoption processes of other types of distributive institutions.

Questionnaire Development and Pretesting

An original draft of a questionnaire incorporating all of these

objectives was developed and revised on the basis of comments by various individuals including retailers. The form and content of subsequent drafts was also highly influenced by a group of experts in questionnaire design from Canadian Facts Ltd. When the questionnaire was sufficiently modified, it was distributed by mail to a test sample of 20 retailers in the city of London to assess its likely success on a national scale. The test mailing was followed by a number of additional minor revisions before the questionnaire was deemed ready for the main sample mailing.

Sample Selection

In selecting a sample of retailers to be surveyed, several options were available. These alternative sources were evaluated on the basis of certain requirements which the sample was expected to meet.

Of primary importance was the requirement that the population of retail firms from which the sample was to be drawn should include as many as possible of those retailers in Canada who currently handle or have handled the nine products under examination in this study. This requirement necessitated a virtually complete listing of all retail firms in Canada according to the types of products they handled. As the Dominion Bureau of Statistics was known to publish a quinquennial census of Canadian retail trade, based on an exhaustive enumeration of retail establishments in Canada, it was decided to utilize such a source if possible. The Dominion Bureau of Statistics kindly consented to provide access to the enumeration sheets of the 1966 census.

The enumeration of Canadian retail trade in the census of 1966 listed 135,833 separate establishments. However, the majority of these

establishments were of limited relevance to this study insofar as they handled none of the products under examination. Fortunately, the complete list of retail establishments was separated into categories according to the types of products they handled. Thus it was possible to eliminate from the population all those establishments which did not deal in the nine products being studied. In addition, there were a large number of categories of retail establishments which did offer for sale one or a few of the products being studied but which collectively accounted for such an insignificant proportion of the total Canadian sales of these products that it did not warrant including them in the sample. In fact, it was found that only nine categories of retail establishments including a total of 7,450 establishments accounted for well over 80% of the unit sales of all but one of the products studied. The exception was the hard shell bonnet type electric hair dryer which is sold through an enormous variety of retail outlets. Nevertheless, nearly two-thirds of total hair dryer sales were believed to be accounted for by the nine categories of retail establishments referred to above.

In order to ensure an equitable representation of retail establishments from each of the nine categories, it was decided to draw separate samples from each category. The number in each sample was determined through a weighting of the total number of establishments in the category by the relative volume of sales in the nine products being studied done by firms in the category. The number of establishments in each category and the corresponding sample size selected are indicated in the following table:

TABLE 17

Sample Sizes For The Retail
Establishment Categories Selected

	<u>Total Number of Establishments In Category</u>	<u>Sample Size</u>
Department Stores	87	34
Furniture Stores	1,891	45
Household Appliance Stores	916	30
T.V. Sales and Service Stores	700	25
Furniture, T.V., Radio and Appliance Stores	940	74
T.V., Radio, and HiFi Stores	704	31
Floor Covering, Curtain and Drapery Shops	855	43
Sporting Goods Stores	1,071	41
Camera Stores	286	37
	<hr/> 7,450	<hr/> 360

Because of the relative importance of the department store category in sales of all nine products, it was decided to sample this category exhaustively. Although there were eighty-seven establishments listed in the department store category for 1966, there were in fact fewer than 40 separate entities. All of these were sent copies of the questionnaire. In all the other cases, random samples were drawn from the category.

Since the lists of establishments used as the basis for the sample had been prepared in 1966, it was anticipated that some might have discontinued operations in the interim between 1966 and late 1970. One obvious advantage of utilizing a list of establishments compiled in the mid 1960's was that the possibility of including in the sample

newly-formed firms did not exist. Clearly the inclusion in the sample of firms which only came into existence substantially after the date at which a product was introduced to the market, and hence, were unable to adopt the product, earlier, would have the effect of biasing the distribution of adoption dates. Before the final sample could be prepared, it was necessary to confirm the existence in 1970 of establishments listed in the 1966 enumeration. This was done using current city directories and telephone directories of the cities and towns in which the various establishments were located. The final list of 360 firms from the nine different categories comprised the sample of retailers to which the questionnaire was sent. The original mailing was followed up with a reminder to those in the sample who had not returned a completed questionnaire within four weeks after it had been sent to them.

Questionnaire Return Rates

Of the 360 questionnaires mailed out, 106 were returned completed, and an additional 25 were returned incomplete for a variety of reasons. Some of the firms no longer were in existence and their questionnaires were returned unopened. Other firms reported that they did not currently stock and had never stocked any of the nine products under examination and thus were unable to complete the questionnaire. Still other questionnaires had to be discarded because the questions had been answered incorrectly.

While the gross response rate for the total sample was in excess of 30%, response rates within the various categories of retail establishments varied considerably. At one extreme the Department Store

and Household Appliance Store categories recorded response rates of well over 50%. The corresponding rates for Sporting Goods Stores, T.V. Sales and Service Stores and Floor Covering, Curtain and Drapery Shops were less than 30%. It is felt that response rates were particularly low in these categories because most of the establishments included handled only one of the nine products, and thus did not feel the questionnaire "applied to them". In the case of T.V. Sales and Service Stores, there was also evidence that the existence of many firms which engaged exclusively in servicing and did not sell new units further contributed to a low response rate for that category.

If the sample is divided into categories according to the population density of the area in which each establishment is located, it is found that nearly 49% of the establishments are located in Canada's nine largest population centres. An additional 23% of the establishments in the sample are located in population centres of more than 50,000 inhabitants but fewer than 300,000. The remaining 28% of the sample are located in areas with a population of less than 50,000. While the gross response rate in all three categories of the sample was virtually identical, it was noted that a disproportionately large number of the questionnaires which could not be delivered and were returned unopened were destined for establishments located in centres with fewer than 50,000 inhabitants.

APPENDIX C

NEW PRODUCT SURVEY

In answering some of the following questions you may find it helpful to talk to other members of your company or check company records. . . please do so as we would like to receive as accurate information as possible. Questions 2, 6 and 10 require the use of the enclosed answer card when answering them.

1. Listed below are nine different consumer products. Under column (a), for each item listed, please check one of the four boxes to indicate whether you have ever stocked this item or whether you are planning to stock it. Then under column (b), for each item you presently stock or stocked at one time, please write in the year your firm first offered the product for sale, and then check one box to indicate in which part of the calendar year this occurred.

	(a) Ever stocked or are planning to stock?				(b) When did your firm first offer this item for sale?				
	Currently Stock	Have Stocked but not Currently	Do not Stock, but Plan to do so	Do not Stock and have No Plans to do so	Year	Quarter in the Year			
						1st	2nd	3rd	4th
Electric dishwashing machines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19__	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Twin-tub washers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19__	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Console stereo record players	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19__	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color television	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19__	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cassette tape recorders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19__	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Electric hair dryers (bonnet type)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19__	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Super 8 movie cameras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19__	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Needle-punched carpeting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19__	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metal skis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19__	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Please check one box below to indicate which type of store best describes your firm. Use the enclosed answer card in order to get a precise definition of each type of outlet.

Independent Specialty Retailer	<input type="checkbox"/>	Discount Store	<input type="checkbox"/>
Regional Specialty Chain	<input type="checkbox"/>	National Department Store Chain	<input type="checkbox"/>
Regional Department Store	<input type="checkbox"/>	Importer/Wholesaler/Distributor	<input type="checkbox"/>
National Specialty Chain	<input type="checkbox"/>	Other (What?) _____	

3. In what year did your company first begin operations? 19__

4. How did your firm first become aware of each of the items below which you currently stock or have stocked at one time or another? Please answer by writing in, opposite each of the products listed, the number of the *one* statement below that best describes how your firm first became aware of the product.

- 1 - Through a *systematic and formal* program we follow to find new products to add to our merchandise assortment.
- 2 - Through a *constant but informal* search to find new products to add to our merchandise assortment.
- 3 - From a presentation by a sales representative of a manufacturer or distributor of the product.
- 4 - None of the above.
- N - We have never stocked this item.

Electric dishwashing machines _____

Twin-tub washers _____

Console stereo record players _____

Color television _____

Cassette tape recorders _____

Electric hair dryers (bonnet type) _____

Super 8 movie cameras _____

Needle-punched carpeting _____

Metal skis _____

5. Now, please think of the market development for each of the products below which you currently stock or have stocked at one time or another. Then, opposite each product, write in the number of the statement below (*one only*) that best describes the stage of the market at which you first stocked the product.

- 1 - We were one of the first firms in Canada to make this product available.
- 2 - We were one of the first firms in our city or trading area to make this product available.
- 3 - We added this product to our assortment as soon as possible after it had been introduced in the area by other selling outlets.
- 4 - We added this product as soon as it showed promise of gaining wide acceptance among consumers in our market.
- 5 - We added this product only after it had demonstrated general acceptability among consumers in our market.
- N - We have never stocked this item.

Electric dishwashing machines _____

Twin-tub washers _____

Console stereo record players _____

Color television _____

Cassette tape recorders _____

Electric hair dryers (bonnet type) _____

Super 8 movie camera _____

Needle-punched carpeting _____

Metal skis _____

6. Under column (a) below, check one box opposite each product to indicate whether you believe any other firm in Canada stocked this item *before your firm*. (There is a box to check if your firm has never stocked this item.) Then, under column (b), for each product that was offered for sale by some other firm in Canada before your firm offered it, please indicate what type of firm this was. Use the list of types of firms on the *answer card enclosed with the questionnaire* as a guide and write in the number of the type as listed on the card.

(a) Did some other firm in Canada offer this product for sale before your firm?

	Yes	No	Don't Know	Never Carried Them	(b) If yes, what type of firm(s)? (see answer card)			
Electric dishwashing machines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	_____
Twin-tub washers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	_____
Console stereo record players	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	_____
Color television	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	_____
Cassette tape recorders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	_____
Electric hair dryers (bonnet type)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	_____
Super 8 movie cameras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	_____
Needle-punched carpeting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	_____
Metal skis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	_____

7. Now we would like to know how your firm first learned about each of the products below which you currently stock or have stocked at one time or another. From the list of different sources provided below, please write in the number of the *one* source from which you *first* learned of the product.

- 1 - Trade publications
- 2 - Trade shows and expositions
- 3 - Buying houses or associations
- 4 - Buying trips abroad
- 5 - Buying trips within Canada
- 6 - Conversation with representatives of other retailers or wholesalers
- 7 - Sales representatives of manufacturers or distributors

- 8 - Observation of merchandise offered by other firms in Canada
- 9 - Observation of merchandise offered by firms abroad
- 10 - Promotional direct mailings
- 11 - Conversation with people who had already purchased the product elsewhere
- 12 - Other source (please write in)
- N - Never stocked this item

Electric dishwashing machines _____
 Twin-tub washers _____
 Console stereo record players _____
 Color television _____
 Cassette tape recorders _____

Electric hair dryers (bonnet type) _____
 Super 8 movie cameras _____
 Needle-punched carpeting _____
 Metal skis _____

8.(a) Does your firm observe the product assortments of other selling outlets within or outside Canada as a potential source of new product ideas? Please answer separately for each column opposite.

Observe Firms Within Canada?		Observe Firms Outside Canada?	
Yes	No	Yes	No
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(b) For each 'yes' above, write '1' beside the type of firm below that you observe most closely, '2' beside the type you observe second most, '3' beside the next and continue until you have a number opposite each type of firm you observe. Be sure to answer for each 'yes' in 8.(a).

Independent specialty retailer	_____	_____
Regional specialty chain	_____	_____
Regional department store	_____	_____
National specialty chain	_____	_____
Discount store	_____	_____
National department store chain	_____	_____
Importer/wholesaler or distributor	_____	_____
Other (please write in what)	_____	_____

9. After learning of a new product, what are the major sources of information about the product that your firm uses to help in deciding whether or not to add it to your existing merchandise assortment? Please write all the major sources your firm uses in the space below.

10. For each of the products listed below please indicate under column (a) whether your firm, either formally or casually, investigated other selling outlets experience with the product before deciding to accept or reject it. Then, for each product that your firm did investigate in other sales outlets, indicate under column (b) the type of firm whose experience you emphasized most and second most. Please use the store type descriptions listed on the answer card when answering (b), writing in the number of the appropriate store types. If your firm checked only one type of store, write in "N" under "second most".

	(a) Formally or informally investigated other stores experience with this product before deciding?			(b) Type of firm whose experience was emphasized?	
	Yes	No	Don't Know	Most	2nd Most
Electric dishwashing machines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
Twin-tub washers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
Colsole stereo record players	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
Color television	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
Cassette tape recorders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
Electric hair dryers (bonnet type)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
Super 8 movie cameras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
Needle-punched carpeting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
Metal skis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____

APPENDIX D

MEASUREMENT OF VARIABLES

The measurements used in testing the hypothesized relationships were as follows:

1. Proportion of unit sales represented by imports.

In a given period, total unit sales of imported versions of a product by each of the large department stores surveyed were expressed as a fraction of their aggregated unit sales of both domestic and foreign-sourced versions of the product. In addition, an aggregate proportion for the large department stores combined was calculated. The identical proportion was determined for the group composed of all the remaining institutions.

2. Time of adoption

Each of the major department stores surveyed indicated that point in time at which they first offered for sale each of the products. The time of first sales offering for each product was also determined for all the other institutions surveyed through the mail questionnaire.

3. Retail market share

Annual unit sales of each product for each of the major department stores surveyed was expressed as a percentage of total Canadian unit sales for the corresponding year. The aggregate of unit sales across all the major department

stores expressed as a percentage of total Canadian unit sales was also calculated. The magnitude and direction of change in percentage was noted for each product from the time of its adoption by the major department stores.