

# CONCEPTUALIZING SERVICES SECTOR PRODUCTIVITY

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## Introduction

This paper, is intended as a theoretical framework for a study on services sector productivity issues in selected Caribbean economies. It is hoped that it will provide an analytical framework for the study of Caribbean services sectors, which account for large shares in the economic activity of the various countries. For, while Caribbean countries do not rank among the world's leading service exporters, services in some cases carry a disproportionate share in the total exports of individual countries. Non-factor services exports as a percentage of total exports range from 33 per cent in the case of Dominica to 86 per cent in the case of Antigua. In addition, services sector GDP contribution ranges from 55 per cent in Dominica and Trinidad to 79 and 81 per cent respectively in Barbados and Antigua.<sup>1</sup>

The paper first defines services, identifying features which distinguish them from goods and differentiates between consumer and producer services. It then explores theories on the role and origin of services in an economy. Finally it examines the concept of services sector productivity, drawing on the pioneering work of Baumol, Fuchs, Briscoe and others. The paper is expected to lay

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<sup>1</sup>World Bank, World Development Report 1987; IMF Balance of Payment Statistics OECS/EAS National Accounts data; Central Bank of Trinidad and Tobago, Handbook of Key Economic Statistics 1989.

the groundwork for further analysis and measurement of services sector productivity.

### Concept and Definition of Services

Adam Smith, in "An Inquiry into the Wealth of Nations" conceptualized services in a negative way. Smith, an eighteenth century economist, was primarily concerned with the way in which accumulation takes place and felt that only material goods production had a role to play in that process. He therefore sought to differentiate between "productive" and "unproductive" labour, describing the former as adding value to an object; the other as having no value. According to his thesis, the worker employed as a manufacturer was productive since he added value to material inputs. The "menial servant" was on the other hand unproductive. Smith held further that the labour of some of the highest orders of society is like that of the menial servants, "unproductive of any value". The conclusion that can be drawn from Smith's arguments then is that service jobs are unproductive.

It may be argued that Smith, like the other classical writers (for example Malthus, Ricardo and Marx) who were concerned with various aspects of the process of accumulation and growth, was preoccupied with the role of the goods-producing sector. Marx, however, while sharing that preoccupation, had a somewhat different concern, that of demonstrating that it was labour, not capital, that was responsible for creating the surplus. The orientation of these writers (products of their time) is understandable. Smith in

particular, wrote at a time when the agricultural revolution had matured and the industrial revolution was in its infancy in Britain. Not only was he pre-occupied with the goods-producing sector; but he felt that manufacturing (together with trade) was the more important source of increased output. In addition, as Sar A. Levithan (Economic Impact No 52) points out,

"Society could afford few services and the emphasis was therefore on producing the tangible goods that were necessary for subsistence. In Adam Smith's day, more than half the population was still engaged in agricultural pursuits" (pp 29-30).

It is probably true to say that some activities which we now classify as services were not recognized as such. D. Riddle (1985) notes that

"Several key changes in the services sector, however, served to stimulate and sustain the Industrial Revolution. In the area of utilities, delivering new sources of power - first coal, then steam - changed the type of technology that was possible in much the same way in which first electricity and then nuclear and solar energy continue to revolutionize the ways in which we live. The necessary technological innovations sprang from professional research activities, grounded in improved educational systems. The transportation improvements made possible through technological innovations facilitated the timely movement of both raw materials and finished goods. Finally, innovations in financial institutions made possible the mobilization of necessary capital" (p. 37).

Marshall (1961), regarded as a neo-classical writer, differs from his predecessors by inferring that man does not really produce material things, but rather produces "utilities". He argues for instance that there is no scientific foundation for the distinction

between the commodity produced by a cabinet maker and the service offered by a trader, since they both produce utilities. Disagreeing with Adam Smith's classification of domestic servants as unproductive, he argues that the superfluity which characterizes the households with many servants can also be observed in activities of the goods-producing sector, such as whisky distilling. The work of domestic servants therefore is not necessarily unproductive. Marshall moreover removes the distinction between goods and services, defining goods as material on the one hand and personal and immaterial on the other; the latter category embodying services.

Modern writers are divided over the question as to whether a distinction ought to be made between goods and services. Richard Walker (1985) for instance, has taken a position somewhat similar to that of Marshall; in that he holds that there is no distinction between goods and services. Writing in some sense in a Marxist tradition, he tends to view output as dictated by the requirements of capitalism. He argues that the shifts to new lines of products/outputs, such as informatics, are the results of a changing capitalist system.

T.P. Hill (1977) holds a divergent position. Highlighting some of the unique characteristics of services, he argues that it is erroneous to class services as goods. He adds that services are characterised by simultaneity of production and consumption and that, in contrast to the producer of goods, the producer of services does not purchase or acquire all inputs into the produc-

tion process. The principal input, the good being serviced, continues to be owned by the consumer.

### Definition

In attempting a definition of a service, one needs to recognise the heterogeneous nature of the activities which comprise the services sector. This diversity creates difficulties in formulating a definition which can be applied universally. Perhaps the most common characteristic of services is their intangibility. Apart from this feature, it is difficult to find elements which are common to all services.

T.P. Hill (1977) defines a service as a change in the condition of a person or good belonging to some economic unit, as a result of the activity of some other economic unit. He argues that services are not capable of being transferred from one unit to another and are characterised by simultaneity of production and consumption. He adds that services cannot be put in stock because a stock of changes is a contradiction in terms. =====

This definition is applicable to a large number of services, for example, certain education and health services, recreational services such as concerts and theatrical performances and other personal services. Increasingly, however, advances in technology have made it possible for some services to be produced in one location at a particular time and to be consumed in another at a later time.

Bhagwati (1987) is of the view that the fact that some services are storable does not detract from the general usefulness of Hill's definition. He himself makes a valuable contribution to the literature on services, making a distinction between services requiring proximity of users and providers and those which do not. The services which must be consumed and produced simultaneously require interaction between providers and users; and may be categorised as follows:-

mobile provider, immobile user, where the provider goes to the user as in the case of labour services.

mobile user, immobile provider, where the user goes to the provider. The service is not transferable geographically eg. tourism.

mobile provider, mobile user i.e. the service is conducted in a location other than the place of residence of provider or user. An example is off-shore medical instruction provided in some Caribbean territories.

In addition to this category of services there is another type which does not require physical proximity of provider and user. Examples are long distance transmissions of live concerts and data. ==

Bhagwati (1984) further elucidates the definition of services by introducing the concepts of "splintering" and "disembodiment". He argues that technical and structural change defines a continuous process during which services "splinter" off from goods and goods "splinter" off from services. The "splintering" process is associated with a "disembodiment effect" in that services embodied in a person (e.g. a live musical performance or a lecture) become disembodied and encapsulated in a good. Technical progress, the

instrument of the change, is said to leave behind a residue of unprogressive services, when goods splinter off from services. On the other hand services which splinter off from goods are seen as technically progressive; given that "splintering" in this sense reflects specialisation which in turn leads to economies of scale. Bhagwati notes also that 'disembodiment' may take place within services, leaving the latter intact i.e. services are simply transmitted electronically to users.

Like Bhagwati, Sampson and Snape (1985) note that transactions may occur without the movement of factors of production or of the receiver of the service. Such services, which may be produced in the exporting country and then traded internationally are termed "separated" services; corresponding to Bhagwati's 'disembodied' services. The authors also add that such services may be incorporated in goods and become identified as goods rather than services. This leads them to assert that the "demarcation of 'goods' from 'services' along a spectrum including books, floppy disks full of retrievable data, drawings of the plan of a bridge and data transmitted telegraphically is not at all clear" (Sampson and Snape, 1985 p.173).

Another important aspect in the definition of services is that some, termed consumer or marketed services, are destined for final consumption, while others, producer or intermediate services, serve as inputs into the production of goods or other services. Because of the inter-linkage between services and the goods-producing sectors, estimates confined to final consumer services understate



the contribution of services in an economy. Thus input/output analysis constitutes a valuable tool in evaluating the services sector's economic contribution.

### Role of Services: Theories

This section summarizes some of the theories advanced as explanations for the development of the services sector. One such theory is predicated on Engel's Law which suggests that as incomes rise, consumers move to higher modes of consumption. Services then are felt to exhibit higher income elasticities of demand than goods. An economy is felt to move through certain stages of development as follows:-

- 1) the pre-industrial stage in which the economy is primarily extractive based on agriculture; mining, fishing, timber and other natural resources.
- 2) the industrial phase in which manufacturing plays a dominant role: in this case a significant shift occurs from agriculture to industry.
- 3) ~~the~~ the post industrial phase in which ~~the~~ the economy becomes mainly a service economy.

Clarke (1960) and Bell (1973) are among the proponents of the "stages" theory. Colin Clarke (1960) classifies industries as primary, manufacturing and services, describing services "as an important residual" (p.375). He examines the distribution of labour between the sectors by considering the effects of increasing real income per head. He concludes that as real income per head increases, the relative demand for agricultural products falls over time; and the relative demand for manufactures first rises, then

falls in favour of services. He adds that real product per man-hour in the manufacturing sector nearly always advances at a greater rate than in other sectors. In a situation of stationary relative demand for manufactures, the proportion employed in that sector would decrease. Even in conditions of increasing relative demand for manufactured goods, the proportion of labour employed in that industry is still expected to decline. Agriculture in most cases shows a fairly steady tendency towards increasing product per man-hour, though not as rapidly as for manufacturing. With the steadily decreasing relative demand, it results in a decline in the proportion of the workforce engaged in agriculture.

Bell in "The Coming of Post-Industrial Society" describes pre-industrial societies as largely extractive, engaged in agriculture, fishing and forestry. He argues that they are characterized by low productivity and large population, giving rise to underemployment which in turn is distributed among the agricultural and domestic-service sectors. Thus there is a high service component; but of the personal or household sort.

In Bell's characterization industrial society is marked by the dominance of goods production. Life is a game against fabricated nature, as machine predominates. Post-industrial society, based on services, is described by him as a game between persons. What counts is not raw muscle power, or energy, but information. Bell adds that in the transformation of industrial to post-industrial society, there are different stages as follows:-

"First, in the very development of industry there is a necessary expansion of transpor-

tation and of public utilities as auxiliary services in the movement of goods and increasing use of energy, and an increase in the non-manufacturing but still blue-collar force. Second in the mass consumption of goods and the growth of population there is an increase in distribution (wholesale and retail), and finance, real estate, and insurance, the traditional centres of white-collar employment. Third, as national incomes rise, one finds, as the theorem of Christian Engel, a German statistician of the latter half of the eighteenth century, that the proportion of money devoted to food at home begins to drop, and the marginal increments are used first for durables (clothing, housing, automobiles) and then for luxury items, recreation and the like. Thus, a third sector, that of personal services, begins to grow: restaurants, hotels, auto services, travel, entertainment sports, as people's horizons expand and new wants and tastes develop".

Ronald Kent Shelp (Economic Impact No 52: A Quarterly Review of World Economics 1985/4), looking specifically at the American economy, observes five categories of services that basically parallel the phases of economic change. These are (1) unskilled personal services (2) skilled personal services (3) industrial services (4) mass consumer services and (5) high technology business services. Shelp's categorization, supports the earlier works (Clarke, Bell) but identifies an additional phase, a reflection of the later time period in which he conducted his analysis.

While the "stages" theory appears to offer an explanation for services sector growth in some developed countries it does not seem to have universal applicability. Riddle notes, for instance:

"Research by Singelmann (1978) shows that the economic development path of Western Europe

regarding employment shifts does not generalize even to Canada and the United States (where labor moved into manufacturing and services concurrently), let alone to Japan (where labor moved into services before manufacturing...) (Riddle 1985, p.6).

The "stages" thesis does not appear to hold much validity when applied to the circumstances of developing countries in general and Caribbean economies in particular. In fact Riddle (1985) holds in respect of developing countries that labour moves out of the extractive sector into both manufacturing and services sectors. The traditional mono-sectoral and externally oriented production structures of Caribbean economies have been well documented. (See for example Girvan, Social and Economic Studies, Vol. 22, 1973). The development of services such as tourism is a deliberate policy aimed at diversifying these economies and creating avenues for generating employment, incomes and foreign exchange. The combination of economic activities being attempted by these countries tends to confirm Shelp's assertion that developing countries "leap-frog" the stages. (Economic Impact No 52 1985/4).

Shelp advances the following reasons for the accelerated progression in service development by developing countries:-

- 1) the demonstration effect facilitated by the communication media;
- 2) the urbanization process which in developed countries follows industrialization; but runs ahead of the latter in the case of developing countries;
- 3) the development strategies followed by developing countries.

The "stages" theory seems to suggest that the services sector is inherently low in productivity. Thus the shift to the tertiary/service sector is regarded as contributing to slowing down the rate of growth of the economy. Another implication of the theory is that an economy which has attained a certain level of development and per capita incomes would automatically experience a rapid increase in the contribution of the services sector in terms of additions to national product and employment. A further implication is that there would be no need for a services policy. Thirdly it implies that developed countries should specialize in the production of services and developing countries in the export of goods.

Another explanation for the growth of the services sector is that service employment grew out of the need to absorb manpower which was structurally in excess; in other words as a reservoir for labour discharged by the goods-producing sector (Momigliano and Siniscalco op cit). This argument holds some validity when applied to the circumstances of developing countries.

~~Yet another~~ theory attributes the growth of the services sector to the changing occupational structure within economic sectors, moreso than with changing demand patterns between them. It is argued for instance that the increased demand for professional, technical, clerical and other specialized service occupations relative to other employees within each sector accounts for much more of the increase of employment in these types of occupations than the increase in demand for service industry products. It has been noted in particular that the reorganization of firms in

response to the rapidly expanding information technology sector has had a positive impact on the growth of services. The introduction of modern communications and information technology has revolutionized manufacturing processes. More automated forms of production require less input of physical labour and materials and more input of information and knowledge. The result is a sharp increase in the need for professional services by scientists, engineers, designers, computer programmers and managers relative to the need for blue collar labour. The end-product therefore contains more information and knowledge inputs than was the case in the past. (Economic Impact No. 52 1985/4).

Conventional theories of services sector development have tended to de-emphasize the role of the services sector in economic development. As Riddle (1985) notes, the Bell-Clark-Fisher theses, although not intentionally, have fuelled the type of thinking which relegates services to a post-industrial (Bell), residual (Clark) and tertiary (Fisher) sector. Riddle departs from this passive approach by emphasizing that the services sector " is a ~~vital~~ force in stimulating and facilitating economic growth" (p. 22). She adds

"Rather than being peripheral or luxury economic activities, services lie at the heart of any functioning economy" (p. 26).

Using an interactive model to highlight the interdependence of the various sectors, Riddle notes

"The services sector is in truth, the facilitative milieu in which other productive activities become possible (p. 26).

Strong support for this interactive model can be found in Momigliano and Siniscalco (1982), who argue in respect of the Italian economy that the growth of service employment can be explained in terms of structural change in the productive system, that is, it derives "from a growing use of activities classified in the branches of the tertiary sector, but integrated into the productive system and into industry in particular" (p. 276).

Francois (1990), in a study of the U.S. economy over the period 1929-85, supports this thesis; arguing that while the share of services in final demand expenditures increased dramatically, the most dramatic growth in services has been in producer or intermediate services, rather than consumer services. He explores the relationship of producer services to market expansion and integration of the division of labour, highlighting the role of services as a complement rather than a substitute to the manufacturing process.

#### Services Sector Productivity Issues

This section of the paper looks at the evidence supporting the lagging services sector productivity thesis, explores the unique features of services in relation to productivity and looks at the factors affecting productivity in services as well as the manner in which certain services might enhance productivity in other sectors.

Reference has been made to the "stages" theory which suggests that the services sector is inherently low in productivity. Some writers have sought to refine the theory and more importantly to

conduct empirical investigations into the causes of services sector growth. They explain the latter in terms of the difference in the dynamics of productivity between services and industry. Momigliano and Siniscalco (op cit) state:

"The lower growth of productivity in the tertiary sector is alleged to be caused either by smaller opportunities of embodying technical progress in that sector or by the smaller exposure of the services sector to competition" (p.272).

Fuchs and Baumol (Inman, 1985), on the basis of data on the U.S. economy, sought to investigate the factors contributory to the emergence of the services sector; and have concluded that differential labour productivity growth was the main explanatory variable in services sector growth. Fuchs tested three hypotheses:

1) Services have an income elasticity greater than 1, so that as real income per capita increases real services per capita grow more than in proportion to the growth in income. Thus services consume an increasing share of national income, as well as employment.

2) As specialization and automation increase with economic growth, it becomes efficient for services once ~~provided~~ within the household or firm to be contracted out to specialists. Such services include legal, accounting and data processing, restaurants, day-care and housekeeping. Increased specialisation may lead to higher service quality and/or lower average costs which would increase demand for, and production of such services.

3) The relative importance of services in national employment is explained by slower relative growth of labour productivity in services than in agriculture and industry. This means higher than average costs for services. If the demand for services is relatively insensitive to prices, then as the economy expands, services share of total employment will increase.



Fuchs concludes, from an examination of data for the period 1929-1965, that although each hypothesis is valid and contributes to an explanation of services sector growth in the U.S., the major explanation is provided by the service sector's lagging productivity.

Baumol, whose findings are similar, notes that lagging productivity accounts for 55 per cent of the annual rate of change in the services sector; compared with 14 per cent in the case of the rising income hypothesis and 31 per cent for the exogenous demand shifts hypothesis.

Saxonhouse (Ed. Inman 1985), in studying the Japanese case, has come to somewhat similar conclusions as Fuchs and Baumol. He attributes the growth in services to lagging productivity in the services sector as well as the structure of Japan's wholesale and retail trade for the distribution of goods.

Briscoe in a comparison of labour productivity between the manufacturing and services sectors of the United Kingdom (1951-~~73~~) concludes that there is a ~~significant~~ long-term differential in favour of the manufacturing sector. He notes however that when allowance is made for data inadequacies in defining the services sector, this long-run differential is appreciably reduced. On the basis of short run estimates, sectoral productivity growth rates showed considerable variability. There was however no certainty that the differential was narrowing over time.

Briscoe provides an explanation for the differential productivity growth rates in terms of the marked growth in the

numbers of employees in services and the relatively higher rate of increase in the price of services [i.e. wage demands have kept pace with those in the more productive sectors].

An important observation was that within the services sector there are wide differentials, with the relatively more capital-intensive sub-sectors eg. public utilities, transport and communications exhibiting higher rates of growth. Moreover the average growth rate for these three activities exceeds that for the manufacturing sector. Briscoe concludes by recommending "continuing high levels of investment in the more labour-intensive services, so as to increase the productivity growth of industries which are absorbing an increasing proportion of the nation's labour resources." (p.278).

Kirkland (Economic Impact No. 52, 1985/4) also holds the view that service productivity differs depending on the type of service and that much of modern services growth tends to be in activities which are capital-intensive and technically progressive. Looking at the American economy, he distinguishes between low technology, low-pay end jobs and the high-paying, high-technology service jobs. Admitting that the former account for the bulk of service jobs, he notes however, that the latter are the fastest growing service occupations. He notes that computers, which are reshaping service jobs and enhancing their value, will play a big role in bringing about a shift in the job spectrum. In fact, service industries are the biggest buyers of the new information; purchasing more than 80

per cent of the \$25 million worth of computers, office equipment and communications equipment shipped in 1982.

What is more important in the context of this paper, however, is a determination of the impact of these investments on services sector productivity. A recent study on the U.S services sector has painted a gloomy picture. The author holds that service companies, not exposed to much competition, have "allowed their white collar payrolls to become bloated, their investments in information technology to outstrip paybacks, and their productivity to stagnate" [Roach in Harvard Business Review Sept-Oct. 1991].

Just as the services sector is found to consist of a variety of sub-sectors, with differing susceptibility to productivity changes, so too it consists of a heterogeneous bunch of occupations, which may be classified on the one hand as "knowledge workers" - including managers, executives and professionals; and on the other, as service workers - ranging from sales workers and secretaries to bank tellers and computer operators. Roach argues that ~~investment~~ in information technology has ~~not~~ improved the productivity of the white collar worker.

This position is supported by Drucker [Harvard Business Review Nov-Dec 1991] who also makes a distinction between knowledge workers and lower-skilled service employees. He argues that knowledge workers will always be in the minority, outnumbered by those qualified for low-skilled service jobs. The logical conclusion then is that in order to raise the U.S growth rate, ways would have to be found to improve the productivity of the

lower-skilled. Drucker also argues that investment in the services sector has brought with it the need for more highly paid people, but has not reduced the existing staff by a single person.

Another observation was that knowledge and service jobs can be divided into three categories by looking at what productive performance in a given job actually represents. For some jobs, performance means quality; for others it means quality as well as quantity and in other cases it may be confined to a quantity indicator. Efforts to raise the productivity of service workers should start by defining the task and performance criteria. Implicit in these performance criteria is the fact that productivity measures in the case of the services sector cannot be confined to quantity indices. Some quality measure needs to be incorporated:

An important point to note when examining productivity is that the special nature of services demands a different treatment of the concept. Levithan (Economic Impact No. 52, 1985/4) notes for instance that ~~increased~~ productivity is not always desirable. He cites the examples of smaller class size (in schools) as preferable to larger; and treatment of patients by surgeons as if on an assembly line as undesirable. The preference then in these two cases ought to be to trade off increased productivity for more highly skilled personal service. The other point made by the author is that there is great variance in the growth of productivity in service industries.

Given the heterogeneous nature of the services sector, meaningful productivity measurement and analysis requires that the sector be disaggregated. Baumol [Inman, 1985] notes that services differ according to their susceptibility to productivity growth. He therefore categorizes them into stagnant personal services, progressive impersonal services and asymptotically stagnant impersonal services. Stagnant personal services are defined as activities in which quality is highly correlated with labour-time expended and in which frequently there must be contact between service provider and consumer. The product is often not standardized. This type of service has been the basis of the assertions that services resist productivity change.

The progressive impersonal services are at the other end of the spectrum. Being heavily dependent on electronics, there need not be contact between the provider and user. In addition technological innovations have resulted in cost reductions.

The asymptotically stagnant impersonal services constitute an amalgam between the progressive and stagnant services. They may at one point outperform the progressive; but productivity growth is self-extinguishing. Computing for example, involves both hardware and software inputs. The former is automated, therefore progressive; the latter is dependent on human input and belongs to the stagnant sector.

The progressive impersonal services are not only significant from the point of view of their tendency towards productivity growth; but also in terms of their potential for impacting

favourably on the productivity of other sectors such as manufacturing. New manufacturing techniques such as flexible manufacturing systems [FMS], just-in-time [JIT] and computer-assisted designing [CAD] are all information driven and therefore highly dependent on computerization and telecommunications links [Charles, 1992].

### Conclusion

The survey of the literature leads one to conclude that the concept of services is a complex one; that services may be distinguished from goods by virtue of their intangibility and that the majority are characterised by simultaneity of production and consumption. There is another class of services which may be transmitted electronically and therefore performed without necessitating the movement of either service provider or receiver. It is the latter which have transformed the services sector and enhanced its tradeability.

Theorists are not agreed on the origin or role of services within an economy. Some have posited a "stages" theory whereby the economy is said to move to superior modes of consumption, as a result of rising per capita incomes; being transformed from primary to industrial and finally to services sector. Another theory proposed is that of the exogenous demand factors i.e. the trend towards intra-firm reorganisation leading to increased demand for specialized services. Finally the marked shift towards the growth of producer services is seen by some theorists as emanating from structural changes within the productive sector, which have

increasingly encouraged the integration of the services and other sectors, particularly manufacturing. Increasingly the lagging services sector productivity idea, implied in the "stages" theory, is being advanced as an explanatory thesis for services sector growth.

Services sector productivity analysis and measurement constitute a complex and intriguing proposition, given the heterogeneous nature and intangibility of services. Some services appear to be amenable to achieving productivity gains, while others appear to be resistant to the same. Most of the studies in this field have been confined to developed/industrialized countries. It is intended that this conceptual framework will form the basis for empirical work on selected Caribbean countries.

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