The Role of Services in Employment Expansion

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WITH THE EXCEPTION of a few recent empirical studies [2], economic literature has continued to neglect the growing services sectors of the less developed countries. While writers like Kuznets, Stigler and Fuchs [3] have, it is true, done a great deal to meet Colin Clark's complaint that " the economics of tertiary industry remains to be written ", most work in this field has focused on the economy of the United States or the advanced countries of Western Europe.

Attempts to explain the relatively faster growth of employment in the services sector (particularly in the developed economies) have usually adopted one of three main approaches:

(a) *the income and expenditure approach* [4], which uses the structure of demand as an explanatory variable, i.e.

$$\epsilon_s > 1 > \epsilon_g \quad \text{or} \quad \frac{Y_s}{C_s} \cdot \frac{\Delta C_s}{\Delta Y_s} > 1 > \frac{Y_g}{C_g} \cdot \frac{\Delta C_g}{\Delta Y_g}$$

where ϵ is the income-elasticity of demand, C is consumption, Y is income and the subscripts s and g stand for services and goods respectively;

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[2] Walter Galenson: " Economic development and the sectoral expansion of employment ", in *International Labour Review*, Vol. LXXXVII, No. 6, June 1963, pp. 505-519; Gur Ofer: *The service industries in a developing economy. Israel as a case study* (New York, Washington, London, Frederick A. Praeger in co-operation with the Bank of Israel, 1967); and J. N. Sinha: " Employment in trade—the Indian experience ", in *Indian Economic Journal* (Bombay), Vol. XVI, No. 1, July-Sep. 1968, pp. 53-67.

[3] Simon Kuznets and Milton Friedman: *Income from independent professional practice* (New York, National Bureau of Economic Research, 1945); George J. Stigler: *Trends in employment in the service industries*, National Bureau of Economic Research, General Series, No. 59 (Princeton, University Press, 1956); and Victor R. Fuchs: *The service economy*, National Bureau of Economic Research, General Series, No. 87 (New York, London, Columbia University Press, 1968).

[4] Colin Clark: *The conditions of economic progress* (London, Macmillan, 1940).

(b) *the productivity approach* [1], which ascribes employment growth in services to that sector's relatively slower growth of productivity, i.e.

$$\frac{\Delta\left(\frac{Y_s}{L_s}\right)}{\left(\frac{Y_s}{L_s}\right)} < \frac{\Delta\left(\frac{Y_g}{L_g}\right)}{\left(\frac{Y_g}{L_g}\right)}$$

where L is labour; and

(c) *the employment approach* [2], which correlates tertiary employment with manufacturing employment, i.e.

$$\frac{\Delta L_s}{L_s} = f\left(\frac{\Delta L_m}{L_m}\right)$$

where L_m is manufacturing employment and L_s is employment in services.

In varying degrees the above explanations of sectoral labour allocation are relevant to the situation in the less developed countries. However, each of them accounts for only a part of the total labour force engaged in the services sector.[3] For instance only a small proportion of tertiary employment in the less developed labour surplus economies is a function of the income-elasticity of demand for services. The bulk is to be found in such traditional and unorganised services as shoe-shining and petty retail trades bearing no observable relationship to effective labour demand. Here the supply of labour creates its own employment opportunities by sharing out a given total amount of work. Even the expansion of employment in public administration and government services—sectors commonly regarded as typifying modern development—may reflect a social need to absorb labour which would otherwise be redundant. In conditions of excess labour supply the efficient or optimum utilisation of *some* manpower resources may be considered less essential than the inefficient utilisation of *all* or *most* of them. Hence the overcrowding of government services when there is large-scale unemployment among the better-educated.

[1] Fuchs, op. cit.

[2] Galenson, op. cit., and A. H. Tulpule: "Towards an integrated model of distribution of service employment in the non-central areas of Greater London", in *Bulletin of the Oxford University Institute of Economics and Statistics*, Vol. 30, No. 3, Aug. 1968, pp. 207-229.

[3] For the purpose of the present paper the services sector is defined to include commerce, government and professional services, and personal and domestic services. Basic services, viz. transport and communications and gas, water and electricity, are excluded from services since they generally bear a greater resemblance to industry in respect of the nature of organisation, scale of production and capital intensity of technology. In the less developed countries, it is true, traditional modes of transportation may be quite labour-intensive.

Modern versus traditional services

It is clear then that the entire labour force absorbed in the services sector cannot be considered as either demand-induced or a " residual " category. For a proper economic analysis, therefore, it would be useful to disaggregate total services employment into its " modern " (demand-determined) and " traditional " (supply-determined) components. The " characteristics of labour " criterion provides a tentative though not a very satisfactory answer to the problem of separating data and of analysing growth of employment in the services sector. As a rough approximation, all wage-earning and salaried employment (WSW) may be considered as " modern ", whereas all non-wage or self-employment (SEW) and unpaid family labour (FW) may be deemed " traditional ".[1] This division has distinct advantages. First, it helps to identify systems of employment under which the pattern of economic organisation, the nature and structure of remuneration, and the level and types of skills are very different. Second, a distinction between wage-based and family-based self-supporting labour helps to explain the existence of infinitesimal or even zero earnings in self-employment.[2] Third, it shows up the limitations of the popular interpretation of Colin Clark's thesis that, at higher levels of income per head, a redistribution of labour takes place in favour of the services sector. The fact that the services sector's share of the labour force is quite large in countries with low income levels does not necessarily invalidate Clark's proposition, which applies mainly to the " modern ", demand-induced types of services. The concept of income-elasticity of demand does not explain a large proportion of the self-supporting labour in " traditional " services which inflates the services' share in the total labour force.

[1] Using the criterion of numbers employed—establishments employing ten or fewer workers being considered " traditional " and those employing more than ten " modern "—is simple but not very satisfactory in the case of many services such as public administration and domestic and personal services. It has also been proposed to classify the economically active population according to three different levels of productivity: high, medium and low (Zygmunt Slawinski: " The structure of manpower in Latin America: evolution during the past few decades and long-term prospects ", in *Problems of human resources planning in Latin America and in the Mediterranean Regional Project countries* (Paris, OECD, 1967). The productivity criterion has its limitations too, however. It is well known that output and productivity are not very meaningful concepts in the case of many services. Even apart from the conceptual problems, the difficulties of measurement are too formidable to be easily overcome.

[2] The fact of zero or even negative earnings can be illustrated by the example of street fruit-sellers. The spoilage of perishables is likely to result in losses so, towards the end of the day, in an attempt to dispose of all their supplies and thus minimise losses, the fruit-sellers may often have to reduce their prices to cost or below it. It is true that it is impossible to survive at zero earnings. But under the automatic distributive mechanism that works through the extended family system, a subsidy or transfer income enables workers to survive on very low earnings.

Admittedly, the situation with respect to self-employment in the less developed countries is very complex. All self-employment or own-account employment may not be of a traditional character. It may be argued that many professional services such as those of physicians and lawyers represent a " modern " element. At least conceptually this difficulty can be circumvented by using the existence of a job as a criterion to separate the modern type of self-employment from the traditional. Of the " service-type " occupations, business professions could be considered as modern on the assumption that their employment is a function of an effective demand for their services.[1] On the other hand, such service occupations as salesmen in petty trade and self-appointed parking attendants working for tips are simply the consequence of excess labour supply.

In the pages that follow an attempt is made to disaggregate employment in the major services subsectors of China (Taiwan) and the Philippines. The choice of these countries is only partly determined by the availability of requisite data.[2] They are also interesting for purposes of comparison, since in the case of Taiwan industrial and over-all economic growth has been exceptionally rapid for the past several years, whereas in the Philippines the growth rates of income and of its industrial component have both been relatively slow.[3] Irrespective of these differences, the labour absorption in the services sectors of the two countries has been quite rapid. In the case of Taiwan, during the decade 1955-65, employment grew fastest in the professions and government services. While total employment grew at a rate of about 2 per cent per annum, employment in government services grew by 5.2 per cent and in the professions by about 5.8 per cent per annum. In the Philippines, too, the heterogeneous category of " government, community, business and recreation " recorded the most rapid growth in employment, while commerce was not far behind. The services sectors as a whole accounted for a substantial proportion of additional employment—about 46 per cent in Taiwan and 34 per cent in the Philippines.

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[1] Employment of some professionals, e.g. lawyers, in the less developed countries may not necessarily reflect an effective demand for their services but rather an over-supply.

[2] For the Philippines the period 1958-64 has been chosen since the time series between May 1958 and May 1964 seem to be more regular than over a longer period. Moreover, from May 1965 onwards the sample design of households has been changed. There is also a substantial difference in the urban-rural definitions used in the new sample. Thus " estimates from the surveys conducted under the old design are not directly comparable with those from the May 1965 survey " (Bureau of the Census and Statistics, Republic of the Philippines, Special Release No. 25, May 1966).

[3] In Taiwan the gross domestic product over the period 1960-65 grew at an annual rate of 9.2 per cent and its component originating in industry at 11 per cent per annum. Over the same period the corresponding figures for the Philippines were 4.4 per cent and 6 per cent (United Nations: *World Economic Survey 1967*. Part One. *The problems and policies of economic development : an appraisal of recent experience* (New York, 1968), table 6, p. 20).

Self-employment versus wage-employment

Urbanisation and monetisation of traditional subsistence sectors normally bring in their wake a shift towards tertiary employment. There is some scattered evidence that at least a part of the migrants go into " service-type " occupations. The occupational distribution of the migrants and non-migrants revealed by a recent sample survey in a metropolitan area of Taiwan demonstrated that the largest shift of migrants was into sales and service occupations (over 30 per cent) and not into skilled or semi-skilled factory jobs.[1] However, what is less clear is whether urbanisation also leads to a shift from self-employment to wage employment. In the case of " modern " services, which with few exceptions provide greater opportunities for self-employment, responsiveness to urbanisation may not necessarily show itself in the diminution of self-supporting labour. The relative importance of self-employed workers and unpaid family labour in services needs to be empirically determined. Recognising the formidable data and conceptual limitations [2], the ratios of self-employed to wage-employed (SEW/WSW) and of family labour to wage labour (FW/WSW) for each of the major subsectors of the services sector have been estimated. These ratios are presented in tables I and IA along with the average annual rates of change of wage and salary workers (WSW), self-employed workers (SEW) and family labour (FW) over the stated periods.

In the Philippines (table I), the SEW/WSW ratio was quite high in manufacturing in both 1958 and 1964, coming immediately after agriculture, commerce and personal services. So also was the FW/WSW ratio. Between 1958 and 1964 both these ratios declined considerably in agriculture, manufacturing and commerce, thus suggesting a gain of

[1] This survey considered a sample frame for male migrants who had moved to the city of Taichung over a two-year period. The age range of 23-42 was chosen to provide a sample of primary migrants with an age span of twenty years. A sample of non-migrants was also taken for purposes of comparison (see Aldine Speare, Jr.: " The determinants of rural-urban migration in Taiwan ", a paper presented at the 1969 Annual Meeting of the Population Association of America). In an earlier survey undertaken in 1964 three types of migrants were considered, viz. commuters, seasonal workers who worked temporarily for others, and long-term employees who left their farms and worked permanently in the cities. Most male commuters worked as public officials and teachers, whereas the largest proportion of female commuters went into factories. About 6 per cent of the seasonal workers worked as coolies and domestic servants. The long-term male workers found employment mainly as factory workers, public officials, teachers and clerks. The female workers in this category were absorbed as maidservants, factory girls and barbers (Y. C. Tsui and T. C. Lin: *A study on rural labour mobility in relation to industrialisation and urbanisation in Taiwan*, Chinese-American Joint Commission on Rural Reconstruction, Economic Digest Series, No. 16, 1964).

[2] For example shifts between paid and unpaid employment seem to cause statistical difficulties. This substitution of activities, which occurs even in developed countries (witness the virtual disappearance of paid domestic servants), tends to affect the proportion of labour engaged in the services sector. In some cases the enumerators may also classify many unpaid family workers as persons not in the labour force. The concept of labour force in general has only a limited meaning in the less developed countries, where it is extremely hard to distinguish between the economically active and non-active population.

TABLE I. PHILIPPINES: SELF-EMPLOYMENT AND WAGE EMPLOYMENT: RATIOS AND ANNUAL RATES OF CHANGE, 1958-64

(Percentages)

Sector and sex	Ratio				Average annual rate of change, 1958-64		
	SEW/WSW		FW/WSW				
	1958	1964	1958	1964	WSW	SEW	FW
Both sexes :							
Agriculture	505.3	358.8	448.7	330.4	7.6	1.6	2.2
Manufacturing	108.5	73.6	46.6	25.2	6.8	0.2	−2.9
Construction	4.0	5.9	2.0	1.5	4.3	11.2	0.0
Commerce	248.5	206.9	81.2	67.9	9.8	4.0	6.6
Government, community, business, recreation	7.3	6.8	1.4	1.1	6.8	5.5	3.0
Domestic services	1.1	—	1.4	—	2.1	−12.2	—
Personal services other than domestic	180.3	215.6	24.2	56.2	−0.6	2.4	14.4
Males :							
Agriculture	603.8	440.3	332.9	248.8	7.2	1.7	2.1
Manufacturing	33.7	25.6	10.7	9.0	6.2	1.4	3.3
Construction	4.0	5.3	1.6	1.2	4.2	9.2	0.0
Commerce	141.1	119.2	24.1	40.2	6.5	3.6	15.9
Government, community, business, recreation	8.0	8.2	1.6	0.6	5.4	6.0	−6.9
Domestic services	—	—	6.3	—	−0.2	—	−12.2
Personal services other than domestic	153.3	128.9	16.6	26.3	3.9	1.1	12.2
Females :							
Agriculture	156.7	94.0	859.4	595.6	8.7	.	2.3
Manufacturing	230.1	144.6	105.0	50.2	7.8	.	−3.7
Construction	—	—	—	—	—	—	—
Commerce	576.2	324.2	198.3	106.6	14.9	4.3	3.6
Government, community, business, recreation	6.8	5.1	—	1.5	8.9	3.8	—
Domestic services	0.7	0.3	0.3	—	2.5	−6.9	−12.2
Personal services other than domestic	208.3	356.0	25.0	104.0	4.5	2.8	18.9

Source: Bureau of the Census and Statistics: *Philippine Statistical Survey of Households Bulletin* (Manila).

— denotes not reported in sample households.

. denotes negligible.

wage employment over self-employment. However, in the case of " personal services other than domestic ", the ratios experienced sharp increases. Self-employment, including family labour, gained in importance when the growth rate of wage employment was negative. In construction too, self-employment (but not unpaid family labour) increased relative

to wage employment. Between sexes, while male self-employment declined and family labour gained in importance in the personal services, females showed tremendous gains in both self-supporting and wage labour. In commerce, on the other hand, both female and male self-employment declined, whereas the ratio of family labour to wage earners increased in the case of males and decreased in the case of females. This pattern of male employment in commerce seems to suggest the possibility of switching between self-employment and unpaid family work.

In Taiwan the ratio of self-employment as well as of unpaid family labour to wage employment declined in commerce generally and in the retail trade for both males and females (table IA). However, the ratio of family labour to wage employment increased slightly for the wholesale trade. Both self-employment and unpaid family labour played a minor role in manufacturing, where between 1961 and 1966 these two categories in fact registered a rapid decline. Commerce, wholesale as well as retail, and recreational services witnessed a phenomenal growth of wage labour. The annual rate of increase of family labour was also significant (with the exception of manufacturing) although self-employment in general increased less rapidly.

The above observations can be summarised in symbols as follows (for convenience we substitute L_s for SEW and L_w for WSW and denote time by the subscript t):

$$\frac{d(L_s/L_w)}{dt} > 0 \text{ when } \frac{\Delta L_w}{L_w} < 0 \quad \ldots\ldots\ldots \text{(Philippines)}$$

$$\frac{d(L_s/L_w)}{dt} < 0 \text{ when } \frac{\Delta L_w}{L_w} > 0 \quad \ldots\ldots\ldots\ldots \text{(Taiwan)}$$

Thus the relative growth of self-supporting labour varies inversely with the growth of wage-earning opportunities, i.e. $dL_s/dL_w < 0$. As a special case, it may be assumed that change in self-employment need not be determined by the growth of wage employment. It may be argued that the institutional factor of a general disinclination to work for an employer, which is reinforced by the existence of the extended family system providing cheap and unpaid labour, tends to encourage self-employment. The observations relating to Taiwan and the Philippines do not seem to bear this out, however. Instead, they suggest an institutional preference for wage employment as a means of reducing risks and achieving greater stability of incomes.[1]

[1] A preference for self-employment would indeed have an important implication for employment policy. If a part of the workforce preferred to work on its own account, even at low earnings, the need to create wage-earning jobs would be diminished and the level of the money wage militating against employment expansion would become irrelevant. In this context it is interesting to note that Meade proposed self-employment as one of the solutions for the unemployment problems of Mauritius (J. E. Meade: " Mauritius—a case study in Malthusian economics ", in *Economic Journal* (London), Sep. 1961).

TABLE IA. TAIWAN: SELF-EMPLOYMENT AND WAGE EMPLOYMENT: RATIOS AND ANNUAL RATES OF CHANGE, 1961-66

(Percentages)

Sector and sex	Ratio				Average annual rate of change, 1961-66		
	SEW/WSW		FW/WSW				
	1961	1966	1961	1966	WSW	SEW	FW
Both sexes :							
Manufacturing	13.3	7.3	8.4	3.5	8.3	−3.5	−6.6
Commerce	157.8	106.4	98.3	78.1	13.6	4.9	8.4
Wholesale trade	20.9	11.5	8.9	9.4	13.1	0.5	14.4
Retail trade	304.0	188.2	193.7	137.5	15.9	5.4	8.3
Banking and financial institutions	—	2.3	—	1.2	6.2	—	—
Personal services	69.6	59.7	40.9	37.4	4.1	1.0	2.2
Recreational services	19.8	13.7	8.4	8.3	22.4	13.8	22.3
Males :							
Manufacturing	17.8	8.6	7.5	3.3	6.7	−5.8	−6.6
Commerce	139.1	98.9	48.7	40.3	12.1	4.7	8.0
Wholesale trade	21.7	12.8	6.0	6.1	10.8	0.1	10.8
Retail trade	271.2	170.6	96.5	68.9	14.9	5.3	8.0
Banking and financial institutions	—	2.5	—	0.7	5.0	—	—
Personal services	87.1	87.4	29.2	30.7	.	.	1.0
Recreational services	24.1	14.1	5.7	6.3	21.5	9.1	23.8
Females :							
Manufacturing	4.4	5.1	10.3	3.8	10.9	14.3	−6.6
Commerce	242.0	131.2	322.6	203.9	19.1	5.5	8.1
Wholesale trade	16.7	7.6	23.4	19.6	22.8	5.0	18.5
Retail trade	434.2	251.5	578.8	383.7	17.9	5.6	8.5
Banking and financial institutions	—	1.8	—	2.2	8.9	—	—
Personal services	51.7	40.0	52.8	42.2	7.8	2.4	3.1
Recreation services	15.1	13.3	11.3	10.3	23.7	20.8	21.3

Source: Second and Third Industrial and Commercial Censuses of Taiwan, 1961 and 1966.

— denotes that no figures were reported for owner-operators and unpaid family workers. Total persons engaged consisted of employees only.

. denotes negligible.

The Philippine case, where the ratio of self-employed labour to wage labour increased in personal services when the growth of wage employment was negative, seems to suggest that the product-mix or the composition of demand in this subsector, given the total demand, changed in favour of traditional services such as barber shops, laundering, cleaning and dyeing, at the expense of " modern " commercial and wage-based

services such as hotels, restaurants and lodging houses.[1] Otherwise the shift from wage employment to self-employment would have seemed unlikely. Secondly, such a shift may also occur when continued non-commercialisation of traditional services is accompanied by a decline in the growth of wage employment in the commercialised services. This phenomenon of shifts between self-supporting labour and wage labour in accordance with changes in the product-mix does not seem to be peculiar to services. In the Philippines the traditional sector was quite predominant even in manufacturing. This is reflected in the large shares of self-employed workers and family labour in total manufacturing employment. Although these shares declined in 1964, they were still as high as 37 per cent and 12.8 per cent of the total respectively. It is worth noting that employment in manufacturing as a proportion of total employment also declined from 12.2 per cent in 1958 to 11.8 per cent in 1964.

Under equilibrium conditions, the allocation of total labour in the services sector into the wage (L_w) and non-wage (L_s) components (assuming perfect substitutability) will be governed by the rule that the marginal rate of substitution between L_s and L_w equals their price ratio, i.e. $dL_s/dL_w = p_s/p_w$. So will the ratio of their marginal products be equal to the ratio of their prices. If we postulate factor price equalisation, which should be expected when L_s and L_w have the same skills and are freely substitutable, then $p_s = p_w$ and $p_s/p_w = 1$. In reality, however, allocative equilibrium may instead be represented by $p_s/p_w = 1-k$, where k is a constant which denotes institutional rigidities, factor immobility and market imperfections. Thus, under conditions of equilibrium, factor price differentials may continue to exist. Various explanations have been presented for the so-called " wage gap " between capitalistic wage-based production and family-based activities, viz. greater social costs of labour in wage employment, effects of unionisation and trade union pressures which do not influence earnings in self-supporting business, and wage-efficiency relationships under a wage-based system.[2] However, little emphasis seems to be placed on the fact that it is not in the economic interests of self-employed labour to bid down the wages of their relatives working in the wage sector. Under the distributive mechanism of the extended family system income is shared by the wage earners as well as the self-employed. Those working for themselves in low-earning occupations are the beneficiaries of income transfers from their wage-earning relatives, a decline in whose wages is most likely to reduce the size of these

[1] The indices of employment based on the data of 1,289 co-operating establishments in the Philippines indicate a decline of about 4 per cent in the case of hotels and lodging houses and an increase of about 27 per cent in the case of laundering, cleaning and dyeing between 1958 and 1964 (Central Bank of the Philippines: *Statistical Bulletin* (Manila)).

[2] For a succinct summary of various explanations of the wage gap see Amartya K. Sen: " Peasants and dualism with or without surplus labor ", in *Journal of Political Economy* (Chicago), Vol. LXXIV, No. 5, Oct. 1966.

transfer payments. It is thus uncertain that income maximisation would occur if all those in precarious self-employment flooded the labour market.[1]

Changes in the relative prices of wage and non-wage labour would affect labour absorption in each category. Within the services sector, lower average earnings in self-employment than in wage-earning activities point to a relatively greater absorption of labour in self-supporting business. Secondly, if the average earnings (or their rate of increase) in services are lower than in industry or the economy as a whole, then the capacity of the services sector to absorb labour might be considered greater.

The data on income from self-employment and wage employment in China (Taiwan) are of relevance. Table II indicates the ratios of prices of self-supporting and wage labour and the rates of change of average

TABLE II. TAIWAN: RELATIVE AVERAGE REAL EARNINGS, 1961-66

Sector	Price ratio (p_s/p_w), 1961		Price ratio (p_s/p_w), 1966		Ratio of average earnings in each sector to earnings in "industry and commerce"		Ratio of rate of increase of average earnings in each sector to rate in "industry"
	(1)	(2)	(1)	(2)	1961	1966	1961-66
Manufacturing . . .	0.35	0.21	0.67	0.45	0.94	1.00	1.16
Commerce	0.91	0.56	1.13	0.65	0.93	0.81	0.67
Wholesale	0.96	0.67	1.23	0.68	1.48	1.11	0.31
Retail	1.16	0.71	1.28	0.74	0.80	0.73	0.79
Commodity brokerage	0.71	0.47	0.40	0.29	1.73	2.03	1.40
Recreation services .	1.74	1.22	1.33	0.83	1.10	0.93	0.59
Personal services . .	2.23	1.17	1.97	1.21	0.91	0.69	0.34

Source: Second and Third Industrial and Commercial Censuses of Taiwan, 1961 and 1966.

Labour income from self-employment was derived from estimates of owner-disbursements by assuming that it was 85 per cent of owner-disbursements in manufacturing, 90 per cent in commerce and 95 per cent in other services. The choice of these percentages is arbitrary. There is a possibility of downward bias since in a census or survey in the less developed countries people are often reluctant to give their true income for fear that the data will be used for tax purposes.

Money earnings were deflated by a general consumer price index with 1963=100. Consumer price indices were taken from *Year book of labour statistics* (Geneva, ILO).

Column (1): ratio calculated by excluding family labour from the self-employed.

Column (2): ratio calculated by including family labour among the self-employed.

[1] In the less developed countries where there is no unemployment insurance the extended family system plays an economic role by subsidising the unemployed and the underemployed. The gains from the decline of this system may not necessarily offset the social costs involved.

earnings in service employment in relation to those in industry and commerce as a whole. In 1961 the average earnings from self-employment (excluding family labour) were higher than those from wage employment with the exception only of commerce, wholesale trade, commodity brokerage and manufacturing. In 1966, however, even in commerce as a whole, in wholesale as well as in retail trade, average earnings of self-supporting labour exceeded those of wage labour.[1] When unpaid family labour is included in the self-employed (as it should be since most of it supports family enterprise) the real income per head becomes much lower than the average earnings of the owner-operators. And in the case of retail trade and recreation services real income per head also turns out to be lower than the average real earnings of wage labour. This differential in favour of the latter may be somewhat exaggerated since under conditions of income-sharing the wage earners' real income per head is also lower than the wage rate. The real earnings gap may be attributed to differences in earner-dependants ratios.[2] In the case of family enterprises, both income-sharing and work-sharing take place in order to maintain the excess labour force, whose size roughly corresponds to that of the unpaid family labour force. In the case of wage earners, on the other hand, income is more likely to be shared without any corresponding job-sharing.

In commerce, retail trade and recreation and personal services, the average total earnings in 1966 were lower than the average for industry and commerce as a whole, whereas for wholesale trade they were higher. In terms of rates of change, only earnings in manufacturing and in commodity brokerage rose faster than the over-all average. The average earnings in commerce and personal services increased relatively more slowly than those in other services and in industry and commerce.

The earnings data on Taiwan seem to bear out only partially J. S. Mill's proposition that competition in professional services and distribution " often, instead of lowering prices, merely divides the gains of the high price among a greater number of dealers." [3] Mill argued that competition in retail trade is so imperfect that in every trade there are " cheap shops and dear shops ", often selling the same articles at different prices to different customers. Similarly, the fees of physicians, surgeons and barristers are fixed more by " custom " than by competition, which only operates by " diminishing each competitor's chance of fees, not by lowering the fees themselves." [3]

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[1] A study of migrants from rural areas in Taiwan to an urban centre shows that the largest increase in income took place among those who changed their status from " employees " to " self-employed " (Speare, op. cit.).

[2] If W is the wage per wage earner, N is the number employed at that wage level and α is the number of dependants per wage earner, then $W > WN/N(1+\alpha)$ or $W(1/1+\alpha)$.

If, under conditions of equilibrium, $W = w$, where w is the average earnings per self-employed owner-operator, and α' the number of dependants per owner-operator, then $W(1/1+\alpha) > w(1/1+\alpha')$ if $\alpha < \alpha'$.

[3] John Stuart Mill: *Principles of political economy*, Book II, Chapter IV, §3.

High price of distribution and of professional services may be only a short-run phenomenon occurring more readily in the " modern "-type professional services than in the traditional ones such as petty retailing. Mill does not, however, make any such distinction.[1] With the influx of new competitors, particularly in retail trade, the market share of each is likely to fall. In an effort to survive, the retail shopkeepers may raise their mark-up in order to check the reduction in their gross margins. However, continued shifts upwards in the labour supply function (as seem to have occurred in the Philippines, where the labour force displaced from the traditional handicrafts and cottage industries has apparently spilled over into retail trades and petty services) are more likely to result in the emergence of excess capacity, decline in price and closure of inefficient businesses due to high costs of distribution.

The low average earnings in retail trade and personal services in Taiwan relative to the industrial average and to the earnings in other service industries seem to point towards a certain degree of underemployment and hence greater labour absorption made possible through sharing of work and incomes. However, the measurement of underemployment is complicated by the existence of self-employment and domestic modes of production under which it is extremely difficult to distinguish between work and leisure and to determine the rate of transformation between them. There may be no underutilisation of labour-time in petty trades and services, since persons engaged in them often work long hours, either in the same activity or in different casual activities, for very low earnings. In such cases it is better to consider underemployment as consisting of two dimensions which are related but distinct, namely:

(a) degree of labour-time (under)utilisation $= (h-\bar{h}) = H$, i.e. the difference between actual and average man-hours;

(b) degree of labour (mis)allocation $= (e-\bar{e}) = E$, i.e. the difference between actual and average earnings.

At any given point of time, a composite index of the degree of labour utilisation (U_L) will be given by the product of *(a)* and *(b)*, so that

$$U_L = (h-\bar{h})\,(e-\bar{e}) = H \cdot E.$$

The increase in the degree of labour market imperfections reflected in an increase in underemployment will then be measured by—

[1] As Kuznets has pointed out, high price of professional services may be more a reflection of monopolistic competition than of custom. " In the early stages of development, when education was scarce and the professionally trained members of the services sector were almost in the position of monopolists, the low per capita income itself might have meant professional incomes that were large multiples of the country-wide average—much higher than in the later phases when education was more widespread and per capita income higher " (Simon Kuznets: *Modern economic growth—rate, structure and spread*, Studies in Comparative Economics, 7 (New Haven and London, Yale University Press, 1966), pp. 152-153). Under conditions of excess labour supply, competition in professional services such as law may also result in considerable idle capacity and lower prices.

$$U_L' = HdE + EdH.$$

If earnings are a function of man-hours, i.e. $E = f(H)$, then

$$U_L' = E + H\frac{dE}{dH}.$$

The fact that the ratio of the quantity of self-employed workers to wage labour (L_s/L_w) declined in Taiwan when their price ratio (p_s/p_w) increased (see tables IA and II) seems to suggest that the market mechanism has been at work in the allocation of labour. When the quantity of wage labour increased between 1961 and 1966, the real wage seems to have declined relative to earnings in self-employment. The increase in the amount of wage labour lowered the share of self-supporting labour relative to wage labour. As this happened, the price of self-supporting labour seems to have risen relative to that of wage labour. The decline of labour income from self-employment as a proportion of total earnings in the period 1961-66 (see table IIA) also seems to support this supposition.

TABLE IIA. TAIWAN: SHARE OF LABOUR INCOME FROM SELF-EMPLOYMENT IN TOTAL EARNINGS, 1961-66

Sector	Self-employment income as a percentage of total earnings		Percentage change, 1961-66
	1961	1966	
Commerce	59.0	54.6	−4.4
Wholesale trade . . .	16.8	12.5	−4.3
Retail trade	77.9	70.7	−7.2
Commodity brokerage .	13.5	1.8	−11.7
Recreation services . . .	25.7	15.5	−10.2
Personal services	56.3	54.0	−2.3
Manufacturing	4.5	4.7	+0.2

Source: Second and Third Industrial and Commercial Censuses of Taiwan, 1961 and 1966.

Note: Total earnings include allowances and benefits.

Part-time versus full-time employment

Sectoral allocation of labour also tends to be affected by differences in opportunities for part-time employment. Relatively greater labour absorption in services may partly be explained by this factor. Females and older workers who are normally not available for regular and full-time work (institutionally determined as a 40-hour week) tend to go into such

occupations as commerce and personal services which offer part-time work not requiring much physical strength. These two categories of labour are also unable to compete on equal terms with younger and more skilled workers in industry.[1]

TABLE III. PHILIPPINES: PERCENTAGE OF EMPLOYED WORKERS BY WEEKLY HOURS WORKED, 1958-64

Sector and sex	Full-time employment (40 hours and over)		Part-time employment			
			May 1958		May 1964	
	May 1958	May 1964	0-29 hours	30-39 hours	0-29 hours	30-39 hours
Both sexes:						
Agriculture	59.5	60.9	20.8	19.3	21.2	17.9
Manufacturing	61.4	61.1	23.9	14.3	24.3	14.6
Commerce	63.1	64.3	25.5	11.4	22.7	13.0
Government, community, business and recreation	83.0	89.7	11.8	4.8	6.4	3.7
Domestic services	89.3	89.6	5.3	4.5	4.0	6.2
Personal services other than domestic	57.1	56.4	18.7	14.8	29.8	13.4
Males:						
Agriculture	67.4	69.8	14.7	17.4	14.2	15.9
Manufacturing	80.6	85.1	10.4	8.7	8.3	6.5
Commerce	78.0	76.1	10.4	9.5	12.6	11.3
Government, community, business and recreation	82.9	92.4	11.9	4.9	5.1	2.3
Domestic services	85.6	86.4	7.6	5.6	4.8	8.8
Personal services other than domestic	63.1	67.8	22.3	14.1	24.5	7.6
Females:						
Agriculture	33.6	31.2	40.5	25.6	44.4	24.4
Manufacturing	50.4	44.4	31.8	17.6	35.3	20.3
Commerce	53.8	56.5	33.6	12.5	29.3	14.0
Government, community, business and recreation	83.4	81.7	11.5	4.4	10.3	8.1
Domestic services	90.2	90.2	4.7	4.3	3.8	5.7
Personal services other than domestic	52.9	48.2	31.5	15.2	33.6	17.6

Source: *Philippine Statistical Survey of Households Bulletin*, op. cit.

Note: In some cases percentages for full-time and part-time employment do not add up to 100.0 owing to non-reporting.

[1] Fuchs found that in the United States proportionately more older workers were absorbed in services " despite the fact that this is the more rapidly growing sector and would therefore tend to have a disproportionately large number of young workers ", op. cit., pp. 185-186.

The Philippine data on employed persons by economic activity and hours worked (see table III) indicate an increase in the incidence of part-time employment (both voluntary and involuntary) in personal services other than domestic, and in manufacturing. It is interesting to note that these industry groups also absorbed the bulk of unpaid family workers, a large proportion of whom work on a part-time basis. However, agriculture and commerce, the two groups with a preponderance of family labour, showed a slight decline. This average for the total number of persons engaged conceals differences in the incidence of part-time employment among different classes of workers. Table IIIA demonstrates that, in both agriculture and commerce, part-time employment among family workers in the Philippines increased whereas the proportion of the self-employed part-timers declined. In the case of commerce, part-time work among wage employees increased considerably. Between sexes, as might be expected, manufacturing and personal services other than domestic showed a decline in part-time male employment, whereas commerce showed an increase. For females, part-time employment increased in agriculture, manufacturing and personal services other than domestic but, interestingly enough, declined in commerce. The decline of part-time work

TABLE IIIA. PHILIPPINES: WORKERS WORKING FEWER THAN 40 HOURS A WEEK, 1958-64

Category and sector	Percentage of total in each category and sector					
	1958			1964		
	Total	Male	Female	Total	Male	Female
Wage and salary workers . .	**22.2**	**21.7**	**23.4**	**21.1**	**16.9**	**30.3**
Agriculture, forestry, fishing .	37.3	34.5	48.2	36.0	28.7	59.3
Manufacturing	22.8	16.0	34.3	22.5	9.4	42.1
Commerce	16.0	14.3	19.4	25.6	20.8	31.9
Other industries [1]	16.3	18.0	12.8	11.7	11.8	11.8
Self-employed workers [2] . . .	**33.2**	**26.1**	**54.5**	**28.8**	**20.5**	**53.1**
Agriculture, forestry, fishing .	28.4	26.1	60.6	22.5	20.2	58.1
Manufacturing	50.1	28.0	55.9	53.0	22.8	61.5
Commerce	41.5	21.8	51.1	35.7	18.6	44.3
Other industries [1]	37.9	30.8	49.1	37.6	26.5	54.9
Unpaid family labour	**52.2**	**41.7**	**64.1**	**57.5**	**47.9**	**68.7**
Agriculture, forestry, fishing .	53.3	42.1	68.9	58.0	47.8	71.5
Manufacturing	45.5	18.7	50.3	62.8	52.0	65.7
Commerce	47.1	56.1	44.8	49.9	47.2	51.2
Other industries [1]	30.9	23.7	46.2	46.3	44.2	47.7

Source: *Philippine Statistical Survey of Households Bulletin*, op. cit.

[1] Includes all other industries, viz. construction, domestic services, personal services other than domestic, government, business and recreation. [2] Includes 85,000 employers in May 1958 and 130,000 in May 1964.

in commerce appears to be due mainly to a reduction in part-time work among the self-employed. In the case of both female wage and salary workers and female unpaid family labour, the incidence of part-time work actually increased.

Distinguishing between " full-time " and " part-time " work on the basis of a rigid definition of working hours has its limitations, however. In the predominantly agrarian economies the assumption of a fixed length of working day is invalid in respect not only of peasant agriculture but of petty trades and services as well. The self-employed themselves determine the length of their working day. Thus the above distinction becomes arbitrary, more so in the case of self-employed and family labour than in the case of wage and salary workers. It may therefore be legitimate to argue that self-supporting labour which possesses its own limited means of production " must always enjoy full employment since each individual is free to work as long as he considers the real reward he obtains a sufficient inducement for his efforts ".[1]

Real output and productivity: some indications

Throughout a considerable part of the services sector, e.g. public administration, education, health, financial institutions and real estate, the concept of productivity is not very meaningful. The familiar assumption of traditional economic theory that the labour input can be considered only in terms of quantity, assuming its quality fixed, is hardly applicable to services where it is the quality rather than the acts (indicative of quantity) of service that determine the real productivity. Moreover, the real output in services cannot be measured independently of input in most cases. The traditional national accounting practice in evaluating real output of the government sector is a case in point. Since no market valuation is set on the output of this sector, the value of wages and salaries paid by the government is considered equal to output. In other words, the real product is assumed to change in proportion to employment, with labour productivity unchanged. Thus if the price is assumed to rise as rapidly as wages (as in the case of government services), the real output of service industries measured in terms of gross product at constant prices would tend to be underestimated. However, the implicit price deflators used in the Philippines in estimating the net real product indicate a relatively greater increase in the price of goods than in that of services as a whole.[2] In any event, the value of real output measured by salaries which

[1] Joan Robinson: " Disguised unemployment ", in *Economic Journal* (London), June 1936.

[2] The implicit price deflator for manufacturing rose by 27.7 per cent and those for commerce and services by 22.7 and 16.0 per cent respectively between 1958/59 and 1963/64 (*Statistical Reporter* (Manila, National Economic Council), Vol. XIII, No. 2, Apr.-June 1969).

are institutionally determined and are thus independent of the market forces is likely to be biased. Great caution is therefore needed in making any definite interpretations of the data on service output and productivity.[1]

In spite of the present unsatisfactory state of concepts and methodology, some tentative observations can be made about the growth of output, employment, and implicit productivity in different economic sectors of Taiwan and the Philippines. Table IV presents rates of increase of output, employment and productivity. The growth of productivity is simply assumed to be residual, that is, it represents the difference between the rate of change in output and the rate of change in employment. There are limitations in making comparisons between the two countries since neither the economic sectors nor the time-periods coincide.

The average rate of increase in productivity is quite low in the Philippines compared to that in Taiwan, where productivity increased quite rapidly in all sectors except public administration. The government sector for the Philippines, on the other hand, where it includes professional, business and recreation services, had the most rapid growth of real output and productivity. If the current output is deflated by the wholesale price index, which is consistently higher than the implicit deflator, the real output still grows at about 7 per cent per annum, thus implying a productivity increase of about 2 per cent per annum. Although the growth rate of productivity is reduced to about one-half, it ranks higher than the average productivity increase for the goods sectors or for the economy as a whole. Unfortunately, it is impossible to separate employment growth in individual industries in this heterogeneous group of services. There is only a rough indication that employment expanded more rapidly in government than in recreation services.[2] So did real output as is shown by the following disaggregated growth rates of output [3]:

Government services	7.9	per cent	per	annum
Educational services	2.5	„	„	„
Recreational services	2.0	„	„	„
Professional services	6.9	„	„	„

[1] To quote Kuznets again: " They have one basic feature in common: none of the activities represents in any significant way the production of commodities; each renders a product that is intangible and not easily embodied in a lasting and measurable form. For this reason, and despite the magnitudes of the services sector, the measurement of its output is most subject to error, and data and knowledge are far too scanty to permit adequate analysis." (*Modern economic growth . . .*, op. cit., pp. 143-144.)

[2] The employment indices covering reports from a limited number of bureaux and offices indicate that employment in government services expanded by nearly 32 per cent, whereas it declined by about 4 per cent in recreation services over the 1958-64 period (Central Bank of the Philippines: *Statistical Bulletin*, Dec. 1968).

[3] The estimates of current output are deflated by the general wholesale price index for Manila. The price index is taken from the *Statistical Bulletin* of the Central Bank of the Philippines.

TABLE IV. TAIWAN AND PHILIPPINES: SECTORAL RATES OF CHANGE OF OUTPUT, EMPLOYMENT AND PRODUCTIVITY

(Per cent per annum)

Sector	Philippines 1958/59-1963/64			Taiwan					
				1960-65			1955-65		
	Output	Employment	Productivity	Output	Employment	Productivity	Output	Employment	Productivity
Goods sectors :									
Agriculture . . .	3.4	2.7	0.7	6.0	1.3	4.7	6.4	1.0	5.4
Manufacturing . .	4.9	3.6	1.3	12.5	3.5	9.0	11.9	4.2	7.7
Construction . . .	3.3	8.3	−4.9	—	—	—	—	—	—
Transport and communication . .	4.9	5.8	−0.8	11.9	4.0	7.9	12.3	4.2	8.1
Total . . .	3.9	3.2	0.7	—	—	—	—	—	—
Services sectors :									
Commerce	4.9	5.5	−0.6	12.8	2.3	10.5	7.9	2.8	5.1
Government . . .	9.4	4.9	4.5	9.3	5.8	3.5	7.2	5.2	2.0
Domestic services .	—	2.4	—	—	1.8	—	—	2.3	—
Personal services other than domestic	4.5	2.4	2.1	—	—	—	—	—	—
Total . . .	6.5	4.6	1.9	—	—	—	—	—	—
Over-all total . . .	4.8	3.4	1.4	10.0	2.3	7.7	8.4	2.1	6.3

Sources: *Philippines*—Employment: *Philippine Statistical Survey of Households Bulletin*, op. cit. Output: " The national income of the Philippines for CY 1946 to 1968 ", in *Statistical Reporter* (Manila, National Economic Council), Vol. XIII, No. 2, Apr.-June 1969. The data are for net domestic product at factor cost at 1955 prices. *China (Taiwan)*—Employment: " Household registration " of the Provincial Department of Civil Affairs, Republic of China. Output: GDP figures at 1964 prices are taken from Mo-huan Hsing: *Capital accumulation in Taiwan during 1951-1965*, a paper presented to the Conference on Economic Development of Taiwan, Republic of China, June 1967.

Notes: *Philippines*—(1) Since the employment figures refer only to the survey week of the May Survey Series, and not to the whole year, the two-year averages were used for both employment and output. (2) The figure for the output of public utilities has been estimated separately from the output at current prices by applying price deflators for " transportation, communication and public utilities ". (3) For lack of any separate price deflators, the implicit price deflator for " services " as a whole was used to obtain net domestic product at constant prices from the current output data for the categories " personal services " and " government, community, business, recreation ".

— denotes that data are not available.

Table IVA, showing sector differentials in labour productivity growth, reveals an interesting contrast between Taiwan and the Philippines. In Taiwan the goods sectors, e.g. manufacturing and transport and communication, indicate gains whereas the services sectors such as government and commerce (for 1955-65) show losses in relative productivity. In the Philippines, on the other hand, all services sectors with the exception of commerce experienced above-average rates of increase in productivity. The rates for all goods sectors were much below average.

TABLE IVA. TAIWAN AND PHILIPPINES: RATES OF CHANGE OF PRODUCTIVITY RELATIVE TO TOTAL ECONOMY

Sector	Philippines 1958/59 to 1963/64	Taiwan	
		1960-65	1955-65
Agriculture	−0.7	−3.0	−0.9
Manufacturing	−0.1	+1.3	+1.4
Construction	−6.3	—	—
Transport and communication	−2.2	+0.2	+1.8
Commerce	−2.0	+2.8	−1.2
Government	+3.1 (+0.7 [1])	−4.2	−4.3
Personal services	+0.7	—	—
Goods total	−0.7	—	—
Services total	+0.5	—	—

Source: Derived from table IV.

[1] The gain that occurs if output is deflated by the wholesale price index.

— denotes that data are not available.

Does this experience of the Philippines suggest that there was a major transfer of "disguised unemployment" and underemployment from agriculture to services, particularly commerce? This is an open question that merits further investigation. However, it would appear that the existence of productivity differentials can at best be only a poor indicator of underemployment and misallocation of resources. It may do no more than demonstrate that underemployment is a universal phenomenon to be found in developed economies with marked productivity differentials as well as in less developed ones. Only a real productivity differential, given the mobility of factors and equality of the shares of co-operant factor inputs in different sectors, may signal a misallocation of labour between sectors.

It is also noteworthy that productivity of personal services in the Philippines grew more rapidly than that of manufacturing and of most other sectors. This may sound inconsistent with economic logic since the economies of scale which explain a positive relationship between the growth of output and of productivity play a relatively insignificant role in such personal services as laundering, catering and hairdressing. It is conceivable, however, that very rapid technological advances and increasing capital investments may more than offset the adverse effect of the absence of increasing returns. The relatively higher growth of productivity in personal services also suggests that the shifts from wage employment to self-employment observed in this sector (cf. the section on self-

employment versus wage employment) may have resulted in an increase in average real earnings.

Sector averages have their limitations, however. They may conceal intra-sectoral productivity differentials which account for a part of the differentials across broad sectors. Unless it is assumed that the level of productivity is the same in all industries constituting a sector, it is possible for sector productivity to grow rapidly if only a few industries with relatively high levels of productivity are significant enough quantitatively to outweigh the slow increase of productivity in most of the other individual components.[1]

Conclusions

No conclusive generalisations are possible on the basis of the scattered and meagre data available. There are at present significant gaps in the statistical information on real output, employment, earnings and productivity in the services sector. Besides empirical difficulties, there are also basic conceptual limitations in measuring the labour force of the less developed countries. The market mechanism does not play a significant role in allocating resources between industries and occupations. Absence of industrial and occupational specialisation blurs the distinction between economically active and inactive population. The same people often devote part of their time to farming, trading, money-lending, and still other occupations. Those who are working for themselves also take on paid employment as wage labourers. Statistics fail to reflect the incidence of multiple job-holding since each member of the labour force is assigned to a specific economic activity on the basis of his principal occupation.

In spite of these limitations, however, one can say that there is a discernible tendency, in both Taiwan and the Philippines, for the services sector to absorb a large bulk of the additional labour force. Where the two economies seem to differ is in the composition and characteristics of the labour force absorbed in services. The differential industrial and economic growth affects the distribution of labour within the services sector. It appears that there was a decline of the unorganised traditional service activities in Taiwan in the wake of rapid economic growth. In the Philippines, on the other hand, there was a shift of traditional activities from manufacturing to such services as commerce. These two different phenomena suggest *(a)* that the inter-sectoral flows of labour in the less developed countries need not always imply labour transfers from agriculture to industry or to services by-passing industry, and *(b)* that in fact

[1]It may be of interest to note that, contrary to the usual expectations of relatively lower productivity growth in the service industries of the developed economies, a survey of some twenty service industries in France indicated fairly high rates of increase in labour productivity (Maurice Lengellé: *The growing importance of the service sector in member countries* (Paris, OECD, 1966), p. 19).

labour transfers occur in two stages. In an economy such as the Philippines where the rate of growth of industrial output is relatively slow, the surplus agricultural labour shifts to traditional manufacturing and from there to traditional services when manufacturing expands under conditions of modern technology. At higher rates of growth, however, as in the case of Taiwan, the potential surplus labour in traditional services is absorbed in industry at the same time as the growth of industry generates " modern " employment in complementary services. The net effect of these movements in opposite directions would be to raise the relative share of modern employment without necessarily raising the amount of total labour absorption in services. The rate of transformation of traditional into modern types of labour will depend on the rate at which the two contrary processes take place as a result of industrial growth.

There is also some indication that the changing proportions of the self-employed and of unpaid family labour can give a rough idea of the declining or growing importance of the " traditional " unorganised segments in the various branches of economic activity. Nevertheless, the criterion of " status of employment " is quite inappropriate for distinguishing between traditional and modern activities in such sectors as government services. In the less developed countries there is a developmental sector of the government in the shape of the " public sector " services such as health, education, industry, transport and communications. There is also a traditional sector that is characterised by the unnecessary growth in the employment of clerks, messengers and watchmen who perform no well-defined economic role. Much research is required to develop suitable and systematic criteria for identifying the traditional and modern activities and for regrouping the statistical data on output and employment.

Closely related to the above question is the problem of measurement of underemployment in services. Does the expansion of employment in services, particularly in commerce, reflect conditions of underemployment? Are comparative earnings and productivity good measures of the degree of labour utilisation, especially in sectors where self-employment and domestic modes of production are predominant? Does a movement from traditional self-employment to wage employment reduce " disguised unemployment "? All these questions merit detailed investigation. The few observations made in this paper cannot provide satisfactory answers to the problem: what they do seem to suggest, however, is that at least a part of the additional employment in commerce and other services occurs through work-spreading and income-sharing.
