

**THE SERVICE SECTOR
IN
THE CANADIAN ECONOMY:
GOVERNMENT POLICIES FOR
FUTURE DEVELOPMENT**

by

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EXECUTIVE SUMMARY

This report has been prepared in the belief that public policies, if they are to be beneficial, must be firmly based on an understanding of the long-term evolution taking place in the Canadian economy. Short run changes, like the waves on the ocean, tend to accumulate over time to produce a type of tidal action which may be fundamentally changing the structural character of the Canadian economy. It is unrealistic to think that this report alone can document the nature and movement of the structural changes thought to be taking place in the economy. However, we hope it will be a useful contribution to the process by which better theory and more effective public policy are produced.

The report covers a wide variety of technical issues, but essentially we develop two major themes. The first theme is based on the observation that the creation of income and wealth in the economy is now more dependent upon human capital than physical capital, or nature's endowment of resource capital. This transition in thought towards the fundamental importance of the skill, dexterity and knowledge base of the population has profound ramifications on many aspects of public policy, but especially the set of policies related to social and educational concerns. Issues such as "lifelong learning"; labour management cooperation on career development; attachment to an organization;

the desirability of portable pensions; the equity, efficiency and ease of administration of the tax system; and the system of transfer payments to maintain a fair distribution of income, wealth and leisure are important policy dimensions of this first theme.

The second theme builds on the symbiotic relationship between the growth of the service sector, especially producer services, and the organization of the nation's goods producing sector. Although the more important direction of causation is not clear at this time, it is, nevertheless, apparent that changes in the country's industrial organization will influence the demand for producer services; and increasing specialization and economies of scale in the production of service sector inputs can in turn influence the industrial structure. This two-way relationship between producer services and industrial organization highlights the need to better understand the role of transaction and adjustment costs in business enterprise control and coordination; the increasing demand for more product variety on the part of consumers; the operation of agglomeration economies in large urban centres; the measurement of productivity changes in the service sector; the possibility of service sector exports in an environment dominated by global corporations and affiliate relationships between domestic and foreign firms; and the operation of a "product cycle" for service inputs which parallels the product cycle for goods.

A common issue which is critical to both themes is the need for improved service sector statistics, not necessarily based on national accounting definitions. Improved statistics at both the domestic and international levels are required as a precondition to enlightened policy making.

Based on informal, but informed observation, or formal statistical analysis, we believe that both horizontal (macro) policies and sectoral (micro) policies have been primarily designed with the agricultural and the goods producing sectors in mind. The intellectual transition towards understanding the anatomy of the service sector is an important and overdue exercise.

1. OVERVIEW OF THE SERVICE INDUSTRY

1.1 Definition of the Service Industry

Nearly every author who has attempted to define the "service industry" concludes that it is a very amorphous and ambiguous concept. Attempts to identify the important dimensions along which a suitable definition can be built produce many similarities, but are often influenced by the ultimate points the author wishes to make. (See Appendix A, Tables 1 and 2, for a listing of the various definitions used in the most recent Canadian and U.S. studies.) The majority of the studies reviewed to date do not venture very far from the conventional national accounting logic that defines services as a residual. In other words, in these studies service sector output is the output which does not come from any of the goods producing sectors -- agriculture, mining, manufacturing and construction. However, even this definition of services as a residual is not without problems. For example, coal mining can be considered a service activity in the sense that nature has *produced* the coal, and man simply adds a transportation service by moving the coal from below ground to locations where it can be consumed.

Nevertheless, several authors have attempted to add some precision to the definition of the service sector, by working with the Standard Industrial Classifications (SIC), but reorganizing them into the following groups:

1. distributive services composed of wholesale and retail trade;
2. communications, transportation and public utilities;
3. producer services such as accounting, legal council, marketing, banking, architecture, engineering and management consulting;
4. consumer services such as restaurants, hotels and resorts, auto repair facilities, laundry and dry cleaning, amusement and recreation services;
5. non-profit services related to health, education and welfare;
6. government services such as public administration and national defense.

Others, instead of working with industrial classifications, have opted to classify services by means of the Standard Commodity Classifications (SCC). Broad classifications based on SCC definitions are:

1. services directly related to people;
2. services for the propagation and care of plants and animals;
3. services related to land, water, air and minerals;
4. services related to buildings and other fixed assets;
5. services related to the manufacture and marketing of goods, except transportation services;
6. transportation services;
7. services related to records and information;
8. services of general application.

In addition to these classification schemes based on the SIC and SCC systems, other authors have suggested classifications based on some supposed unique characteristic of service sector activity. Some of the many suggested schemes are:

1. classification based on the degree of product durability - services are viewed to be nondurable, intangible assets which cannot be stored or transported, and thus must be produced in close proximity to the consumer;
2. classification based on the observation that goods industries transform some basic raw material into a different form of higher value added, while services take a pre-existing product and merely change its location (transport), its physical appearance (packaging), or its eventual disposition (wholesale and retail trade);
3. classification based on the relationship between goods and services.

Because this last suggested *ad hoc* classification system appears to have more merit than any of the others, it is worth discussing in more detail. *The Task Force on Trade in Services: Background Report* (1982) uses the GATT Secretariat Study to categorize services according to their relationship to the goods producing industries. This classification scheme recognizes the critical interrelationships which exist between these two sectors of the economy, and is closely based on accepted economic theory, specifically the system of prices and markets. The suggested categories are:

1. services which are embodied in goods such as sound recordings, motion picture films and computer tapes;
2. services which are complementary to goods such as transportation and transportation services, banking, finance, insurance and advertising;
3. services that may substitute for local goods production such as franchising, chartering and leasing;
4. services which are produced without a relationship to goods production such as legal, medical, telecommunications, data processing and information services.

We will not attempt to add to this already exhaustive list of possibilities, but will, instead, focus the discussion by noting that two aspects of service appear to be more important than any others. The first is whether or not the service output being produced is purchased to satisfy a final demand, or as an intermediate input into the production of some other service or non-service output. Of equal importance is the sector of the economy from which the service demand originates, i.e. profit sector or the not-for-profit sector, composed of non-profit institutions and the government. Thus, in Figure 1 below, service industries may be assigned to one or more of the demand categories.

FIGURE 1*CLASSIFICATION SCHEME FOR SERVICE INDUSTRIES*

	Business	Household	Non Profit Institutions	Government
Final Consumption	a	b	c	d
Intermediate Consumption	e	f	g	h

Our primary interest will be with service industries in cells "e" and "f", with primary focus on entries in cell "e" of the matrix. Several authors (see Stanback (1981) and Greenfield (1966)) estimate that 25% of (U.S.) GNP originates in the production of intermediate producer services for use in the profit sector of the economy. This is the same percentage share of GNP generated by the physical production of manufactured goods. In addition to its obvious importance in terms of GNP, the maximum scope for government action lies in influencing the terms and conditions under which Canadian service firms sell services to third parties.

1.2 Statistical Measures of Service Sector Growth:

Canadian data on service sector growth has been produced by the Economic Council of Canada (1978), Sundar Magun (1982), and

the Department of Regional Industrial Expansion (1983). We have not attempted to replicate this statistical work, but one important point should be noted. The Canadian and American studies on this topic all point to a dramatic increase in service industry employment, with the majority of the shift coming in the three decades after the end of World War II. However, when service sector output is measured over time as a proportion of constant dollar gross national product, the same dramatic shift towards the service sector is not noted. The most likely reason for this situation is that productivity rates in the service sector have lagged behind the productivity increases measured in the goods producing sector of the economy. Thus, over time, it takes relatively more labour to obtain a unit of output in the service, in comparison to the goods producing sector. There are several other statistical issues related to the concept of productivity in the service sector of the economy which will be discussed in Section 1.3.2. However, the important point to note at this point is that service industry employment has spiraled since the end of World War II, but productivity rates have not.

When the relative importance of the service sector, in comparison to the goods producing sector, is made in terms of shares of current dollar gross national product, a situation closer to that noted for employment emerges. In 1982, the service sector employed 68% of current dollar gross national product. This disparity between the employment and gross national product figures most likely is a reflection of the different types of labour

employed in these sectors. There are two forces at work here. The first is related to the not-for-profit sectors of the economy (non-profit institutions and government). While we have no suitable wage and compensation data for this sector, it may be presumed that the not-for-profit sectors are more prominent in the economy as a share of employment than as a share of gross national product because of the large number of relatively low-paid employees. However, the producer service sector is likely to have exactly the opposite relative contribution to employment and gross national product shares. Producer services employ many highly paid technical and managerial employees whose contribution is more to gross national product than to employment figures. On balance, it may be hypothesized that the characteristics of the not-for-profit sector dominate those of the producer service sector, but this conjecture has not been proven or disproven by suitable data.

1.3 Explanations for Service Sector Growth:

It is our belief that public policies applicable to the service sector must be rooted in a solid understanding of the structural changes presumed to be taking place in the economy. Existing Canadian data bases preclude an adequate treatment of the issue, but several authors have offered suggestions, sometimes supported by statistical analysis.

1.3.1 Increased Final Demand for Services:

The first possible explanation for the shift towards increased employment in service industries is that the consumption preferences of Canadians have shifted towards service sector outputs. This "tilt" towards increased final demand for services would occur because of a decline in the price of services relative to manufactured goods, a high income elasticity for services, or a shift in tastes towards the consumption of more service sector output. Victor Fuchs (1968), Sunder Magun (1982) and the Economic Council of Canada (1978) all examine these possible explanations. Measurement problems abound, and research methodologies differ, but in general the data will not support the conclusion that there has occurred a shift in consumer demand towards services. The reasoning for this conclusion rests on the offsetting relationship between substitution and income effects in demand theory, but will not be developed any further in this Report. The interested reader is referred to Magun (1982).

1.3.2 Slow Rate of Productivity Growth in Services:

Section 1.2 briefly introduced one possible explanation for the spectacular growth in service sector employment after World War II -- the observation that output per employed worker has grown much more rapidly in the goods sector than in the service sector. Because of the different rate of productivity growth between the two sectors, the service sector has been able to create more employment opportunities per unit of output produced, and as a result, is more labour intensive than the goods industry.

The Economic Council of Canada in its report, *The Bottom Line* (1983), Magun (1982) and Victor Fuchs (1968) all present preliminary evidence on the issue of productivity in the service sector. Research methodologies, and the time periods used, differ, but the basic pattern emerges that output-per-person grew fastest in the agricultural sector (3.4%), followed by the industrial sector (2.2%) and slowest of all in the service sector (1.1%). Here we quote American data presented by Fuchs (1968), and collected over the 1929/65 period.

When productivity is measured as output-per-person, it becomes clear that output in the service sector -- more than the agricultural and industrial sectors -- is much more difficult to measure. The output of a physician or an accountant is generally measured in terms of visits per period of time, even though one

visit may be very different in terms of its output characteristics from any other. In his study, Fuchs (1968) partially avoided this problem of service output heterogeneity by excluding the output from government, households and institutions and real estate which he considered to be the most difficult cases.

It should be noted that this problem of output heterogeneity is conceptually no different from the problems encountered in measuring output in some of the goods producing sectors of the economy. For example, the output from one segment of the construction industry may be measured in terms of square meters, even though some space can have a very different vector of characteristics -- location to downtown, view, etc. -- in comparison to the others. Also, in measuring the output from the transportation industry, ton-miles is the usual output measure even though one ton mile may be very different from another. For example, ton-miles that are produced as less-than-truckload shipments on short distance hauls are very different (in terms of unit costs) from ton-miles produced as full truckload shipments on long hauls. Where sufficient data on output characteristics exists, modern statistical techniques of hedonic output can be used to standardize output produced by different production technologies. However, even if the paucity of data precludes the use of this technique for the micro studies of the service sector, the logic of using techniques to correct for the heterogeneity of service sector output will remain important. Whether the output standardization can be done statistically, or simply intuitively, depends upon the availability of data.

A second issue in the general area of service sector productivity -- not related to the problem of output heterogeneity -- is the importance of the consumer as a cooperating agent in the production process. Traditionally, productivity increases occur by means of standardization and routinization in which the production process uses more capital equipment to eliminate the routine and rote operations. However, for many services, production requires an interactive process with the consumer at the time of production and sale. In these service industries, productivity increases are dependent on the knowledge, experience and motivation of the consumer. | Because service output cannot be stored, and is thus sold directly to individuals at the time of production, it stands to reason that honesty and exact reporting on the part of the consumer can increase productivity. Good examples here are in the medical and legal fields, especially the diagnostic aspect of the work, retailing and education.

It is difficult to generalize on this issue of possible routinization and standardization of service sector output. With the advent of automated and computer based technologies, the major functions of planning, product development, production supervision, capital allocation, purchasing and management can be split from the physical production stage, and centralized in head offices. This leaves the physical production to be franchised out to small scale domestic producers (fast food, convenience stores, etc.), or sent abroad (textile production). Thus, the practical importance of this issue service output routinization and standardization must be established on a case by case basis.

The third productivity issue rests on the observation that, opposite to the situation in the manufacturing sector, labour is the fixed factor of production, and capital the variable one. This implies that for service sector output, technological changes will be disseminated through the economy by adding more "human capital" to the stock of service sector labour. It is the labour stock which embodies the advances in technical knowledge -- for example better trained doctors, consultants who are familiar with the most recent planning techniques and suppliers of transportation services who are familiar with modern fleet management techniques. The policy implications of this observation will be drawn out later in this Report. However, for now note that if the service sector has an inflexible labour structure, i.e. employees remain with an organization for long periods of time due to formal legal contract, or the operation of labour search costs, then society will not experience the rapid pass through of the benefits of new human capital. (In the service sector, it is the expansion of knowledge, skills, imagination, ideas and insights of workers that creates more output, income and wealth. Growth in the future will depend more on human capital formation than on physical capital.

1.3.3 Increased Intermediate Demand for Services:

A third possible explanation for the growth in service sector employment rests on the hypothesis that the level of intermediate service inputs into goods production has increased over time. This may be due to a shift in the production processes for goods towards hiring more service inputs, or merely a statistical artifact in that more industries are purchasing service inputs from specialist firms (contracting-out) rather than supplying the service from "in-house" production.

Tests of this hypothesis based upon input-output tables reject the concept that there has occurred an increased intermediate demand for services. Magun (1982) shows that service inputs as a percentage of total inputs absorbed by the goods sector of the Canadian economy has increased only from 20.9% in 1969 to 21.9% in 1979. Victor Fuchs (1968) using American input-output information from the years 1947 and 1958 concludes that less than 10% of the shift towards increased service sector employment is explainable by this factor.

However, despite the tentative rejection of this hypothesis based on input-output methodology, it remains an intellectually appealing explanation that increased specialization and division of labour in the economy is the major driving force behind the growth of service sector employment. The classical explanation for a move towards the existence of specialized firms providing

services which were formerly delivered within the firm rests with Stigler's (1951) analysis of the rise of producer service firms. This pioneering work has been extended in recent years by researchers investigating the factors which influence the rise of the modern corporation, especially the role which transaction and information costs play in organization theory. For example, see Williamson (1981). Also, the recent theoretical work by Lancaster (1979) on variety, equity and efficiency, while not directly targetted to the service sector, is nevertheless a very important contribution to this topic.

As an indication of the importance we attach to this topic, Chapter 2 develops the major issues in considerable detail. However, because of the difficulty in understanding the complex set of transformations operating on the production side of the service economy, we will develop some of the more important themes in the remainder of this section.

The essential feature of Stigler's analysis is the recognition that many diverse activities -- each with its own cost function -- make up a firm's production and organization activities. Some costs increase with output, others are relatively constant, while still other costs may decrease with expansions in output. Stigler argues that the extent to which activities can be contracted out to specialist firms is limited by the size of the market. The firm must perform these functions itself when the level of overall market demand is insufficient to support the existence of specialized firms. However, when the activity is subject to

decreasing costs as industry output expands, the possibility exists that separate, specialized, producer service firms can exist. In other words, the faster that service costs decline with output, the more likely is it that the existing level of demand will support the creation of separate service firms. It is primarily the existence of economies of scale in the production of certain activities which gives rise to the birth of a specialized service sector industry. Stigler proceeded to note that the service functions are more likely to be provided within the firm when they are complementary to some other necessary activity. Complementary activities are essentially "joint products" in which the two (or more) together can be provided more cheaply than each separately. Thus, the firm has a natural inclination to retain complementary activities within the firm in order to minimize the total costs. In summary, it is these two dimensions of cost -- economies of scale in the production of services and complementarity -- which jointly determine which activities of a firm are more likely to be contracted out to independent service bureaus.

Subsequent authors have built on these cost explanations by emphasizing the role of other factors, in addition to costs. For example, the frequency of demand for services may also influence the rate at which an independent service sector is created. Services which are only required infrequently by the organization, for example highly specialized legal services, will not be candidates for internalization. Thus, it follows that in addition to

the explanations of economies of scale and complementarity, we must add the observation that infrequently demanded services are more likely to be supplied externally.

Other authors have emphasized the importance of firm size, in determining whether service inputs will be supplied internally or purchased externally on the market. These authors argue that the origin of a service input industry can be found in the operation of specialized personnel services within large firms. Initially, only the largest organizations can justify maintaining a specialized service input division. However, over time this service division goes through the usual process of routinization of its production process, and standardization of its (service) output to achieve productivity advances. When this, now standardized and routinized, service output is combined with some entrepreneurial talent from both inside and outside the firm, the result is the birth of a service sector. The output of the new externalized service industry will be purchased by both large and small firms due to the productivity advances made possible by routinization and standardization. ||The essential point is that the process begins in large firms, and with the specialization of internally provided services. It is specialization in large firms rather than economies of scale which is seen as the driving force towards externalization.

A final set of testable hypotheses concerning the issue of internal versus external provision of service inputs builds on the work of Williamson (1981). This literature emphasizes the

role of transactions costs in terms of the organization and design of institutions. The decisions between in-house and out-of-house production is seen to depend upon the *ex ante* costs of negotiating and writing contractual agreements, as well as the *ex post* costs of executing, policing and (if necessary) arbitrating the contracts. This is a particularly complex literature which, nevertheless, has a tremendous contribution to make to this topic. Some major aspects and potential research avenues are developed in the next Chapter.

2. INCREASED INTERMEDIATE DEMAND FOR SERVICES

2.1 Introduction:

Chapter 1 suggested that one important (if partial) explanation for the growth in service sector employment rests on the hypothesis that the level of intermediate service inputs into goods production has increased over time. As was discussed, this may be due to a shift in the production processes for goods towards hiring more service inputs, or merely a statistical artifact in that more industries are purchasing service inputs from specialist firms (contracting-out), rather than supplying the service from "in-house" production. The present section proposes an analysis of these hypotheses and suggests a slightly different way to look at the growth of the producer service sector.

2.2 Producer Services - Definition:

Almost everybody agrees on a definition of this category of services along the lines expressed by Greenfield (1966):

"Producer services are those services which business firms, non-profit institutions and governments provide and usually sell to the producer rather than to the consumer."

Not everyone agrees, however, as to what services should be included in that definition. Most authors include in their list

Financial Services, Real Estate, Insurance, Consulting Services (such as engineering, architecture, management consultants and other professional and technical services), legal counsel and marketing services. The point of contention lies with services such as Transportation, Communication, Wholesale and Retail Trade. These are included as legitimate producer services by some authors, but designated as Distributive Services by others (Ginzberg and Votja, Singleman and Stanback). This later group of authors implicitly treat these activities as independently motivated rather than as reflecting a derived demand for inputs into some other production process.

For the purpose of the following discussion we will include Distributive Services within the category of producer services, and will include also Miscellaneous Services, embracing activities such as janitorial work, construction, telephone answering etc...

2.3 Growth of Producer Services:

Greenfield (1966) is one of the first authors who recognized the importance of producer services as a source of growth in the economy. This growth, due partly to innovations in communications, managerial methods, and new technology -- in particular computer technologies -- has been very rapid, with an average growth rate greater than that of most other economic activities (Cossette 1982). Growth has been particularly rapid in activities such as management consulting, accounting, legal services, engineering firms, computer services, office equipment rental and retail trade (Polese 1981).

Most authors recognize the weakness of the data available to analyze the growth of this sector. However all agree that the Service Sector has grown more rapidly in terms of the number of people employed than the two other sectors of the economy. Within the service sector, producer services,⁽¹⁾ in conjunction with personnel services, retail trade and hospital services, have been the major source of employment growth (Cossette 1982). In Quebec for example, from 1975 to 1980, producer services alone have been responsible for 8% of total new employment, whereas the manufacturing sector was responsible for 12%. Cossette provides

(1) Cossette includes in his definition of "producer services" the following services: Personnel Services, Computer Services, Security Services, Accounting Services, Advertising Services, Architecture, Engineering, Legal Services, Management Consultants, Miscellaneous services.

a further, more detailed, analysis of the producer service sector. Although his data are limited to Quebec, we see no compelling reason why his general results should not be broadly applicable to the rest of Canada.

A survey of his findings shed some light on the growth of Producer Services:

- In 1973, firms were buying 33% of all services sold in Quebec;
- From 1966 to 1973, the purchase of services by firms has increased at a rate of 8% annually in terms of dollars spent. It is worth noting, however, that this growth is less substantial than the growth of services bought by governments and consumers;
- Producer services are the most important portion of the purchase of services done by firms. Between 1966 to 1973, this group experienced the most rapid growth in terms of spending.

Cossette notes, however, that lately the share of services bought by firms and the ratio of services to goods bought by firms, are both declining. Cossette explains this phenomenon by the fact that firms do not have a "final consumption" of services as do consumers. Services are "functional inputs" to the firms, where they are consumption goods for individuals. Therefore, firms use services only as long as they are linked to the production process, and not necessarily in relation to growth in revenue, as is often the case for consumers. The decline in the growth of pur-

chase of services by firms has been particularly significant in the areas of hotel and restaurant business, communications and other services such as repair, maintenance, equipment rental etc... Cossette suggests that this could be due to a recent trend to internalize these services. Another suggested explanation of this decline is the progress in the area of communications and computer sciences which has resulted in a decrease in services bought and personnel employed.

Nevertheless, there is continuing a growth of the Producer Services Sector, and of services bought by firms, but Cossette admits that it is difficult to differentiate between the creation of new services and the transfer of services from "in-house" production to outside independent specialized firms.

In the following section we will study what part this "contracting-out" phenomenon has played in the growth of producer services.

2.4 Contracting Out:

Most authors commenting on the growth of the service sector have acknowledged the issue of contracting-out. They recognize that the lack of data available on the subject might have biased our estimation of the growth and size of the producer service sector.

Stanback in 1979 pointed to the problem:

"A final issue is whether we are moving toward provision of a greater or lesser share of producer functions by service firms rather than in house. There is evidence working in both directions. On the one hand, major corporations are growing in size and importance. In some cases the firm finds that increasing size makes it feasible to perform a larger share of its functions within the organization. On the other, the need for higher levels of expertise coupled with increasing size of the market, which results in lower (unit) costs and higher levels of effectiveness for the independent service firms, encourages growth of producer services ... the trends discernable thus far would indicate a strong tendency for the latter set of forces to dominate."

Also, the DRIE abstract on Service Employment in Canada (1961 - 1981) comments on the subject:

"...the practice of contracting out technical and business services to outside specialists may explain in part why the service share of employment did not increase much in growing industries ..."

The report further adds that one characteristic of the process of *specialization*:

"has certainly contributed to the apparent growth of business services. Many functions formally provided within the manufacturing industries are instead being purchased from outside companies which specialize in the planning, development, administration and technical field."

Unfortunately, despite the wide acknowledgement of the subject matter, little data have been gathered on the topic.

The Law and Economics literature as well as the literature on local government provides some theoretical justifications for

contracting out. The urban geography literature provides a less theoretical emphasis, but more empirical data on the extent of the contracting out phenomenon in Canada. This latter source of information provides considerable evidence in favour of the hypothesis that a process of contracting-out may explain much of the apparent growth in market services. Several factors are seen to be important.

The first determinant is a *cost factor*. Where a job has been "contracted out", the firm usually believes that the work can be performed by an independent firm at a cost saving. Chandler and Sayles (1959) in their study of the contracting out process identified cost as the most important factor in the decision to contract out. However, it is important to identify the various elements that enter into the composition of the cost of a contract vs. the cost of in-house production.

The most basic analysis of this cost is provided by the literature on law and economics dealing with the concept of transactions cost. The concept was first introduced by Commons (1934), who made it the basic unit of analysis of the firm. Coase (1952) developed the concept, and asserted that a balance is struck when the firm has expanded to the point where, "the cost of organizing an extra transaction within the firm becomes equal to the costs of carrying out the same transaction by means of an exchange in the open market or the costs of organizing in another firm". Coase defined transaction cost as being the *cost of discovering the relevant price of the good or the service.*

Cheung in 1983, took Coase's transaction cost concept, and added to it two new dimensions of cost: the *information cost of knowing a service exists*, and the *measurement cost*. After enlarging the concept of cost to include these two dimensions, Cheung argues that the practical measurement problems can be quite severe.

John McManus (1975) argues finally, that the *cost of enforcing alternative behaviour constraints* is the principal determinant of the choice between different organizational arrangements. McManus argues that we observe a considerable variety of pricing systems and contractual arrangements largely as a result of varying costs of enforcement. According to the author we can explain many of these arrangements as chosen by individuals to minimize the cost of enforcement associated with co-ordinating their actions. McManus suggests that it is through the reduction in pecuniary behaviour constraints that a central authority (firm), or hierarchical structure tends to replace the market price system as the mechanism to achieve the required coordination of factors and activities.

However, he recognizes that the circumstances which determine whether or not coordination through in-house vs. contracting yields higher total output depends upon the costs of enforcing pecuniary constraints on productive activities relative to the costs of enforcing non-pecuniary constraints on consumption activities. In other words, they depend upon the expected loss of output that will be experienced from the different external effects that will arise in the two forms of organizations.

Williamson (1981) attempts, in his article entitled, "The Modern Corporation: Origins, Evolution, Attributes", to clarify the concept of transaction cost by defining the relevant attributes of the transactions, which are:

1. The *frequency* with which transactions recur;
2. The *uncertainty* to which transactions are subject; and
3. The degree to which transactions are supported by durable, asset- *specific* investment. *Asset specificity* can be of three forms: site specificity, physical asset specificity or human assets specificity. *Asset specificity* is important because a highly specific asset is basically a fixed factor, thus locking the supplier into the transaction.

Given these attributes, Williamson presents several principles guiding the choice between a market transaction or in-house transaction. Contracting out is less likely to be advantageous

- The more specific the subject of the contract (information cost);
- The greater the uncertainty about the contract, since the costs of harmonizing a relation among parties vary directly with the need to adjust to changing circumstances;
- The more costly it is to determine the extent to which the objectives of the contract have actually been met (problems of measurement); and

- The greater the extent to which the firm and the contractor lock themselves into a bi-lateral monopoly situation as a result of their agreement.

In conclusion, it appears more advantageous to contract out where:

- The objectives of the contract are easily specified and where the performance is easily measured;
- The technology of production involved is relatively well-known;
- The activity does not require a significant investment in specialized facilities.

On the other hand it seems less advantageous to contract out where

- The objectives are general rather than specific
- The performance is costly to measure
- The outcome is subject to uncertainties
- Significant specialized facilities are required.

The second influence helping to explain the rise in producer services is the *quality* of the service required. In a world of evolving complex technology, it becomes advantageous for the firm to contract out specialized, highly technical services if it wants to keep up with progress and remain competitive. Contracting out also has the advantage of limiting the risk and uncertainty involved in using innovations. The contracting firm, if large enough, will have a pool of specialized professionals from which to draw in order to tailor the service to the needs of the

firm buying it. In addition, a service firm contracting to a large number of firms will gain experience and knowledge not available to a firm working on its own.

The third influence relevant to producer services is the *quantity* of services required. Independent, specialized firms can enjoy various scale advantages over the in house production of services. Williamson (1981) identifies two of them:

- "Static scale economies can be more fully exhausted by buying rather than making if the firms needs are small in relation to the market.
- Markets may enjoy economies of scope in supplying a related set of activities of which the firm's requirements are only one."

As the economy grows, it becomes easier to take advantage of these economies of scale and economies of scope. Therefore, as the economy grows the production process for these services become increasingly efficient, and there are increasing advantages in contracting out.

Finally, the last factor influencing the rise of producer services is linked to the desire to *reduce staffing and management problems* attached to the production process. Contracting out might be a way for the firm to eliminate troublesome staffing and personnel functions such as dealing with complex jurisdictional, or other problems in union management relations, and coping with irregular work schedules. It may also allow the firm to adjust to erratic or seasonal labour requirements and permit the company

to meet peak work loads without having to hire extra employees. More simply, contracting-out may allow the firm to decrease the cost and burden of coordinating an extra activity. This reason for contracting-out was identified by Stigler (1966) as one of the major reasons for contracting-out:

"Of course the coordination of activities within the firm is also not free: men and machines must be assigned tasks in an efficient manner and supervised to ensure that the efficient plan is followed. When a firm supplies only part of its needs for some process, the rising costs of internal coordination are in fact the basic explanation for partial recourse to purchase."

With the increasing cost of unionized labour and increasing number of conflicts between management and unions, this last observation may well be becoming more and more important in the decision for contracting-out.

Two Canadian studies are available on the contracting out process which provide some interesting data on the subject. The first one was written by J. Young in 1964, and the second is an article by M. Polese published in 1982. It is worth noting that despite the span of time between the two studies, their results are similar in terms of the services most likely to be contracted out.

F. John L. Young's book on contracting out in Canada examines the extent of contracting by industry, by type of work or service and by craft and occupation. According to Young, contracting out appears most prevalent in industries such as Primary Metal, Chem-

ical and Chemical Products, Electrical Products, Food and Beverages, Rubber, Metal Fabrication and Petroleum. There seems to be heavy reliance upon subcontractors for performance of work and services in areas peripheral to the main business of the employer. Examples given are construction, maintenance, specialized installation, service and repair.

Mario Polese in his article published in 1982 provides data on service flows based on a survey of 408 business establishments located in the Eastern Townships of Quebec.

Polese differentiates between three alternative procurement possibilities; the firm may choose to: 1) produce the service in house; 2) purchase the service on the market from another firm (interfirm or market oriented services); 3) obtain the service from another branch office of the same firm (intrafirm or organization-oriented services). The economics literature on "transfer pricing" has discussed the importance of intrafirm exchanges of goods, but Polese is one of the first to recognize the importance of this third method of procurement for invisible (service) transactions. In a separate study, Polese analyses the importance of the head office whose

"primary role ... is to produce services for subordinate units. The head office, however, differs from other service producers in two ways. First, it produces a highly diversified set of services that change over time, perhaps on a daily basis. Second, the market for its services is given and captive; because it sells internationally to other units of the firm its level of sales is not necessarily price-sensitive.

Polese distinguishes between *advanced corporate services* (finance, law, advertising, accounting and management consulting functions) which are generally contracted out by the head office, and *skilled management resources* which are internalized.

Polese identifies the following services as intrafirm services: insurance, legal services, long-term debt, accounting, publicity, engineering and technical studies (research). These services are ones the head office looks after, but chooses to contract out.

Services such as accounting, management consultants, marketing studies, and technical studies are more likely to be provided in-house. Finally, the market-oriented services, which are similar to those identified by Young, are construction services, real estate, repair, transportation services, equipment rental and services linked to student and manpower training. M. Polese is undertaking at the present time a similar survey on 1,000 Quebec-based establishments which should provide us with further information. In summary, the analysis of the various elements of the contracting out process allow us to conclude that in a growing economy, based on specialized, complex and evolving factors of production there seems to be considerable theoretical and some empirical evidence in favour of the contracting-out option.

Nevertheless, even though there seems to be a trend towards contracting out, we noted in the previous Chapter that tests based upon input-output methodology reject the concept that there

has occurred any increased intermediate demand for services by the manufacturing sector. Recall that Magun (1982) shows service inputs as a percentage of total inputs absorbed by the goods sector of the Canadian economy increased only from 20.9% in 1961 to 21% in 1971.

We agree that there is growth of the Producer Service Sector, as suggested by Polese, Greenfield and Cossette and that it is difficult, using input output methodology to explain this growth by an increased intermediate demand for services by the manufacturing sector. Much empirical work remains to be done on the "contracting-out" hypothesis, but at the moment more theoretical development is required to relate the rise and specialization of producer services to the economic literature on industrial organization. Changes in the production structure caused either by demand or cost reasons will affect the demand for, and type of, services in the economy. Testable hypotheses on the service sector will evolve when we look closely at transaction and adjustment costs, and the issues of incentives, control and co-ordination in business enterprise.

2.5 Service Sector and Government as User of Producer Services

It is interesting to note that most studies done on the growth of producer services have limited themselves to studying producer services in the manufacturing sector. Cossette (1982) has shown, however, that an increasing amount of services bought by firms were in fact bought by other service firms.

If we accept Cossette's data and, as we said previously there are no apparent reasons why these results should not be valid for the rest of Canada, we can suggest that the producer service sector has grown partly as a result of contracting out, partly through changes in technology and increased specialization, but also by generating its own demand for services. This demand is growing at a higher rate than the demand for services by the manufacturing sector. In Quebec, for example, services represented, in 1973, 53.9% of all purchases made by service firms whereas for all firms in aggregate this proportion was only 18.2%. In comparison, manufacturing firms' purchase of services was only 8% of their total purchase of goods and services.

This confirms Eli Ginzberg's remark (in the foreword to Greenfield's book) that "there are strong links between the expansion of one particular producer service and the expansion of others, since so many producer service firm are themselves dependent on the purchase of external services."

A final element of the growth of producer service sector is the increasing value of services bought by government. In Quebec in 1973, the government sector represented approximately 15% of total purchase of services. Still in Quebec the share of services bought by Government compared to the total of services and goods purchased has grown from 39% in 1966 to 58% in 1973. The majority of services bought are medical services, financial services and producer services.

In the following section we will summarize the characteristics of that emerging new sector, and study its impact on the economy. The name assigned to this new sector, and the definition of it, are borrowed from Mario Polese's "dynamic tertiary sector" concept.

2.6 Dynamic Producer Services Sector:

Very little has been done to precisely define the characteristics of the "dynamic tertiary sector" its existence, and in its dynamic role in the process of economic growth. Mario Polese (Oct. 1981) proposes some thoughts in an attempt to clarify the concept.

The first characteristic identified by Polese is the "exportability" of these services. As opposed to services such as those of the hairdresser, dentist etc... which have a regional or local limitation, this new sector provides services that are exportable

on a relatively long distance basis. By bringing money into the country or the region, this sector has a positive initial impact on the local economy. This inflow of money will promote the growth of local or regional induced activities, and will allow the region to finance necessary imports. Polese distinguishes between direct export of services, where the service itself "travels", and indirect export, where the service is provided by a firm, or affiliate of a firm, established in the country or region where the service is delivered. With respect to indirect export, Polese gives examples of such multinational service firms. In the advertising sector, Young and Rubicon from New York; in the area of management consultants, Currie, Coopers and Lybrand from London, Price Waterhouse from London, Arthur Anderson from Geneva and Peat Marwick from New York. To emphasize the point, note that in Quebec in 1974, approximately 33% of all exportation of services fell in the areas of finance, insurance and real estate. and that 4 of the 5 most "exportable" activities are service activities. Finally, producer services by exporting \$588 million worth of services from Quebec are exporting as much or more than the clothing industry (\$587 millions), the paper industry (\$533 millions), primary metal industry (\$556 millions) or chemical industry (\$539 millions) (Cossette 1982).

The second characteristic of these services is their "know-how" component. This "know-how", with the right institution developments, is marketable, and more complex than in the past. The problem with this characteristic is that it is intangible,

and therefore, less easily measured or identified. However, as long as the knowledge and innovation characteristics of this sector can be transmitted to other economic areas as a service, they constitute a basis for economic expansion, and therefore, contribute to the growth of the economy.

Third, the service sector of the economy relies heavily on *specialized human capital* as opposed to physical capital. This implies long term investments in terms of training and education and has consequences in terms of localization. According to Polese, the "dynamic tertiary sector" will necessarily be located in large cities because only large cities can gather and retain a large enough pool of specialized man-power. We will discuss this point more fully in the next Chapter.

Finally, this sector is characterized by a very high level of "*product differentiation*". Each service sold is different and unique and requires to be tailored to the needs of the firms (or individuals) buying it. This creates a tremendous need for specialized human resources, if this sector is to adapt to a rapidly changing marketplace.

Polese compares this sector with the high-technology manufacturing sector. Problems of implementation and expansion are the same, while the major difference is that physical investment is less important compared to human capital investment.

According to Polese, Cossette and other authors, the dynamic tertiary sector is made up of financial services, transportation

and communications services and other producer services such as engineering, architecture and other consultant services. However, it is important to keep in mind that research in this area is still in an embryonic state and more theoretical and empirical studies are needed to confirm the properties of this new sector and its role in the economy.

In summary, we can tentatively conclude that there has been significant growth of the producer service sector. This growth is partly due to innovations in communications, managerial methods and new technology, partly due to an increase in contracting out and partly due to a demand generated by the service sector itself. We have seen a relative decline in traditional producer service activities which included services such as repair, maintenance and equipment repair, etc... This decrease is accompanied by a growth of a new area of activities such as management consultants, accounting, legal services, engineering firms, computer services which constitute what has been identified as the "dynamic tertiary sector".

3. POTENTIAL POLICY AND RESEARCH ISSUES

3.1 Are Services Always a Derived Demand?

The conventional wisdom with respect to service sector demand is that the direction of causation runs from goods to services. In other words, demand for service sector inputs is a derived demand whose elasticity properties depend ultimately on the demand for final output. This complementary relationship between goods output and service demand is, no doubt, the more important direction of the link, but it is worth noting that causation may run in reverse from service output to manufacturing. As service industries expand, they are more likely to move aggressively to acquire related manufacturing and non-service activities. For example, we are aware of a British Columbia engineering services firm which, after developing the software for digital radio transmission, expanded to manufacture the terminals for installation in mobile units such as police cars and small parcel delivery vans. If this reverse order of development from services to manufacturing is more widespread than commonly realized, a stronger case for public sector involvement can be made.

Indeed, the stimulus to manufacturing output and exports of tangible goods may arise from the general availability of specialized services at low cost. Service-producing firms need not enter manufacturing activities themselves. It is sufficient if

their services give Canadian manufacturers a significant competitive edge to permit effective participation in domestic or foreign markets. Comparative advantage in manufacturing can, in principle, be based upon the relative abundance of efficient and reliable service sector inputs, just as it is more conventionally thought to rest upon the relative abundance of land, labour or capital inputs.

Despite the obvious importance of this question, there is very little in the literature on the service sector which is directly relevant. (Greenfield (1966, p. 127) uses a case study research methodology to note that, "the existence of developed producer service industries encourages the establishment and growth of firms and organizations which use such services." This reverse causation process is potentially a very interesting research topic which should be pursued both theoretically and empirically.

3.2 Spatial Dimension of Service Sector Growth:

From the work produced by urban geographers and economists, it may be concluded that there is a close relationship between producer service employment and urbanization. Nearly all of the writers on the service sector make the point that service industry employment is predominantly located in large cities. Greenfield (1966, p. 127) noted in his study this point which has been reiterated by many other authors.

"An examination of regional employment and industrial patterns revealed that those regions which exhibited high rates of employment growth between 1950 and 1960 were usually those with relatively high concentrations of producer service activities. The data revealed, in addition, that in those regions with high overall growth rates there was a significant tendency for employment in the various producer services groups also to grow quite rapidly. The analysis of industries using relatively large proportions of producer services indicates a close relation between producer services employment and urbanization."

Stanback (1981) picks up this point and builds on the concept that specialization and diversification of economic activities tend to be greater in more dense urban locations. Thus opportunities for "contracting-out" of service activities will increase with city size. Stanback, however, goes on to note that the relationship between city size and the development of producer services is very complex, in that many other variables appear to have an influence over the relationship.

As with our conclusion in Section 3.1, rigorous theoretical and empirical work, both statistical and case study, will be required to sort out the important dimensions of the relationship between city size and producer service growth.

3.3 International Issues:

The balance of trade for services in Canada has been in deficit ever since 1950, and the situation has deteriorated even more over the last ten years. This is primarily due to the steady growth of service payments in terms of interest, dividend and miscellaneous investment income. On the other hand, the deficit in tradeable services (travel, freight and shipping, government transactions, business and personal services and other service transactions), while also increasing in absolute terms, has remained constant in terms of share of GNP.

This poor picture of Canada's position in international trade of services is somewhat improved if we include the services provided by subsidiaries and affiliates of Canadian firms in foreign countries as exports from Canada. This lack of detail on the service account transactions of Canadian affiliate firms remains one of the most important failures regarding international service flow data.

Although not rigorously confirmed, international services transactions as a whole, including service trade, seem to have grown at a rate comparable to the rate of growth of services in domestic economies. Although the importance of the investment aspect of international commerce has been recognized by several authors, very little work has been done on the subject. A U.S. Department of Commerce Study (1976) stressed that American ser-

vice exports were predominantly associated with foreign investment, rather than direct trade. A full 86% of estimated U.S. service sector sales abroad were associated with overseas affiliates. Direct service sector exports from the U.S. to foreign countries accounted for the remaining 14%. Future policy regarding Canada's ability to export service sector outputs must realize that we lack this overseas network of foreign affiliates built up over years of net foreign direct investment. Also, with respect to service imports into Canada, and the possibility of import replacement by the domestic production of services, the role of foreign affiliate firms in Canada must be specifically recognized.

In order to understand more fully the role of foreign affiliates, more work needs to be done both on foreign-owned subsidiaries in Canada and on Canadian firm's foreign affiliates. There is some work available on foreign-owned subsidiaries in Canada (see Dree/ITC (1983)), but it does not cover the service sector other than under the broad category "other non-manufacturing industry".

There are some very interesting public policies available in this area of service sector exports. For example, government policies such as the one on procurement can potentially provide domestic firms with the opportunity to develop service expertise which can be exported. A good example is Quebec Hydro's James Bay project which was contracted out to local engineering/construction firms such as Lavalin. This firm subsequently has become

one of the largest consulting engineering firms in the world. The impact of national government policies and programs on both domestic competitiveness and international competitiveness needs to be understood. At this point in time, governments seem to have provided more support to firms to help them capture and expand their international market regardless of their position in the domestic one. There is presently a need for a re-examination of government domestic policy on services, and a need for coordination between domestic policy and trade policy regarding services.

There are other important issues regarding trade in services, such as foreign barriers to trade, lack of data, absence of theoretical framework, etc. Many of these questions have been dealt with at great length by the Task Force on trade in services (1982). The analyses do not need to be repeated here.

3.4 Stabilization and Productivity Issues:

Fuchs (1968) was the first to point out that, over the business cycle, output and employment are more stable in the service industry than in the goods industry. The explanation of this phenomenon is thought to lie in the greater flexibility of service compared to industrial wages. A related issue is that, due to the costs of organizing service sector workers, wages in the service sector will probably continue to be more flexible than the wages of industrial workers. Increased service sector employment may thus be an effective method of moderating the effects of business downturns, and absorbing the displaced workers from the industrial sectors.

However, stability of employment when output is fluctuating implies instability in productivity when productivity is defined as output per person. In general, the role of service sector productivity in relation to the issue of service sector employment policy is poorly understood at present. If the service sector is to continue to absorb displaced industrial workers, late entrants into the labour force, and people demanding basic work experience, the flexibility in service sector wages and relatively poor productivity growth would appear to be desirable properties. The whole issue of productivity growth and the resulting employment consequences needs further investigation.

3.5 Small Business Issues:

In the service sector, private sector firms are typically small and usually owner-managed. This is due to the fact that the success of service sector firms is usually dependent upon a high degree of product differentiation and specialization which makes large production runs less appropriate.

The social and economic contribution that small firms make to any economy cannot be ignored by policy-makers, especially when these small firms belong to the dynamic service sector. We believe that two aspects of the small firm should be more closely understood in order to develop appropriate policies. First, the question of ownership, and second, the question of risk-taking or barriers to success.

Within an owner managed small firm, the work of the owner is concerned primarily with management or supervision. The owner himself will normally have to make decisions concerning production, sales, finance and distribution without any (or with only very limited) access to specialized management support and advice. The success of the small firm will therefore be heavily dependent upon the ability of the owner to make good decisions.

The existence of certain government agencies and programs such as the "Federal Development Bank" prove that the government is aware of the importance of providing support and advice to small firm owners. A different kind of policy suggestion has been put for-

ward by some authors who suggest that the likelihood of success in management can be increased by providing incentives which encourage collective and cooperative ventures.

Few people are willing or able to undertake a venture such as starting and maintaining a small firm. Most authors attribute this phenomenon in some measure to questions of personality. However, attempting to draw up the profile of the "successful entrepreneur" would not seem to be very useful in the development of future policies: firstly, because the personality profile seems to vary from time to time and from place to place; and secondly, because there is little evidence to demonstrate that government policies have been successful in influencing changes in this area. Among the numerous psychological traits attributed to the entrepreneur by various authors, only two have turned out to be significant in determining the success of the enterprise: his level of education and his previous operational experience. Even though government cannot have direct influence on these two characteristics it might nevertheless be useful to keep them in mind when assessing the potential for success of a firm requiring government assistance.

What is more important to understand however, is what constitute the barriers to the individual willing to undertake such a venture. In other words, what are the risks that the entrepreneur has to face and what can be done to alleviate them?

The barriers that face the entrepreneur fall into three categories -- availability of venture capital; government tax and grant policies; and difficulties marketing new products.

The availability of venture capital is one of the most important elements in the decision to start a new business. Although personal savings are consistently the most important single source of funding for the new business, and the most frequently used, they are rarely sufficient to sustain the maintenance of the firm.

In the second category of barriers, government policies, the problems tend to be related to the tax system and to government grants.

There seems to be few tax incentives for the prospective entrepreneur to invest time and money in a new venture. It has been suggested that taxes are too high for new ventures, and government support through tax expenditures tends to go to firms which do not require assistance. In addition, it has been shown that the larger, more established firms are often the major recipients of government grants to the detriment of small firms. This stems mainly from a lack of knowledge of the role of the small firm in the economy especially when these small firms belong to the "dynamic service sector".

The third area of difficulty confronting the new entrepreneur is in the penetration of new markets. Owing to lack of funds or knowledge, relatively few small firms conduct marketing research

before making the decision to commercialize their product. In addition, small firms often lack the funds for advertising and promoting their product. In general, small firms lack the power to influence the size of their markets.

The shortcomings of small and medium sized firms in these areas are accentuated when they engage in export activities. Encouragement by government to form consortia or to develop other cooperative arrangements for purchasing market research and promotional services might help alleviate the problem.

As Birch (1979) has suggested there has been an absence of knowledge about which type of companies creates jobs and which are most likely to respond to government incentives. Consequently government has had (up until now and especially in the area of small firms), to rely upon aggregate macroeconomic policies such as tax incentives in public expenditures, rather than being able to direct incentives towards those companies and individuals likely to be most responsive. Not all small firms are viable and not all small firms contribute to the growth of the economy. As analyzed by Storey (1982), part of the increase in the number of small firms is due to a decline in the economy and is temporary:

"Trends apparent both in the United States and the U.K., suggest that when economies are undergoing major structural change it is the small firm sector with its greater flexibility which performs better than the large firm, which sheds labour but probably remains in existence awaiting a period of more steady growth in demand ... Once growth is re-established the giant corporation may find it worthwhile to acquire many of the small firms currently being spawned."

Service sector firms, being usually small are doubly handicapped in terms of government policies. Not only must we recognize the role of dynamic service firms in the economy, but we must also accept that they might have to remain relatively small to be efficient.

In summary, the main point of this section is that macroeconomic policies such as depreciation allowances or tax credits make little sense for small operations who pay little or no corporate tax. Entrepreneurship, marketing skills and risk taking are more important qualities in a non-corporate organizational format, and stimulation policies should build on these issues.

3.6 Manpower Planning Issues:

Detailed analysis of service sector employee characteristics illustrate that more female, part-time and older workers are employed in this sector. Also, as mentioned above, the wage structure for service jobs has a much higher variance than the wage structure for industrial jobs. Partially this reflects the great heterogeneity in the types of service sector employment, and partially it reflects the relative lack of unionism in the service sector. The main point with respect to manpower planning in this sector is that, at the low end of the wage scale, services often are an employer of last resort, and the point of entry into the labour force for many part-time,

older and female workers. Maximum flexibility regarding wages and working conditions would appear to be a very desirable property of this segment of the service sector. We currently see other manpower planning issues as being outside of the scope of this report, but suggest that further work on this topic involve the appropriate departments as early as possible.

4. GOVERNMENT POLICIES RELATING TO SERVICE ACTIVITIES:

A FRAMEWORK FOR ANALYSIS

4.1 Introduction:

This chapter presents in summary form the main conclusions and policy implications of the more substantial review of the evolution and present structure of the "service sector" presented in the previous chapters. It attempts both to provide a possible framework for assessment of government policies designed to influence decisions relating to service activities, and to suggest directions for further research work.

In summary, it is argued that we know far too little about specific features of the broad range of activities and structures embraced within the expression "service sector"; too many myths are based on too many aggregate and sweeping generalizations. Work at a much more detailed and concrete level is necessary to permit appraisal of many government policies.

For this reason, this note suggests the need for a three-five year study, of which the first two or three years would be directed toward reconsideration of theoretical and empirical underpinnings to the statistical base describing service activities (extending perhaps even to reappraisal of some basic national accounting conventions and assumptions), and to collection of some primary data, largely through special purpose sur-

veys. Recommendations as to appropriate statistical structures and data clarification systems should be included in this research agenda. Since many service activities cannot be well described by a conventional "production function", the existing structure of the statistical system is often not well adapted to the measurement of service activities.

Beyond this evident problem of statistical background, this note also suggests a need to direct attention to the role of service activities as, in effect, elements of a basic infrastructure affecting the environment or milieu for industrial operations rather than solely as consumption activities or as specific inputs to individual production processes. It argues that service activities are not generated merely to meet demands derived from manufacturing operations, but through a dynamic process with a life of its own, and the power to stimulate further economic activity.

It suggests, further, that government policy in this sector should be directed toward improving the general environment for decisions of individual economic agents rather than toward specific sectoral targets or sectoral strategies. Such an orientation thus would emphasize structural features particular to service activities, and would be designed to encourage the efficient reallocation of resources and redirection of activities in response to a changing external environment. In particular, this paper identifies policies encouraging and supporting the redirection of labour and skills, and the emergence of new organiza-

tional structures, as likely to be critical elements of any overall government strategy towards the service sector.

In this chapter, it is assumed that a general concern for the maintenance of high levels of employment underlies most of the discussion, but that the two specific objectives to be considered are the improvement of Canada's competitive position in the international economy (so as to maintain employment prospects and a capacity to acquire imported goods), and the achievement of a greater degree of regional balance (so as to reduce the social costs of economic adjustment and regional unemployment).

With respect to the first objective, this paper suggests that it is a mistake to imagine that only private sector activities, narrowly defined, contribute significantly to an improved competitive position. It is important to emphasize not only the value of low cost services as direct inputs to production activities, but also the general value of government-produced or social infrastructure in lowering production costs and increasing productivity. In a world in which human capital has replaced physical capital in terms of its contribution towards the creation of income and wealth, attention to the skill, dexterity and knowledge of the population can have major paybacks.

With respect to the second objective, it is essential to re-examine the premise that service activities are "footloose" activities which can easily be influenced, through government policy, to locate in regions of depressed economic activity so as

to stimulate a better balance across regions. In general terms, this argument seems suspect. But the possibility of shaping policy to encourage opportunities for service activities appropriate to each region, and exploiting features particular to each region, seems clear nevertheless.

The overall plan of this chapter therefore is as follows. The next section describes a general context for the discussion and offers a few general observations about the nature of service activities. Section 4.3 discusses a possible framework for analysis and possible orientations for policy towards the service sector. Conclusions -- or rather several steps in a possible line of argument -- are set out in Section 4.4.

4.2 General Context:

The previous chapters have identified several problems in any attempt to describe the evolution of the service sector in simple categories. Nevertheless, it seems possible to argue that three particular lines of development deserve attention at this time.

The first is the growth in income-elastic personal services, delivered either by firms in the private sector, or by non-profit organizations and government agencies. It is here that the vast growth in employment since the Second World War appears to be concentrated, especially in publicly-financed activities such as health care, education, and social services. Future employment

prospects evidently will hinge critically on resolution of questions as to the appropriate scale of such tax-financed activities, and the financial prospects of governments more generally.

More work is needed on this issue, which features prominently in writings on the "leisure society" or the "inner limits" to growth. The expansion of such intellectual, cultural, and human pursuits is seen by writers in this tradition as the solution to the problem of "jobless growth" in an increasingly automated aging society. Beyond that question, however, is the need for more precise assessment of the contribution of such services to the maintenance and expansion of the human resource base and "skills pool" of the economy.

There is, moreover, the possibility that it is in this sector of human services that the most promising opportunities for spatially diverse activities are to be found. General health, education, and social services can be established effectively in small centres and in remote regions. Community services need not be centralized and -- if they can be financed -- can provide viable and socially efficient employment opportunities outside of major centres. Questions of productivity, organizational incentives, and financing thus became important topics for research related to the service sector.

A second critical line of development is the emergence of services which are not inherently constrained to an individual recipient through direct contact. As noted earlier in this

Report, the direct involvement of the consumer in the production of a service sector output was seen to be a major impediment in the drive for productivity increases. With the personal service activities, the central feature is the fact of a skilled supplier rendering a service in which the recipient or client is inescapably involved. The feasible scale or extent of such services is thus inevitably constrained. Technical progress may of course still be possible -- as for example in distance education services to remote regions, or in the substitution of more sophisticated equipment in place of personal attention by physician -- but the scale of the activity is nevertheless constrained by the direct link to an individual recipient. The growing need for storage, processing and transfer of information, however, has given rise to a revolution in the service sector which may prove comparable to the historical transition from the individual artisan to mass production industry. This possibility of generalizing the nature of service activities to serve other industries or industrial and service processes collectively, rather than individual people, is what creates the force behind the "dynamic tertiary sector" or "moteur tertiare".

This possibility of divorcing service activities from the direct personal contribution of a skilled individual makes it possible to deliver services on a large scale, at long distance, without either producer or recipient having to travel. Services can be delivered across borders embodied in goods or embodied in data. An "industrialization" of service activities, and an explosion of trade in services reflects this potential.

More detailed analysis of this growth of "traded services" relative to "non-traded services" will be necessary and should include interprovincial as well as international exchange. It should include also, as noted above, an examination of flows amongst firms within the service sector as well as of producer services purchased by manufacturing firms.

In this sense, the "information society" or the "knowledge industry" is certainly not the entire service sector, but a major element of the "information society" is at the same time the key element in the service sector so far as industrial dynamism is concerned. Later portions of this paper will concentrate largely on this component of the service sector.

The third line of development is structural and organizational in nature; it concerns the shifting margin between marketed and non-marketed services, or the question of "contracting out".

This phenomenon is discussed in some detail in previous chapters, where it is observed that it gives rise to a particularly difficult problem of "statistical illusion" in measuring the apparent growth of the service sector. The argument goes both ways: it is possible to find cases in which staff activities yielding services previously purchased by a firm are simply bought within its own establishment. Headquarters staff may replace consultants previously hired by branch plants or field offices, for example. It is also possible to find many cases where service operations previously performed within a single

firm are contracted out to independent suppliers. Indeed the emergence of a secondary fringe of small specialized suppliers serving larger producers may be an important feature of the process of structural adjustment in the economy.

(Similarly it might be argued, that in the household sector, non-marketed services previously provided by permanent household staff have been replaced first by marketed durable assets yielding a non-marketed flow of services, and more recently by services marketed directly for increased convenience.)

This process of increasing functional specialization in the provision of service activities, leading to the appearance of small firms exploiting possible economies of scope in the utilization of human capital seems likely to be the central issue demanding detailed study. It entails examination of a balance between opposing tendencies -- pressures toward centralization and agglomeration to accommodate increasing specialization and to permit attainment of a critical mass both within individual service firms and in a network of service activities in any single location, and pressures toward decentralization to offset the rising costs of internal coordination.

One dimension of this "contracting-out" decision requires comment, since such decisions hinge crucially on a balancing of a variety of organizational costs. Where the community bears, through tax-financed social security measures, the risk of fluctuations in economic activity and employment, it is evident that

contracting decisions which are rational for the firm need not be rational for the society as a whole. The attractiveness of a contracting out arrangement for one organization may hinge on the failure of other supplying entities to carry out their cost calculations correctly -- or on their willingness to exploit themselves by accepting less than full returns to physical and human capital and labour effort. The problem here is the emergence of differential benefits for the employed and the self-employed. If the pressure of competition on the small operator forces returns down below going rates for capital and labour, one may see the emergence of, effectively, an underclass of very small operators suffering relative to those individuals employed in large organizations, either governmental or corporate.

Thus it might be argued that decisions on organizational form, or the balance between marketed and internal services, may be distorted by a failure of costing, or by possible irrationality amongst contending suppliers who fail, for any variety of reasons, to charge full market costs. Where such distortions exist, there is a risk -- particularly in the contracting out or "privatization" of government services -- that what appears rational in the small leads to higher economic costs overall, for the system as a whole.

It should also be noted that this decision on organizational form may be closely linked to the question of financing mentioned earlier. As would be expected, the literature on "contracting out" suggests that where products are not tangible, or results

not easily measured, the costs of contracting and assuring appropriate quality and delivery standards will lead toward hierarchical structures (internal supply) rather than market exchanges. Many personal services being of this intangible character, with results difficult to measure, there is an inevitable pressure towards modes of delivery other than through market mechanisms. Thus one may expect pressures toward a growth of non-market activity, through cooperatives or public agencies, in the service sector, with consequent problems of public finance. (On this issue, Majone (1983) offers a few interesting observations.)

Finally, the last major element to be emphasized in sketching this context for work on the service sector is the close relationship to the question of policy toward small and medium-sized enterprise. Overwhelmingly, service sector activities and service sector employment are organized in small units. Thus the questions of capitalization, implementation of technical (or organizational) change, or lack of management skills which have been identified as critical for small business will, in consequence, be central also to much of government policy toward service industries.

4.3 A Framework for Analysis

In principle, the developments in the structure of the economy generally, and the service sector in particular, which are revealed by the statistical system can be explained as the outcome a full general equilibrium structure evolving over time. In principle, this could be described by a dynamic input-output system *a la* Leontief. Or, more specifically, one might hope to adopt the approach of economic growth theory and study the capacity of service activities to generate or stimulate economic growth by isolating the traditional sources of growth and estimating in particular the contribution of service activities to the pace of technological change and a lower supply price for commodities.

But apart from any theoretical limitations to either analytical framework, examination of available statistical evidence suggests that neither approach is feasible for purposes of practical policy analysis.

The overall approach we propose views the analysis of policies relating to the service sector as involving two somewhat different structural studies. The first, reflecting essentially changing patterns of demand, flows from a literature on the structure and policy features of a small open economy in a changing world environment, and a literature on structural adaptation in the domestic economy. These literatures lead into studies of the

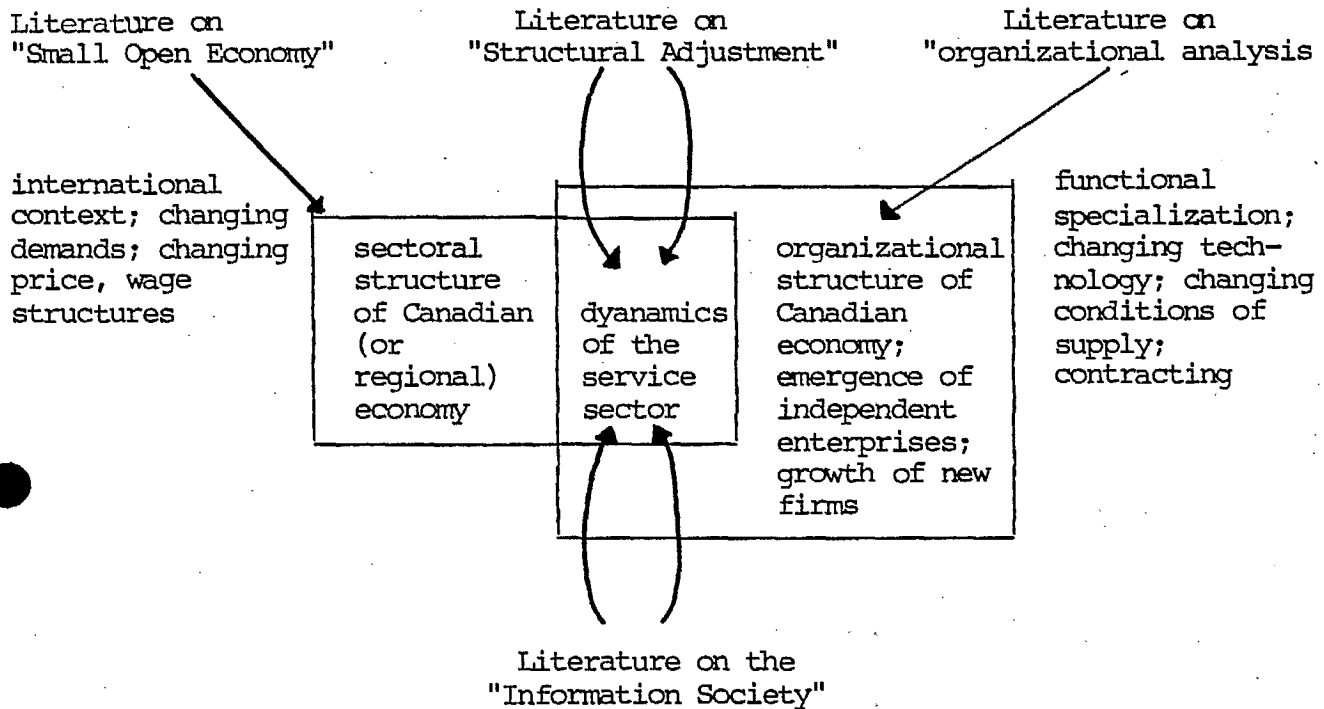
changing sectoral structure of the domestic economy in response to the changing demand and price features of the external environment.

At the same time, a distinct literature dealing with organizational analysis, information costs, and the distribution of risk and again a literature on structural adaptation, leads into study of the changing organizational structure of the domestic economy, essentially in response to changing supply conditions and a changing map of technological possibilities.

The interaction of these two sets of studies, which deals in effect with the emergence of the service sector as a distinct entity within the context of a changing economic structure overall, provides a setting for analysis of policies relating to the service sector. A specific background literature on "the information society" -- the changing cost and technical conditions making possible the growth of replicable, exportable services -- is relevant to this common core of questions.

Figure 4.1 illustrates this inter-related set of background literatures and structural studies.

FIGURE 4.1
Conceptual Framework



The point of this rather abstract-outline is to emphasize that the evolution of the service sector reflects a complex blend of changing demand conditions and changing supply conditions, a changing external environment and changing technological possibilities. To establish sectoral performance targets or identify specific government policy goals with respect to these rapidly changing circumstances is not easy.

The discussion in previous chapters does, however, suggest one pragmatic approach to the overall policy problem. That is to focus on three or four key facets of the general evolution of the service sector, namely the growth, largely demand driven, of personal and community services; the emergence, largely supply or technology-driven, of depersonalized or information-based services; the increasing delegation of these services into market transactions, and the consequent growing importance of small organizations in the overall economic structure.

This approach in turn suggests an assignment of the goal of regional balance to the personal and community services component of the sector, while the goal of improved competitive position is pursued through the dynamic tertiary sector and through more active measures to assist small and medium sized enterprises.

That is to say, even though many services ought in principle to be "footloose" activities, indifferent as to location, with no heavy industrial infrastructure required, no locational tie to power or raw materials, no dominant concern for costs of trans-

port to markets, nevertheless there is considerable survey evidence and anecdotal testimony that this indifference to location is a myth. The evidence suggests, on the contrary, that there is an interaction amongst producer service activities which leads to "minimum threshold" or "critical mass" phenomena. Instead there are suggestions that the bigger the urban agglomeration, the more desirable the location for service firm on what Polese has called the dynamic tertiary sector.

In the most extreme form of this argument, government policies aimed at dispersal of producer service firms in this dynamic tertiary sector would worsen Canada's competitive position: to be internationally competitive either directly in services trade or in the provision of services to domestic enterprises, a concentration of service activities is required. The old argument that pursuit of regional balance can be achieved only at the expense of national economic efficiency would then apply to these sectors.

It need not, however, apply to personal and community services as it does to business services. Traditional public services, whether contracted out in the pursuit of efficiency and a more effective incentive system, or provided publicly for reasons of quality control, need not be part of a concentrated urban agglomeration. Personal and community services, possibly contracted out to achieve the flexibility of wages characteristic of small service operations, may prove to be the vehicle for employment growth and regional balance.

A second component of the service sector which might in principle prove independent of pressures for agglomeration and concentration is the basic research component, serving both the producer service sector and primary and secondary industry through the expansion of technological possibilities, but not linked in any direct supply relationship. Knowledge travels well, and in principle the location of basic and applied research activities in regional centres should entail none of the efficiency costs cited in the case of more direct business services.

This general orientation for policy with respect to the service sector thus would recognize that in any given macroeconomic climate the objective of spatial dispersion and that of improved competitive position are probably in conflict. But policies to support small business and producer services even when these lead to greater concentrations of activity can be offset considerably by policies to recognize the fundamental investment value of personal, community, and research services carried out locally -- particularly where these may be contracted out for greater wage flexibility and improved incentives.

4.3.1. "Horizontal policies" -- the tax system:

On the matter of tax policy, little can be said without extensive and detailed empirical work at the level of the individual enterprise or agent. It has been argued, for example, that many service activities are highly human-capital-intensive: they depend heavily on the role of highly skilled and highly trained individuals rather than on an extensive physical plant. At first glance, the tax system, which permits rapid writeoff of costs of investment in many forms of physical capital, and which structures a variety of incentives through provisions relating to physical capital therefore might seem to discriminate significantly against the birth of service activities.

But it must be remembered that the formation of human capital is itself heavily subsidized. On average, over 85% of the costs of post-secondary institutions are met through government grants, and direct costs of retraining are largely met by governments. (The opportunity costs of post-secondary education are not subsidized in this way, of course a fact which may suggest one avenue for future policy development, as discussed below.) Thus, firms in the service sector, paying salaries which reflect in part (possibly very substantially) returns to human capital and past investment in education are permitted to expense these payments, and are thus placed in a tax position not unlike that of a manufacturing enterprise leasing its physical capital from another firm which enjoyed a substantial investment subsidy in the acquisition of that physical capital.

The essential point here, therefore, is that in the case of human capital, it is necessary to view the individual in whom that human capital is embodied as the "firm" affected by tax policy, and from that view it is not at all clear that, on balance, government policy discriminates adversely against the formation of human capital. At least in the case of the formal school and post-secondary education systems, in fact, the contrary appears to be the case. On the other hand, in the case of retraining or skills transfer, significant barriers or capital market imperfections may arise.

On this matter further work on possible market imperfections in the financing of human capital formation, and possible policy responses in the form of contingent repayment schemes for financial assistance would seem warranted.

Of more direct importance, perhaps, is the relation between returns to human capital and the tendency of owner-managed firms to absorb economic fluctuations in the returns to the owner. Simply put, owner-operated firms or owner-managed activities are in a position where the owner may frequently, at least in bad times, be working for less than wages, and receiving less than market returns to the capital -- physical or human -- employed in the enterprise. This, however, is a reflection of the distribution of risks, not a consequence of the tax system. A detailed study of the way the tax system permits the burden of risks to be absorbed, or losses to be shifted, in human capital intensive services as compared to physical capital intensive manufacturing,

would be valuable here. Work initiated by Robin Boadway and Jack Mintz (1984) of Queen's University provides a possible starting model.

4.3.2. Role of the service sector in the adjustment process

A great many service activities are provided by small enterprises, not formally organized as union shops, with relatively few rigidities in their organizational structure. In many cases they are owner-managed undertakings, operated by people who in fact are prepared -- either through ignorance or necessity -- to accept less than market returns for their labour and equipment. In effect, they are willing to exploit themselves, in some cases for a considerable period in exchange for the possibility of capital gains and the independence, variety and scope for imagination offered by self-employment.

As observed earlier, this feature has meant that the service sector has exhibited much greater wage flexibility than other sectors of the economy, thereby acting as a buffer to fluctuations in employment. To the extent that one believes the achievement of greater flexibility of wages in the Canadian economy to be necessary to economic recovery, the process of decentralizing and contracting out activities is likely to contribute to that goal.

These features suggest that service activities may play a very significant role not only in acting as a "shock absorber" to accommodate fluctuations in economic activity elsewhere, and as a seed bed of innovation and entrepreneurial initiative, but also, in providing a source of employment for people losing jobs in the course of permanent shifts in patterns of trade and production. Policies relating to service industries must strengthen the role of the service sector in this task of buffering shocks, smoothing adjustment, and encouraging innovation.

Contrary to some elements of conventional wisdom, this objective demands adequate safety nets and social policy provisions. Far from there being an inevitable tradeoff between equity and efficiency, it is often the case that pursuit of economic efficiency demands a re-allocation of resources that is only tolerable or acceptable if adequate social protections are assured. Self-employed entrepreneurs can undertake the provision of new services with highly volatile and uncertain markets only so long as the presence of social insurance programs assure that they do not thereby place their family too greatly at risk, for example. Innovations are more easily contemplated if some provisions for income maintenance can be anticipated in case of failure. The "right to go bankrupt" is more likely to be confronted in a setting where the economic consequences are not catastrophic or irreversible.

Policies which provide for some sharing of the risks, therefore, either through the income tax act, or through a more gen-

eral social safety net, are likely to be central to any government strategy directed toward the service sector as a factor in the overall economic adjustment process.

4.4 Conclusion: Orientations for Policy Relating to the Service Sector

The conclusions of this chapter are based on four premises:

1. In appraising government policies, it is essential to look beyond the immediate goal of increased exports and improved prospects for producers, in order to emphasize the interests of and prospects for Canadians as consumers and as members of the labour force.
2. The interests of consumers are best served by government policies directed toward reducing barriers to economic adjustment, reallocation of resources and the emergence of new and more flexible organizational forms and structures.
3. Such general "framework" policies or "framework legislation" must reflect the particular organizational features of the domestic economy, specifically the emergence of a dominant service sector, the concentration of its activities in small enterprises, and the importance of human capital as a factor in their activities.
4. The objective of government policy toward the service industries is not simply to stimulate economic growth, nor simply to encourage the emergence of a dynamic ser-

vice sector, but also to "tilt" that growth in a way which achieves a better balance in economic activity, and thus reduces the social cost of the structural readjustment through which the Canadian economy must in any case pass.

With those four underlying premises, the line of argument which this report has explored can be summarized in the following terms.

From a review of the background literature, and a less-than fully satisfactory statistical record, we have identified three themes as likely to be of particular importance in the development of federal policies relating to the service industries. These three themes -- the growing importance of personal and community services not only as consumption activities but as investments in maintenance of a human resource base and a social structure; the emergence of a dynamic business-services sector based on exploitation of new technology generating replicable, exportable services; and a process of functional specialization leading to increasing recourse to marketed services -- mirror the three possible explanations for the observed growth of service activities with which this discussion began. These three distinct processes each contribute significantly to the emergence of the service sector not only as a dominant element in final demand and employment, but also as a key intermediate factor in stimulating production and industrial growth. In this sense the image of

services activities as merely a response to derived demand is inadequate.

We have also proposed, more on the basis of prior belief than as a conclusion flowing from empirical evidence, a possible orientation for government policy. This orientation emphasizes the creation and allocation of human capital as the key factor underlying the development of the service sector, and the role of government policies in facilitating entrepreneurial decisions and smoothing economic adjustment, rather than monolithic management either of investment or of trade.

The essential feature of the approach proposed here, therefore, is that it would not argue for policy towards the service industries to be simply a pale shadow of traditional industrial policy based on some agreed aggregate industrial strategy. Rather it suggests a fundamental re-examination of service industries as wealth-creating activities having a direct impact on Canada's competitive position in the world economy as well as the well-being of Canadian consumers. Such a re-examination must come to grips not only with problems of measurement (of the value of non-marketed or intangible services such as research and publicly provided post secondary education, for example), but also with the identification of linkages from service activities to new manufacturing or trading opportunities directly stimulated by service activities.

In conclusion, therefore, the point of this brief overview is to suggest a framework for analysis which reflects the following ideas.

1. It is necessary to spend more time on the identification of the policy problem. For example, in what respects is the growth or performance of the service sector less than satisfactory? By what performance indicators are present arrangements and institutions failing to achieve reasonable goals?
2. It is necessary to cast the analysis of policy with respect to the service sector in terms of the appropriate unit within which action is taken -- the firm or the organization entity -- not in terms of statistical aggregates. The statistical abstractions by which performance might be measured change only in retrospect, and are influenced by policy instruments only to the extent that the actions of firms or individuals are influenced.
3. Analysis of policy must focus on reasons why firms might be precluded from making decisions consistent with agreed goals. Such reasons standing in the way of further growth or development of firms in the service sector might include:
 - problems of capital scarcity or under-capitalization (this report has suggested that this problem may be misidentified)

- problems of inadequate information or inadequate specialized skills (this issue demands considerable further work)
 - social rigidities creating barriers to collective financing, more flexible work force structures, or other organizational changes (this issue also demands further work, but goes far beyond concerns related to the service sector)
4. Policy analysis focussed on barriers to decision-making by the firm leads inevitably to an emphasis on measures governments might take to facilitate decisions, and to achieve greater flexibility through institutional changes designed to reduce barriers to adjustment, and to improve information, signals, and incentives. Such policies include, for example, measures generally to facilitate structural adjustment by encouraging the reallocation of human capital. Specifically:
- Measures to support "lifelong learning" and flexible transitions from training to work and back.
 - More generally, measures for financing human capital formation and for bridging capital market imperfections associated with investment in human capital. (In this connection, contingent repayment financing schemes utilizing the collection capabilities of the income tax system are one obvious possibility).
 - Labour-management cooperation to support a philosophy of "career development" amongst union leaders -- a

philosophy of longer term attachment to an organization, but with less rigid work rules and more flexible redeployment across tasks or within organizational roles. Such a philosophy hinges on effective and acceptable "gainsharing" measures.

- Portable pensions for employees, more flexible pension arrangements (as proposed in the last Federal budget) for the self-employed. For the small enterprises of the service sector, the latter initiative may be particularly important.
- Measures to reduce interprovincial barriers to exchange of services and to improve the functioning of the economic union. (One clear opportunity for government policy in this area is in the famous push for "deregulation" of professional activities.)
- Policies directed toward overcoming the constraints reflecting the scarcity of management skills in small enterprises -- information services -- the "pathfinder" function -- the "guichet unique".

This orientation for policy can be summed up in the observation that the appropriate role for government policy vis-a-vis industry or an industry sector is not to "improve" the firm's performance or decisions, but to improve the environment within which the firm makes decisions. It is to work on the climate, and to facilitate decision-making by individual enterprises, to

facilitate action by firms by working at the margin, not by monolithic state-directed reallocation of resources to achieve aggregate targets.

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APPENDIX A

DEFINITIONS, CLASSIFICATION AND GROWTH INDICES

USED IN VARIOUS SERVICE SECTOR STUDIES

TABLE 1 (continued)

UNITED STATES STUDIES				
Fuchs (1968)	Ginzberg and Vojta (1981)	Shelp (1981)	Singlemann (1978)	Stanback (1981)
			<p><u>Mainly Consumer Services</u></p> <ul style="list-style-type: none"> - Hotels and Other Lodging Places - Personal Services - Auto Repair, Services, and Garages - Miscellaneous Repair Services - Motion Pictures - Amusements and Recreation Services - Private Households <p><u>Governments and Government Enterprises</u></p>	<p><u>Social Services Sector</u></p> <ul style="list-style-type: none"> - Medical and Health Services - Hospitals - Education - Welfare and Religious Services - Nonprofit Organizations - Postal Services - Government - Miscellaneous Professional and Social Services <p><u>Personal Services Sector</u></p> <ul style="list-style-type: none"> - Domestic Services - Hotels and Lodging Places - Eating and Drinking Places - Repair Services - Laundry and Dry Cleaners - Barber and Beauty Shops - Entertainment and Recreational Services - Miscellaneous Personal Services

¹A more complete bibliographic citation for each of the studies considered in Table 1 is contained in a selected reference list which follows on page .

TABLE 1 (continued)

UNITED STATES STUDIES

Fuchs (1968)	Ginzberg and Vojta (1981)	Shelp (1981)	Singlemann (1978)	Stanback (1981)
<p>concludes that there exists no authoritative consensus on either the boundaries or the classification of service industries.</p>	<p>observe convention of national accounting which allocates to services all output that does not come from the goods producing sectors.</p>	<p>no solid definition of "services"; defined service industries in terms of classifications used by the U.S. in its Standard Industries Classification (SIC) System and the U.S. National Income Accounts because they approximate those used by other nations.</p>	<p>classifies thirty-seven intermediate industry groups into six internally homogenous industry sectors for comparative purposes, and to permit an analysis of differences in industry structure in seven selected countries.</p>	<p>organized to distinguish between services that are primarily intermediate as opposed to primarily final outputs; and to acknowledge the different institutional settings - private, public and nonprofit - under which services are provided.</p>
<p><u>AGRICULTURE</u> <u>Industry</u> - Mining - Construction - Manufacturing - Transportation - Communications and Public Utilities - Government Enterprise <u>Service</u> - Wholesale Trade - Retail Trade - Finance and Insurance - Real Estate - Households & Institutions - Professional, Personal, Business & Repair Services - General Government (including armed forces)</p>	<p><u>Goods - Producing Sector</u> - Agriculture - Mining - Manufacturing - Construction <u>Service Sector</u> - Distributive Services (including wholesale and retail trade, communications, transportation and public utilities) - Producer Services (including accounting, legal counsel, marketing, banking, architecture, engineering and management consulting) - Consumer Services (including restaurants, hotels and resorts, laundry and dry-cleaning) - Nonprofit Services - Government Services (including education, health, administration of justice, and national defense)</p>	<p><u>Non Service-Producing</u> - Agriculture - Mining - Construction - Manufacturing <u>Service Sector</u> - Transportation - Communication - Utilities - Wholesale and Retail Trade - Finance, Insurance and Real Estate - Miscellaneous Services - Government</p>	<p><u>Extractive Sector</u> - Agriculture, fishing, forestry - Mining <u>Transformative Sector</u> - Construction - Food - Textile - Metal - Machinery - Chemical - Miscellaneous Manufacturing - Utilities <u>Distributive Services Sector</u> - Transportation and Storage - Communications - Wholesale Trade - Retail Trade (except eating and drinking places) <u>Producer Services Sector</u> - Banking, Credit & Other Financial Services - Insurance - Real Estate - Engineering & Architectural Services - Misc. Business Services - Legal Services</p>	<p><u>AGRICULTURE, EXTRACTIVE AND TRANSFORMATIVE INDUSTRIES</u> <u>Agriculture</u> <u>Extractive & Transformative</u> - Mining - Construction - Manufacturing <u>Services</u> <u>Distributive Services</u> - Transportation, Communication, Utilities - Wholesale <u>Retail Services</u> <u>Nonprofit Services</u> - Health - Education <u>Producer Services</u> - Finance - Insurance - Real Estate - Business Services - Legal Services - Membership Organizations - Miscellaneous Professional Services - Social Services</p>

TABLE 1

Definition and Classification of the Service Sector
A Comparison of Selected Studies¹

	CANADIAN STUDIES			
	Bank of Montreal (1956)	Canada, Department of Regional Industrial Expansion (DRIE) (1983)	Economic Council of Canada (1978)	Magun (1982)
1. Definition of terms and general notes regarding classification of industries.	- sections of the economy not producing goods, but providing a service of some kind.	"service": - a final product which is an intangible, non-material consumption item; contrasted with "service occupation" which is any job relatively removed from the physical manipulation of material goods; "service employment" refers to total employment in all service occupations regardless of the type of industry in which they occur.	distinguish between the service sector and the primary, manufacturing and service sectors; a comprehensive, systematic classification of industries by sector is not developed perhaps because of the general economic subject area addressed, and therefore the classification scheme developed below represents a pulling together of industries listed throughout the scope of the study.	adopts the conventional classification scheme in defining industrial sectors; comments on the difficulties: 1) associated with using intangibility as a measure of service output or 2) in service activities being characterized as being performed close to the consumer.
2. Classification Scheme for Industrial Sectors	<u>Commodity Production and Construction</u> - Agriculture, Forestry, Fishing - Mining - Manufacturing and Hand Trades - Construction <u>Service Industries</u> - Transportation and Public Utilities - Trade i) Wholesale Trade ii) Retail Trade - Finance, Insurance and Real Estate - Service i) Community or Pub. Service ii) Government Service iii) Recreation Service iv) Business Service v) Personal Service	<u>Goods - Producing Sector</u> 1) Primary Industry - Agriculture - Forestry - Fishing and Trapping - Mining 2) Secondary Industry - Manufacturing - Construction <u>Service - Producing Sector</u> 3) Tertiary Industry i) Producer Services (Goods related) - Transportation, Communications & Utilities - Trade - Finance, Insurance & Real Estate ii) Consumer & Public Services - Community, Business and Personal Services	<u>1. GOODS SECTOR</u> <u>Primary Goods Sector</u> - Agriculture - Forestry - Fishing - Mining <u>Manufacturing Goods Sector</u> - Food and Beverages - Tobacco Products - Rubber and Plastics - Leather - Textiles - Knitting Mills - Clothing - Wood - Furniture and Fixtures - Paper and Allied Industries - Printing, Publishing and Allied Industries - Primary Metals - Metal Fabricating - Machinery	<u>Goods Sector</u> a) Primary Goods Sector - Agriculture - Fishing and Trapping - Forestry b) Secondary Goods Sector - Mining, Quarrying and Oil Wells - Manufacturing - Construction - Electric, Gas and Water Utilities <u>Service Sector</u> - Trade (i) Wholesale Trade (ii) Retail Trade - Transportation, Storage and Communication - Finance, Insurance and Real Estate - Community, Recreation, Business & Personal Services - Public Admin. & Defence

TABLE 1 (continued)

	CANADIAN STUDIES			
	Bank of Montreal (1956)	Canada, Department of Regional Industrial Expansion (DRIE) (1983)	Economic Council of Canada (1978)	Magun (1982)
2. Classification Scheme for Industrial Sectors (continued)		- Public Administration and Defence	<ul style="list-style-type: none"> - Transportation Equipment - Electrical Products - Nonmetallic Mineral Products - Petroleum and Coal Products - Chemicals and Chemical Products - Miscellaneous Manufacturing <p><u>2. SERVICE SECTOR</u></p> <p><u>Commercial Service Subsector</u></p> <ul style="list-style-type: none"> - Transportation and Communications - Finance, Insurance and Real Estate - Trade <ul style="list-style-type: none"> i) Wholesale Trade ii) Retail Trade <p><u>Noncommercial Service Subsector</u></p> <ul style="list-style-type: none"> - Government-provided Services <ul style="list-style-type: none"> i) Public Administration ii) Education iii) Hospitals - Business, Professional, Domestic and Personal Services 	

TABLE 2

Service Sector Growth Indices
A Comparison of Selected Studies

Growth Measurement Indicators	CANADIAN STUDIES			
	Bank of Montreal (1956)	Canada, Department of Regional Industrial Expansion (DRIE) (1983)	Economic Council of Canada (1978)	Magun (1982)
1. By employment	YES; on a decennial basis from 1881 to 1951 comparing Canadian and U.S. employment growth; and projecting Canadian industrial sector employment at 1980.	YES; percentage share and percentage change for employment are shown on a decennial basis by: 1) industry sector from 1951 to 1981; and 2) by major service occupational classes for each industry division from 1961 to 1981. However, the actual numbers of those employed by industrial sector or service occupation are not provided.	YES; shows sector employment as a proportion of total employment, and the numbers of individuals employed, for selected years (1946 and 1977).	YES; highlights shares of total persons employed by sector for Canada for related years from 1946 to 1977; and the distribution and numbers of those employed by industry for Canada for 1946 and 1977.
2. Percentage of GNP	NO; considers national income by industry for selected years from 1926 to 1954 for Canada comparative to the United States.	NO	NO; reports GDP, by sector, for Canada, for selected years, 1951 to 1976.	NO; shows industrial sector shares of GDP in constant (1971) dollars for Canada during selected years from 1951 to 1976.
3. By consumption or demand for services.	YES; although data is presented by groups of similar industries; and the quality and quantity of the data varies considerably amongst industry groups.	NO	YES; consider income and price elasticities, by selected personal expenditure category for services and goods in Canada from 1947 to 1976; and the effect of rising per capita income on the consumption of durable and non-durable goods.	YES; looks at consumer and government expenditures on services as a percentage of their total expenditures on goods and services in Canada for selected years from 1961 to 1976 in constant 1961 dollars; the effect of rising per capita income on the consumption of durable and non-durable goods; and income and price elasticities by selected personal expenditure category for services and goods in Canada during 1947 to 1976.

TABLE 2 (cont'd)

UNITED STATES STUDIES				
Fuchs (1968)	Ginzberg and Vojta (1981)	Shelp (1981)	Singelmann (1978)	Stanback (1981)
YES; reports the number of persons engaged annually by sector and major industry group from 1929 to 1965; the percentage of total persons employed by sector and major industry group during the same time period; and the occupational distribution of the labour force by numbers employed and as a proportion of total employment for 1930 and 1960.	YES; provides percentage of the labour force employed by industry sector for selected years from 1929 to 1977; and partially reports the corresponding employment numbers for the same time period.	YES; examines numeric employment growth in services to total non-agricultural employment for 1925, 1950, 1975 and 1979 with comments on estimated 1990 service employment.	YES; covers the percentage distribution of employment by industry sectors and intermediate industry groups from about 1920 to 1970; and projections of labour force distribution by industry sectors in the year 2000 for seven industrialized countries.	YES; shows the numerical and percentage distribution of full-time equivalent employees among industries for selected years from 1924 to 1977.
YES; compares sector shares of GNP in constant and current dollars for selected years from 1929 to 1965; and sector shares of gross product by type of final output in constant and current dollars for 1929 and 1965.	YES; outlines shares of GNP by industry sector for selected years (1948, 1968 and 1978), only partially dealing with corresponding GNP dollar totals; shows the percentage of GNP by type of final product for goods and services for selected years (1948, 1968 and 1978); and reports the percentage of GNP by industry of origin for 1948 and 1978.	YES; looks at U.S. Real GNP of services and non-service components of the economy at an aggregate level from 1947 to 1975, and at a disaggregated industrial division level, annually for 1975 to 1978; shows the percentage of GNP originating in the service sector for 1975 and 1978; and outlines the service sector proportion of GDP for selected OECD countries in 1978.	NO; GNP is referred to in the study but not related directly to services.	YES; outlines the percentage of GNP by industries for 1947, 1959 and 1969 in 1972 dollars; and highlights the relative importance of services in GNP in current dollars, as indicated by industry of origin and type of final product for 1929, 1948 and 1978.
YES; regressed expenditures for services and expenditures for goods on total expenditures across 160 income-education-region-groups.	YES; however only brief mention is given to percentage changes in consumer expenditure patterns towards service from 1948 to 1978.	YES; but only in a very general and limited manner looking at exports, imports and affiliated sales for the U.S. during 1974, and the international national balances of receipts and payments for 1978.	YES; draws a rank-order correlation between national per capita income and percentages of employment in tertiary industries for 1950, 1960 and 1970.	YES; examines the shares of consumer expenditures by general categories and income groups 1972-1973, and the percentage changes in shares between 1961-1962 and 1972-1973, and the percentage of families with electrical appliances and automobiles from 1912-1971.

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