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Postwar Growth of the Service Sector in Asian Countries

by

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The paper attempts to draw with a broad brush quantitative description of the changes in employment and income of the service sector in Asian countries for which data are available. No attempt is made to analyze in depth the statistical results obtained except to suggest some well-known interpretations most of which are found in Kuznets' writings. The service sector is defined as in his Modern Economic Growth to include commerce, public services, and personal services and to exclude transport and communication which tend to be highly (material) capital-intensive.

We begin with cross-section and overtime comparisons of the employment share of the S sector, and then go on to the cross-section and overtime comparisons of the product share of the S sector, and the productivity of the S sector.

The countries included in the paper are in the monsoon belt of Asia and the characteristic common to tmost countries is the predominance of padi rice growing, a form of agriculture quite distinct from other cereal cultures. Excluded are countries like Afghanistan and Iran

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which belong to the Middle East and Australia, New Zealand and New Guinea which are in the Pacific regions. Data for monsoon countries such as Bangladesh, China, Vietnam, Cambodia and Laos are not available. Nevertheless, the countries covered are diverse, from tiny Singapore to vast India, from modernized, industrialized economies like Japan to traditional, agricultural countries like Nepal. It is hoped that some of the conjectures may prove to be useful for others wishing to formulate them more precisely and testing them more rigorously with detailed data.

The Employment Share of the S sector (SN)

In Table 1 and Chart 1 are presented data from the ILO Yearbook of Labour Statistics 1975 and from IBRD World Tables 1976. Time did not permit checking the data against the original sources (census and survey data) of each country and attempting adjustments. The major problem in the employment data is the large proportion of females in monsoon agriculture which depresses the S share, especially in countries where the bulk of the labor force is found in agriculture. The labor intensity of monsoon padi agriculture requires the participation of housewives (and older persons, and children) during the busy seasons of rice growing (during planting and harvesting) when labor tends to be in short supply. But their participation is minimal during other months of the year, and housewives probably spend more time on house work, leisure,

and nonagricultural activities. This raises the second major problem with employment data in monsoon Asia --- the extreme seasonality (roughly half year of rainy and half year of dry weather) of the monsoon rains contributes to the large amounts of underemployment (including very low-income, marginal employment) during substantial parts of the year. Both of these problems could have been solved by working out annual, full-time equivalent employment units but time and data availability did not make this possible. A third problem is the frequent shifting of jobs during the year, not only from occupation to occupation, but from industry to industry. In developing countries, especially in monsoon Asia, most workers are hired by the day, week or month, depending on the season so that employment tends to be irregular, unstable and intermittent. Producing units are very small and operate as and when orders are received from buyers. 1/

What these deficiencies imply for the data on employment share in the S sector may be stated as follows. Underemployment is minimal in Japan, Korea, Taiwan, HongKong, and Singapore so that on this score

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1/ See for more detailed discussions of these problems, Philippine Economic Journal (Special issues) Vol. XV, Nos. 1 & 2, 1976. Labor intensity of monsoon rice production is due to the need for transplantation, and harvesting with small knives and sickles. See my "Seasonality and Underemployment in Monsoon Asia", Philippine Economic Journal, First Semester, 1971.

the employment share estimate for the S sector may be understated for Southeast and South Asian countries with surplus labor. That is to say, if the employment figures for agriculture were put on an annual full-time basis by adjusting for part-time work of males and females the share of agriculture will be much less and the share of services will be larger since total full-time equivalent employment will be reduced much more in South and Southeast Asia than East Asia; in part also because of the predominance of agriculture where the underemployed housewives and males are found (and low productivity jobs).[1/]

As to multi-industrial attachments, job-shifting is more frequent in the rural areas so that probably workers reported to be working in agriculture may be doing some amount of service work --- in store-keeping, in trade, and personal services. This may be offset by the fact that those reported to be active in industrial and service establishments in the rural areas may be helping with agricultural work during the peak seasons of agriculture when labor may be in short supply. But this is mostly conjecture as we do not have nation-wide data on multi-occupations and this phenomenon varies with the type of agriculture,

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1/ In very densely settled parts of Asia, e.g. Java, the income earned from the tiny farms is too small for subsistence and the workers must seek marginal work which pays very little, partly because the work intensity per hour of the employment is low (via work sharing) and because of the pressure of labor surplus on available work. We include this type of work as part of underemployment since the person is not fully and intensively occupied each hour of work.

tenure, location, and so on. Nevertheless, the discussion indicates that labor force and employment statistics are extremely blunt tools and care must be taken not to attribute much significance to small differences in cross-country comparisons, particularly because we do not know how many countries in the region defined females to be in the labor force or out of it. The high female participation rates of East Asia compared to the low rates for South Asia may be due to the religious bias of Moslem and Hindu faiths which do not look upon female employment as favorably as in Confucian and Buddhist countries. (Compare Japanese rates of 51% to that of India with 19% and Pakistan with 15%.) Yet, (one-half) Moslem Malaysia and Nepal have rates as high as 43% and 59%. And what can one make out of Thailand's 73%, one of the highest rates to be found in the world, as high as in parts of Africa where tribalism and matriarchy prevail? 1/ Thus, the share of employment in the S sector is partly the result of attitudes toward female participation in economic activities, especially in agriculture which predominates in LDC's.

1/ The variation in work participation rates among nations in Asia may be the results of interactions between religious beliefs, social customs, labor intensity of agriculture, degree of urbanization, levels and growth of per capita income, besides demographic characteristics and deficient statistical concepts. See Suvannee Chitranukroh, The Female Labor Force Participation in Thailand, M.A. Thesis, School of Economics, September 1975. She finds that the traditional custom of passing on land to the younger daughters make for matrilocal marriages, in which the females own the farms of the family and have the incentive to do more farm work than in other countries of Asia.

TABLE 1 THE SHARE OF EMPLOYMENT, PRODUCT, AND PRODUCTIVITY IN THE SERVICE SECTO

ASIAN COUNTRIES, CROSS SECTION, CIRCA 1970

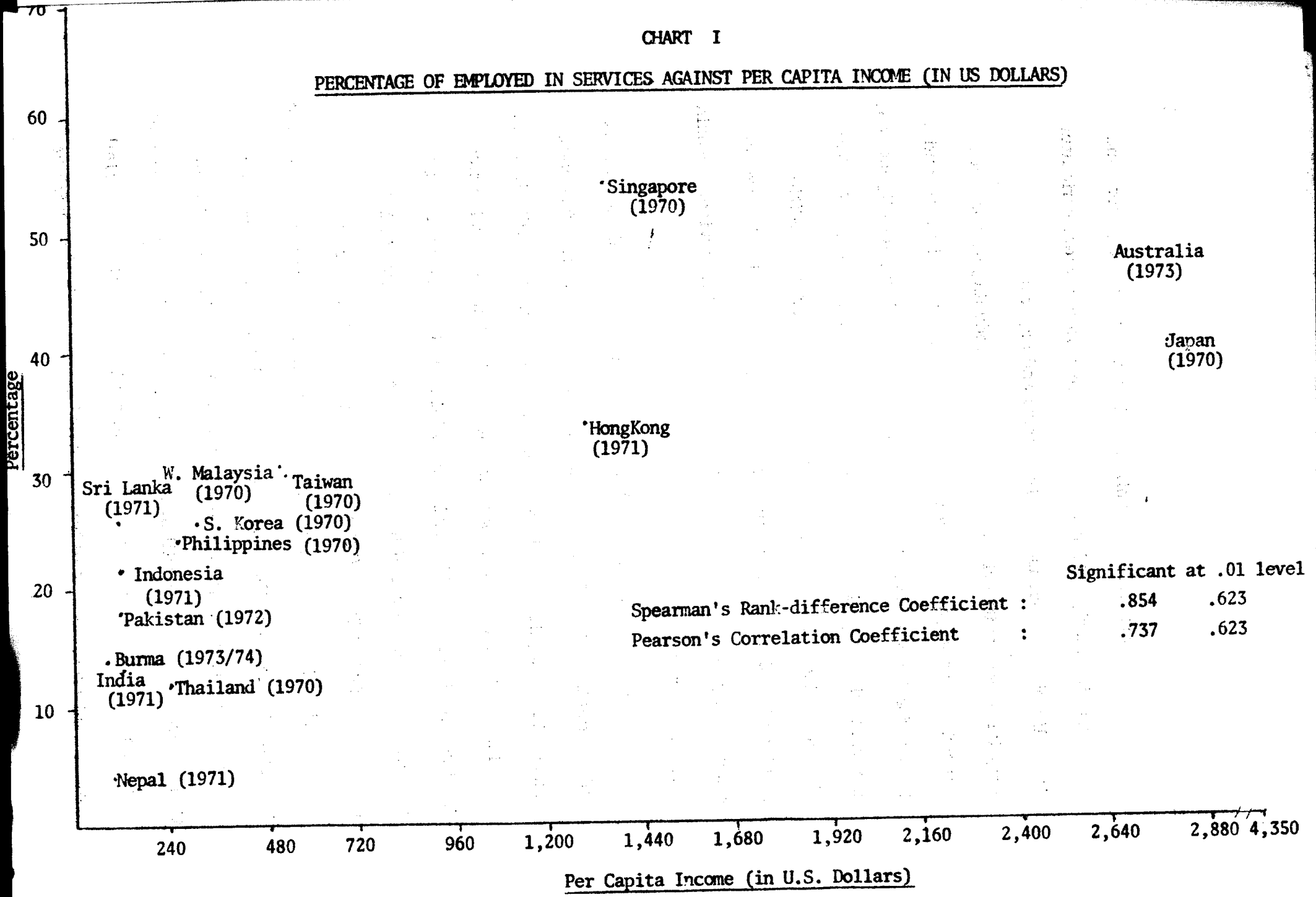
Countries	(Year)	Per Capita Income (In U S Dollars)	(SN) % of Total Employed in Services	(SY) % of GDP Originating in Services (At Current Prices)	SY / SN
Japan	(1970)	2,765	40.0	*43.5+	1.15
S. Korea	(1970)	310	25.7	**33.2	1.29
Taiwan	(1970)	534	29.6	*42.8	1.45
HongKong	(1971)	1,287	33.9	53.8	1.59
Singapore	(1970)	1,345	54.3	**67.8	1.25
Philippines	(1970)	258	24.1	*36.1	1.50
Thailand	(1970)	239	12.5	**35.7	2.86
W. Malaysia	(1970)	522	30.4	**38.3	1.26
Indonesia	(1971)	119	21.7	**32.1	1.48
Burma	(1973/74)	80	14.0	44.5	3.18
Sri Lanka	(1971)	115	25.9	**34.6	1.34
India	(1971)	117	13.4	*24.9	1.86
Pakistan	(1972)	118	18.1	**32.3	1.78
Nepal	(1971)	90	4.2	**11.9	2.83
Australia	(1973)	4,350	47.9	**37.8	0.79

Sources:
1. SN from ILO Yearbook of Labour Statistics 1975
2. SY basically from World Tables 1976. SY of West Malaysia from National Accounts of Peninsular Malaysia 1975
3. Per Capita Income adjusted from World Tables, IBRD, 1976

Notes:
* As % of NDP
** Adjusted SY by deducting from it ownership of dwellings. Figures on ownership of dwelling were taken from UN Yearbook of National Accounts Statistics 1975
\+ Adjusted SY deducting from it services of dwellings which consists of property income (monetary and imputed) derived from dwellings. Data on Services of dwellings were taken from: E.F. Denison and W.K. Chung, How Japan's Economy Grew So Fast 1976, p. 18.

CHART I

PERCENTAGE OF EMPLOYED IN SERVICES AGAINST PER CAPITA INCOME (IN US DOLLARS)



	Significant at .01 level	
Spearman's Rank-difference Coefficient :	.854	.623
Pearson's Correlation Coefficient :	.737	.623

The importance of urbanization in the data for Singapore and HongKong is clearly evident. These are city-states where agriculture is negligible and because of this imports and exports very large per capita-wise. Without a food-producing sector, these countries must export commodities and services (in the form of tourism) to earn foreign exchange in order to import food. Thus, for city-states, the small size of agriculture (less than 2%) raises the share of S (and also of the industrial sector), and the need to export commodities and services in order to import, pushes up foreign trade which in turn generates employment in the S sector (in the form of tourist services, banking, insurance, trading, and so on).

Chart 1 brings out the relation between per capita dollar income and the relative size of S sector measured in employment. With some outstanding exceptions the latter seems roughly correlated with income. As pointed out above, the importance of urbanization and foreign trade in Singapore is responsible for its surprisingly high S sector. But it is also due to the low level of female participation rate (25% in 1970) compared to that of Japan (51%) and of HongKong (43%), producing a much smaller size of the I sector. Less important, the role of government is greater in Singapore than in HongKong with large military and social welfare expenditures. It may also be that in 1970, Singapore's traditional entrepot trade was still substantially intact while that of HongKong was almost completely replaced by manufacturing industries, especially textiles. Another major deviation is that of Thailand with the share of

S much lower than the per capita income level. The major factor is noted above, namely, the extraordinarily large female participation rate especially in agriculture. This means that the agricultural sector is larger than the per capita income levels imply.

The size of Burma's S sector share is three times larger than that of Nepal though their per capita dollar incomes are similar. It may be that Burma's income level is understated and that the socialistic character of its government sector, plus large military expenditures may account for a large public sector. Sri Lanka's higher share of S than in Pakistan and India may also be attributable to the vast welfare and social activities of the Government. Sri Lanka's share of government revenue as % of GNP in 1971 is 21%, one of the highest in Asia, with India 16%, Pakistan 14%, Burma 17% and Nepal 5% (see Appendix Table 1).

Thus the variables associated with the size of the S share in total employment are many: female labor force participation, the relative size of the A and I sectors, foreign trade, social welfare, government policies, and defence expenditures. But clearly per capita income levels (measured in US dollar units) are the predominant influence in the level of the S share of employment. The reason for this may be that income is a large conglomerate variable including and overlapping with variables not yet considered. These are commercialization, industrialization, (that is, the use of small machines in place of hand tools), urbanization, and income dis-

parities, all of which comprise structural changes closely interrelated in varying degrees with one another, and associated with rising per capita incomes as Kuznets has shown. This is particularly so in the earlier stages of modern economic growth, where starting with the commercialization of agriculture and the rural sector, trading and exchanging grow, requiring the specialized services of merchants and moneylenders; then with the mechanization of handicrafts, construction, transportation, and utilities, and the consequent enlargement of their enterprises, division of labor takes place, so that specialization and exchange are extended to the towns and cities. Both processes are in turn associated with growth of cities where merchants and industrial workers become concentrated. The large concentration of population in turn calls for public services required for health and sanitation, policing and regulation, training and education, social welfare, and so on. Finally, since in the earlier stages of growth, the commercialization and industrialization will affect at the outset a small but widening segment of the population, incomes of families tend to become differentiated and disparities increase, with only the upper income brackets getting the benefits of growth.[1/] Those with higher incomes

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1/ See Harry T. Oshima and Bruno Barros, "Trends in Growth and Distribution of Income in Selected Asian Countries", Philippine Economic Journal, Vol. XV, No. 3, 1976.

TABLE 2 GROWTH OF THE EMPLOYMENT SHARE OF THE SECTOR AND SUBSECTORS AS % OF TOTAL EMPLOYMENT IN ASIAN COUNTRIES

Country	(Year)	S Total	Wholesale & Retail Trade, Restaurant & Hotels	Financing Ins. Real Estate & Business Services	Community, Social & Personal Services	Growth Rate of Per Capita GDP 1950-60	1960-7
Japan	(1950)	25.0	11.8		13.1	7.3	10.2
	(1960)	32.4	17.5		14.9		
	(1970)	40.0	20.2	4.1	15.6		
Taiwan	(1956)	23.3	7.5		15.8	4.8	6.3
	(1965)	27.9	11.1		14.3		
	(1970)	29.5	14.6		14.6		
S. Korea	(1966)	24.8	10.5		14.3	2.6	6.5
	(1970)	25.6	12.6	1.0	12.0		
	(1974)	26.7	15.2	1.3	10.2		
W. Malaysia	(1947)	18.6	8.5		10.1	0.8*	2.9*
	(1957)	24.4	9.3		15.2		
	(1970)	30.4	11.3		19.2		
Philippines	(1948)	16.8	5.0	2.5+	9.2	3.2	2.4
	(1960)	19.8	9.0		11.0		
	(1970)	24.0	7.4		16.6		
Thailand	(1937)	8.4	5.2		3.1	2.6	4.8
	(1947)	11.0	8.0		3.1		
	(1960)	10.6	5.8		4.8		
	(1970)	12.5	5.3		7.2		
	(1973)	16.2	8.2		8.1		
India	(1951)	16.4	5.8		10.6	2.3	2.0
	(1961)	13.0	4.1		8.9		
	(1971)	13.4	4.9	0.7	7.8		
Sri Lanka	(1953)	26.0	8.8		17.2	1.3	2.5
	(1963)	26.0	9.6		16.4		
	(1971)	25.9	10.4	0.8	14.7		
Pakistan++	(1951)	11.5	5.3		6.1	...	4.0
	(1961)	13.1	5.0		8.2		

Notes:

+/ Liberal Profession

++/ Including Bangladesh

*/ For the whole Malaysia

(CONTINUATION OF TABLE 2)

Country	(Year)	S Total	Wholesale & Retail Trade, Restaurant & Hotels	Financing Ins. Real Estate & Business Services	Community, Social & Personal Services	Growth Rate of Per Capita GDP 1950-60	1960
HongKong	(1961)	33.8		11.2	22.6	3.6	6.
	(1971)	33.9	16.3	2.6	15.0		
Singapore	(1947)	56.5	24.0	3.0+	30.3	...	6.
	(1957)	59.8		25.9	33.9		
	(1970)	54.3	23.5	3.6	27.2		
Indonesia	(1961)	16.5		6.8	9.7	1.6	1
	(1971)	21.7	11.0	0.3	10.5		
Burma	(1973/74)	14.0	9.4	4.6		4.5	0
Nepal	(1971)	4.2	1.3	0.1	2.8	0.9	0
Australia	(1947)	35.6		16.4	19.2	1.5	3
	(1971)	49.1	21.9	7.2	19.9		
New Zealand	(1951)	36.1		16.6	19.6	0.8	2
	(1971)	43.4	18.0	5.9	19.6		

Note: + / Liberal Profession

Sources:

1) Employment data from ILO Yearbook of Labour Statistics.

2) Growth Rates of Per Capita GDP from IBRD World Tables 1976.

TABLE 3 SHARE OF RURAL AND URBAN EMPLOYMENT IN THE S SECTOR AND SUBSECTORS

Country		National	Urban	Rural
Japan	(1970)	39.8	44.9	27.4
Commerce		21.9	25.5	13.0
Service		14.6	15.9	11.5
Public		3.3	3.5	2.9
South Korea	(1966)	24.9	51.9	13.3
Commerce		10.5	22.3	5.5
Service		11.4	24.0	6.0
Public		3.0	5.6	1.8
Taiwan	(1970)1/	35.9	53.7	30.7
Commerce		11.7	19.6	9.4
Service				
Public		24.2	34.1	21.3
Philippines	(1970)	23.8	49.3	11.9
Commerce		7.4	14.5	4.1
Service				
Public		16.4	34.8	7.8
Sri Lanka	(1971)2/	23.7	50.8	16.7
Commerce		10.2	22.6	7.0
Service		9.3	18.8	6.8
Public		4.2	9.4	2.9
W. Malaysia	(1970)3/	26.1	50.2	16.6
Commerce		9.6	18.6	6.0
Service		11.5	22.7	7.1
Public		5.0	8.9	3.5

Notes:

1/ Rural areas = Taiwan area - Keelung City - Taiching City - Tainan City - Kaohsing City - Taipei City

2/ All municipal, urban and town council areas are regarded as falling within the urban sector. All other areas comprise the rural sector.

3/ Urban = a) gazetted areas with population of 75,000 persons or more +
b) gazetted areas with population of 10,000 - 74,999

Rural = a) gazetted areas with population of 1,000 - 9,999
b) gazetted areas with population of 999 and below and all ungazetted areas.

Source: Respective Population Census of each country.

can afford to purchase personal services in increasing amounts --- medical and dental services, recreational, cultural, religious, and educational services, repair services, and various domestic services.

In Table 2 are shown the changes in the share of employment in the S sector and subsectors for the postwar decades. One group of countries show increasing share of S employment, (Japan, Taiwan, S.Korea, W. Malaysia, Philippines, Thailand, Indonesia and Pakistan). These are countries whose growth rates of GNP per capita are very high (5 or 6%) or moderately high (2% to 4%). An interesting exception is the case of the city-states of Singapore and HongKong which have been growing very rapidly in the 1960's but whose S share has not been increasing, (even though the number employed in the S sector has been rising from 297,000 in 1961 to 537,000 in 1971 for HongKong and from 281,000 in 1957 to 353,000 in 1970 for Singapore). This is because of the rapid growth of labor-intensive industrialization and foreign trade, and the slow growth of urbanization which had already reached nearly 90 to 100% in both cases during the late 1960's. (See Appendix Table.) Singapore's sharp decline is also due to the decline of the traditional entrepot trade with Indonesia and Malaysia and perhaps more important the separation of Singapore from Malaysia, and the consequent shift of public services, and commercial and financial services to Kuala Lumpur, Penang, and other Malaysian cities. Singa-

pore in the 1950's was the main city of the Malayan Union and the entrepot for imports and the outlet for exports of West Malaysia. 1/

For India and Sri Lanka, the slow growth of per capita income was accompanied by the slow pace of industrialization and urbanization. The decline in the share of agricultural employment was negligible so that industrialization absorbed most of the decline in the agricultural share.

For the countries with clearly rising growth of SN and GNP per capita, the latter's impact on the former probably varied with differing types of structural changes at various stages of growth. Thailand came into modern economic growth the latest (around the 1950's) and Japan the earliest (around the 1880's and 1890's). We can speculate about the impact of the commercialization of agriculture, the industrialization of the secondary industries, urbanization, and income disparities on the S sector by assuming that in a completely self-sufficient village economy (with each household self-sufficient), the need for the S sector may be very minimal: perhaps a village chief, a medicine man, a priest, a teacher, and others. (Perhaps pre-war Nepal with 95% in the A sector even in 1970 comes closer to this state of affairs than any other country in Table 1.)

1/ As to HongKong, the stable share of employment in the S sector was due to offsetting: to the steep decline of community and personal services, and the rise of commerce and finance.

As agricultural productivity rises, exchange and trading emerge and with this the commercialization of agriculture develops. Thailand's 1937 Census of Population shows that the S sector, considerably larger than the secondary sector, was dominated by wholesale, retail, restaurants, and hotels which employed 75% of the S sector labor force.[1/]

A substantial rise in productivity and per capita income occurs with industrialization, even though it may be predominantly small-scale, labor-intensive industrialization. This generally comes about after the commercialization of agriculture has made some headway. Commercialization and industrialization are accompanied by urbanization, as pointed out above. It is interesting to note that in Thailand after two decades of rapid commercialization, industrialization and urbanization, the number employed in public and personal services in 1970 rose to exceed substantially the number in the commercial services (See Table 2).[2/]

All these structural changes entail rising disparities in the distribution of family incomes in both the urban and rural sectors

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1/ Data from Statistical Yearbook of Thailand, 1944 and 1945, Bangkok. The Philippine Census of 1903 also shows a large number of merchants, about 137,000 which is 4% of the total labor force.

2/ Even as late as the 1947 Census of Population, the commercial employees were still three-fourths of the total S sector as in 1937.

(as noted above) since at the outset only a small group in the higher income brackets will benefit. These families begin to purchase the personal services with high income elasticities --- medical and dental services, recreational, cultural, and educational services, domestic services and so on.

The foregoing changes take place in the earlier stages of growth where the agricultural and rural sectors are fairly large and the absolute number engaged in agriculture may still be rising even though the share may be falling. Hence, they are applicable not only for Thailand but for Indonesia in the 1960's, the Philippines and W. Malaysia. One characteristic is that the commerce and finance subsector tends to grow more slowly than the public and personal subsector (with the exception of Indonesia). It may be that the traditional commerce and finance units are being replaced with modern units while public employment and personal services rise as urbanization speeds up.

But the data for Japan, Taiwan, S.Korea (and Australia and New Zealand) in Table 2 shows that there is a reversal in the relative trends in the shares of the two subsectors, as the economy moves into the middle and later stages of growth. It is the faster growth in the share of the commerce and finance group than the growth in the public and personal group that underlies the growth of the S sector as a whole. The absolute decline of agricultural employment indicates that industrialization has accelerated, bringing with it a

demand for new types of stores and retailers, (gasoline stations, automobile and appliance dealers, department stores and super markets), for new financial institutions (such as savings banks and trusts, personal credit and development institutions, security dealers, foreign exchange banks and brokers, all kinds of insurance firms, real estate companies), for business services (such as accounting and legal services, data processing, engineering, architectural and other types of technical services, advertising, management and consulting, detective and protective services, etc.). The increase in tourism made possible by the revolution in travel promotes the growth in restaurants and hotels which are included in this subsector. Moreover, with income inequalities no longer widening, the middle and lower brackets of families are able to utilize commercial and financial facilities such as banking.

In contrast, there may be slowing down in the growth of public services once provision for the basic community services is made, as shown in Appendix Table 2. Also these are the countries with very high GNP per capita growth rates in the 1960's --- rates which exceeded the growth of the labor force, so that unemployment fell rapidly and full employment attained. In this situation, the wages of unskilled workers in the S sector rose rapidly as the labor market tightened, especially for those in the lowest wage groups such as in domestic services. In Japan, Taiwan and S. Korea,

maids, cooks, gardeners became difficult to hire, leading to a substitution of household appliances (washing machines, refrigerators, cleaners, and so on), while durables such as T.V., radios, stereos, tended to substitute for amusement, recreational and cultural services. The data for New Zealand and Australia indicate the existence of the same trends in countries with higher per capita incomes.

The Product Share and Productivity of the S Sector

The S sector excludes transportation, communication and storage, and includes commerce, public and personal services. For the purpose of this study, which is focused on the relative changes in productivity of the s sector the imputed income of owner-occupied rentals should be excluded since there is no employment counterpart to it, but as Table 1 notes this was not possible for all the countries.

The data are from the World Tables of IBRD, and from official country reports. Current price figures of the service sector product are fairly reliable for the public service since they are taken from government budgets and accounts, with central government product estimates usually better than local government figures. But the figures for commerce and personal services in Asia are amongst the weakest in product originating tables of the national accounts. Since services are not tangible commodities, the difficulties of counting

them are great, besides the problem of extensive qualitative differences. Business and personal services are largely produced in very small units of production in Asia and attempts to collect reliable data from these units are much greater than for the industrial and agricultural sectors. Consequently, few countries in Asia conduct regular, sample surveys on the business and personal service sectors, as they do in the A and I sectors. Thus, the usual method is to depend on labor force surveys and censuses for employment data and multiply by scattered, average wages (obtained through wage and other surveys). The problem here is in the conversion of daily, weekly, or monthly wages into annual wages since the information on the number of hours, days, or months worked during the year is meager. As noted in the previous section, the extent of underemployment and job-switching may be extensive in the small commercial and personal service units in all of the Asian countries with the possible exception of Japan. Finally, income in kind (lodging and meals) may not be insignificant although the basis for estimating them are rarely available.

Just as inadequate are the estimates of profits and proprietor's income in these small units of production. For most of the countries the household and enterprise surveys are the bases of the estimate but the figures from these sources are thought to be greatly underestimated and most countries attempt some arbitrary "blowing up".

Additional problems inhere in the constant-price estimates overtime. Since data do not exist for double-deflation methods, various price indexes are used for each of the sector. Since price indexes for the S sector are difficult to construct, the S sector may be deflated residually, after deducting from total GNP deflated on the expenditure side the deflated A and I sectors. This means that the errors of GNP expenditure deflation and single deflation of the A and I sectors cumulate in the S sector deflation. Or in most instances, the price indexes used to deflate various personal and public service items in personal consumption expenditures are used for the produce originating side. The difficulties of constructing indexes to deflate government product are well known and usually the methods assume no increases in productivity. Some national accounts agencies like those in Japan and Taiwan make no effort to deflate the product-originating side. The brief comments above are sufficient to conclude that the figures are too rough to take seriously small differences in cross-section and time series comparisons, and even large differences must be interpreted only provisionally.

As a whole, one's impression is that the figures for East Asia are far better than for Southeast Asia and those of the latter better than those of South Asia. Some of the reasons for this conclusion are: (1) East Asia has more censuses, surveys, administrative, and scattered data sources, with larger and more

TABLE 4 TRENDS IN THE SHARE OF EMPLOYMENT, PRODUCT AND PRODUCTIVITY, CURRENT PRICES

Country	(Year)	AN*	AY	AY/AN*	IN*	IY	IY/IN*	SN*	SY	SY/SN*
Japan	(1954)	45.2	22.0	0.49	26.6	39.5	1.48	28.2	38.5	1.37
	(1960)	32.8	15.0	0.46	34.7	45.6	1.31	32.5	39.4	1.21
	(1970)	19.4	7.7	0.40	40.6	46.3	1.14	40.0	46.0	1.15
	(1974)	13.0	6.6	0.51	43.4	43.8	1.01	43.7	49.7	1.14
Growth Rate Per Year (%)		-6.04	-5.84	0.20	2.48	.52	-1.89	2.21	1.28	-.91
S. Korea	(1960)	57.2	39.8	0.70	18.0	30.5	1.69	24.8	29.8	1.20
	(1970)	50.9	31.9	0.63	23.4	34.8	1.49	25.7	33.3	1.30
	(1974)	48.2	27.7	0.57	25.1	38.6	1.54	26.7	33.7	1.26
Growth Rate Per Year (%)		-2.12	-4.43	-2.54	4.24	2.99	-1.16	0.93	1.55	0.61
Taiwan	(1956)	56.0	33.2	0.59	20.8	30.7	1.48	23.3	36.1	1.55
	(1965)	44.8	26.8	0.60	27.3	32.8	1.20	27.9	40.4	1.45
	(1970)	36.7	17.6	0.48	33.7	39.9	1.18	29.6	42.5	1.44
Growth Rate Per Year (%)		-2.97	-4.43	-1.46	3.51	1.89	-1.61	1.72	1.17	-.52
HongKong	(1961)	7.5	3.2	0.43	58.8	47.5	0.81	33.8	49.3	1.46
	(1971)	4.1	2.5	0.61	62.0	43.7	0.70	33.9	53.8	1.59
Growth Rate Per Year (%)		-5.86	-2.44	3.56	0.53	-0.83	-1.45	0.03	0.88	0.86
Singapore	(1957)	8.6	4.7	0.55	31.7	27.2	0.86	59.8	68.1	1.14
	(1970)	3.5	3.1	0.89	42.3	29.1	0.69	54.3	67.8	1.25
Growth Rate Per Year (%)		-6.68	-3.15	3.77	2.24	0.52	-1.68	-0.74	-0.03	0.71
W. Malaysia	(1957)	59.1	44.3	0.75	16.5	17.2	1.04	24.4	38.5	1.58
	(1970)	49.9	31.4	0.63	19.7	30.3	1.54	30.4	38.3	1.26
Growth Rate Per Year (%)		-1.29	-2.61	-1.33	1.37	4.45	3.07	1.71	-0.04	-1.73
Philippines	(1948)	72.2	40.6	0.56	11.0	24.8	2.25	16.8	34.6	2.06
	(1960)	61.2	31.6	0.52	19.0	28.5	1.50	19.8	39.9	2.02
	(1970)	54.7	35.4	0.65	21.2	27.8	1.31	24.1	36.7	1.52
Growth Rate Per Year (%)		-1.25	-0.62	0.68	3.03	0.52	-2.43	1.65	0.27	-1.37
Indonesia	(1961)	73.3	47.9	0.65	10.2	19.1	1.87	16.5	33.0	2.00
	(1971)	65.8	43.8	0.67	12.6	24.1	1.91	21.7	32.1	1.48
Growth Rate Per Year (%)		-1.07	-0.89	0.30	2.14	2.35	0.21	2.78	-0.28	-2.97

(CONTINUATION OF TABLE 4)

Country	(Year)	AN*	AY	AY/AN*	IN*	IY	IY/IN*	SN*	SY	SY/SN*
Thailand	(1960)	83.8	40.9	0.49	5.6	26.8	4.79	10.6	32.2	3.04
	(1970)	80.0	29.1	0.36	7.5	32.2	4.29	12.5	38.7	3.10
	(1973)	72.0	34.5	0.48	11.7	29.8	2.55	16.2	35.8	2.21
Growth Rate Per Year (%)		-1.16	-1.30	-0.16	5.83	0.82	-4.73	3.32	0.82	-2.42
Sri Lanka	(1953)	56.7	54.6	0.96	17.3	21.2	1.22	26.1	24.2	0.93
	(1963)	55.7	49.7	0.89	18.4	27.9	1.52	26.0	22.3	0.86
	(1971)	54.9	41.0	0.75	19.2	32.1	1.67	25.9	26.9	1.04
Growth Rate Per Year (%)		-0.18	-1.57	-1.36	0.58	2.34	1.76	-0.04	0.58	0.62
India	(1951)	70.6	50.3	0.71	13.0	16.8	1.29	16.4	32.9	2.01
	(1961)	73.8	49.9	0.68	13.2	25.2	1.91	13.1	25.0	1.91
	(1971)	72.5	48.8	0.67	14.1	26.3	1.87	13.4	24.9	1.86
Growth Rate Per Year (%)		-0.13	-0.15	-0.29	0.41	2.27	1.87	-1.01	-1.38	0.39
Pakistan	(1972)	60.0	40.7	0.68	21.9	32.2	1.47	18.1	27.0	1.49
Nepal	(1971)	94.4	75.4	0.80	1.4	19.5	13.93	4.2	5.1	1.21
Australia	(1947)	16.6			47.8			35.6		
	(1966)	9.6			48.0			42.4		
	(1971)	7.7			43.2			49.1		
	(1973)	7.2	7.7	1.07	43.0	54.5	1.27	49.7	37.8	0.76
Growth Rate Per Year (%)		-3.16			-0.41			1.29		

*Employment, leaving out unemployed, persons seeking work for the first time, and activities not adequately described, etc.

$$AN^* + IN^* + SN^* = 100\%$$

Sources: Employment and Product Share computed from

1) ILO Yearbook of Labour Statistics and

2) IBRD World Tables 1976

TABLE 4a TRENDS IN THE SHARE OF LABOR PRODUCTIVITY IN THE A, I, S SECTORS (CONSTANT PRICES)

Country	(Period)	Growth Rate of Constant AY/AN	Growth Rate of Constant IY/IN	Growth Rate of Constant SY/SN
Japan	(1954-65)	-2.1	-0.7	-3.0
S. Korea	(1966-74)	-4.4	3.3	-1.1
Taiwan	(1951/53-1971/73)	-2.3	-0.9	-0.4
HongKong	(1961-71)	3.6	-1.3	0.9
Singapore	(1957-70)	2.1	0.9	-0.6
W. Malaysia	(1957-70)	0.9	-0.5	-1.7
Philippines	(1948-74)	-0.1	-1.1	-1.3
Indonesia	(1961-71)	0.3	-1.8	-1.8
Thailand	(1960-73)	-1.3	-3.9	-2.4
Sri Lanka	(1963-71)	-1.6	2.5	0.7
India	(1961-71)	-1.0	0.0	1.4
Australia	(1966-71)	2.0	-2.9	-3.2

Sources: Employment data from ILO Yearbook of Labour Statistics, and Constant product data from country publications.

experienced staffs in the national accounting offices, generally speaking; (2) the size of the small units relative to the total S sector is larger in South Asia than in Southeast Asia, and the latter larger than in East Asia, generally speaking; (3) and finally, tax administration in East Asia and Singapore is better than other parts of Asia (we assume here that proprietors' income and sales reporting in the surveys are similar to what they report to tax agencies).[1/]

In Table 4 the share of the income or product of S sector is shown. This share is the total output of the sector divided by net national product (excluding imputed rent of owner-occupied dwellings in both). The highest shares are those of Singapore and HongKong mainly due to the reasons discussed above particularly the negligible size of the A sector. If we leave out these city-states, and keep in mind some of the factors mentioned above, the shares correlate fairly well with the size of per capita dollar incomes of each country, with Japan's share highest and Nepal's lowest.[2/] S.Korea's share is on the low side partly because of the large size of its armed

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1/ In a recent study of Taiwan's postwar economic growth and structural change, (to be published soon), Simon Kuznets has found a number of problems in the S sector's income estimates and had to work out various make-shift adjustments. A detailed review and assessment of postwar GNP data of Asian countries by academic economists are clearly needed but this is too large a task for a brief study such as this.

2/ Spearman's Rank correlation coefficient is .761 (significant at the 1% level: .729).

TABLE 5 OUTPUT PER WORKER IN A, I AND S SECTORS, CURRENT PRICES AND LOCAL CURRENCIES

Country	(Year)	In A Sector	In I Sector	In S Sector	S/I	S/A
Japan	(1970)	435,964	1,250,746	1,261,851	1.01	2.89
S. Korea	(1970)	140,373	333,240	290,002	0.87	2.07
Taiwan	(1973)	19,453	42,358	54,620	1.29	2.81
HongKong	(1971)	7,119	8,198	18,511	2.26	2.60
Singapore	(1970)	7,623	5,761	10,474	1.82	1.37
Philippines	(1970)	1,968	3,855	4,441	1.15	2.26
Thailand	(1970)	2,916	29,812	20,388	0.68	6.99
W. Malaysia	(1970)	2,276	4,934	4,296	0.87	1.89
Indonesia	(1971)	66,327	187,621	147,629	0.79	2.23
Sri Lanka	(1971)	2,134	5,609	4,596	0.82	2.15
India	(1971)	1,325	3,691	3,658	0.99	2.76
Pakistan	(1972)	1,706	3,553	4,739	1.33	2.78
Nepal	(1971)	1,319	18,875	4,825	0.26	3.66
Australia	(1973)	6,388	7,537	4,528	0.60	0.71
U.S.A.	(1971)	8,566	12,972	13,950	1.08	1.63

Sources as in Table 4

forces which are paid low annual incomes. Sri Lanka's high share relative to income is due to the large size of the public sector (as noted above) and the high rates of remuneration received by civil servants. Since these shares are nothing but average annual incomes in the S sector multiplied by the number employed or SN in Table 1, close association with per capita dollar incomes are to be expected first because of the association found in Chart 1, with respect to SN, secondly because of the tendency of returns to labor and capital in the S sector to relate and move with the other sectors of the economy, especially the I sector, and thirdly, the conversion of local currencies into dollars via foreign exchange rates to correspond to the real purchasing power of currencies.

In Table 5 are shown output per worker for S, A, and I sector, in current prices, and in local currency units. For most countries the relation between productivities in the S and I sectors are fairly close, considering the differences in the two sectors' structure of inputs (and outputs) --- differences in the nature of capital goods and of labor force. But note the vast differentials in the productivity of the A sector compared with the S sector. There may be a statistical problem involved due to the extreme seasonality of employment in monsoon padi agriculture. As noted above, during the dry half of the year where there is little farm work, the peasant and his wife must find work in the nonagricultural sectors, in construction, in cottage and processing industries, in little stores, stalls, eating

places, domestic work, and so on. Thus, much more A sector workers are engaged part of the year in the I and S sectors than the reverse. In East Asia, average farm family budgets show that in Japan about 60% of total income are derived from non-farm sources, in Taiwan 50%, and in S.Korea about 40%, around the 1970's. In Southeast Asia and South Asia, the percentage is smaller, roughly about 20 to 25%, nevertheless, in these countries the agricultural sector is substantially larger relative to the non-farm sector in East Asia. Hence, part (and perhaps a substantial part) of the income originating in the I and S sector in the national accounts need to be credited to the A workers rather than the I and S workers in computing productivity measures. This would significantly reduce the large S/A ratios in Table 5, without perhaps very much affecting the S/I ratios (although data on this aspect are lacking). This statistical deficiency must be kept in mind constantly in interpreting labor productivity data from national accounts tables. This may be true for all LDC's but more so in monsoon Asia with pronounced seasonalities.

This problem does not exist for the HongKong and Singapore S/I ratios which are the highest in Asia. The reason is that these countries pay the highest salaries to their civil servants, as a legacy of British colonial administration. The commercial and financial sectors have larger proportions of multinational enterprises than in other countries, and they pay better. The commercial activities generated

by foreign trading and modern tourism pay good remuneration, even to unskilled occupations. The menial, marginal, and low-productivity service activities which are the only ways the redundant population in the cities can find a way to scratch out a living in labor surplus Asia have been substantially reduced by conditions of labor shortage. And there may be other factors which I may not be aware of.

For the nations with rural sectors in Table 5, the level of productivity in Southeast and South Asia is lower in the S sector relative to the I sector, with Nepal showing the lowest (0.26). This is surprising since the countries in East Asia (Japan, Taiwan, HongKong, Singapore, and S.Korea) have vastly more efficient I (than S) sector compared to Southeast and South Asia (except in Singapore). It is possible to speculate as follows, in explaining the relatively low S sector productivities in Southeast and South Asia than in East Asia. In the former countries, surplus labor in the form of open unemployment and underemployment (including menial, marginal, low-productive employment) was substantial while in the East Asian countries (and Singapore) by 1970 much of the surplus labor had been wiped out with per capita income growth in the 1960's exceeding the growth of the labor force. 1/

1/ See special volume on labor absorption in East and Southeast Asia in the Philippine Economic Journal, Nos. 1 & 2, Vol. XV, 1976, for the data and detailed discussion. S.Korea still had in 1970, modest amounts of unemployment and this may explain its low S sector productivities but with the continued rapid expansion of the I sector (via labor-intensive techniques), Korea was approaching full employment, while the other East Asian countries were experiencing labor shortage by 1970.

With labor surplus and high rates of growth of the labor force (2.5% to 3.0%) and relatively slow, (and capital-intensive) growth of the I sector, the excess labor force in agriculture had to find jobs in the I and S sectors, especially in the marginal sub-sectors. With population densities per arable land highest in the world, (especially in the large river valleys and basins of South-east and South Asia where most of the rice crops are grown), the rapidly increasing labor force had to find jobs in the villages, towns, and cities in the S and I sector, where the lack of arable land was not a constraint to their employment as in agriculture. But for most of the I sector, some amount of fixed capital was needed for additional workers, so that except for the cottage industries, capital was a constraint to the employment of the growing labor force in the I sector. It was to the traditional sectors of the S sector that the excess labor force went since lack of arable land and fixed capital was not a barrier to employment. With the economy growing slowly, the demand for most of the traditional, labor intensive services fell behind the increase in the supply of workers, so that current wages tended to fall (or rise more slowly than in other sectors). In some countries such as in Indonesia, there were attempts at job sharing (as in public services, personal services, and in the petty trades, stall-keeping, peddling, etc.).

Wage data are difficult to find for these marginal services. Family income distribution statistics exist for some of the countries

TABLE 6 GROWTH RATE OF PRODUCT PER WORKER IN THE I AND S SECTORS AT CURRENT AND CONSTANT PRICES AND AT LOCAL CURRENCIES (IN %)

Country	(Period)	Growth Rate of Current Product Per Worker in I Sector	Growth Rate of Current Product Per Worker in S Sector	Growth Rate of Constant Product Per Worker in I Sector	Growth Rate of Constant Product Per Worker in S Sector
Japan	(1954-65)	9.2	9.9	7.6	5.1
S. Korea	(1966-74)	19.9	22.1	8.6	4.3
Taiwan	(1961/63-1971/73)	11.7	11.8	7.4	7.6
HongKong	(1961-71)	6.7	9.2		
Singapore	(1957-70)	9.1	5.0	5.9	4.4
W. Malaysia	(1957-70)	3.0	1.5	4.0	2.7
Philippines	(1948-74)	7.0	5.7	1.4	1.2
Indonesia	(1961-71)	142.7	134.8	0.5	0.4
Thailand	(1960-73)	4.3	6.7	1.8	3.4
Sri Lanka	(1963-71)	7.5	6.2	5.6	3.8
India	(1961-71)	9.7	11.6	3.9	5.3

Sources: Computation based on a) Employment data from ILO Yearbook of Labour Statistics
b) Current Product data from IBRD World Tables 1976
c) Constant Product data from country publication.

in the region. For Sri Lanka (1973), W. Malaysia (1967-1968) and the Philippines (1971), the Gini coefficient is higher in the S sector than either the A and I sector. The frequency distribution curves put on charts with the average incomes on the horizontal axis and household frequencies in the vertical axes indicate that in all three countries the high disparities in the S sector are due to the heterogeneous character of the service sector. Unlike in agriculture with a high and large mode at low levels of income and very small proportions of families in the middle and high levels, and unlike in the I sectors where the small mode is slightly below the median income levels with a small proportion in the low and high income levels, the S sector curve has a mode similar to that of I sector but with a larger proportion of families in the lower and high income levels.

It is possible to speculate about the occupations of heads of families comprising these three levels of income. Proportionately, the S sector tends to have the largest number of higher income families, and these are made up of proprietors employing several workers in the commercial, financial and personal enterprises, and of professionals in personal and business services and administrators in public services. The middle level families are mainly made of civil service employees and technical and skilled staffs of commercial and personal service firms while the low income groups are composed of the marginal menial occupations, largely own-account

workers in the petty trades, stall-keeping, peddling, hawking, domestic services, etc.[1/]

In Table 6, the growth rates of output or income (in current prices) per worker in the A, I, and S sectors are shown. While for the Philippines, Malaysia, and Indonesia, these growth rates in the S sector are lower than in the I sector, this is not the case for Japan, S.Korea, Taiwan, and HongKong, where despite extremely high rates of productivity growth in the I sector, income per worker goes up faster. This unusual outcome may be explained as follows. Just as the surplus labor economies in Southeast and South Asia were unable to raise average incomes earned in the S sector to the levels of the I sector despite the latter's low levels of productivity, so in the East Asian countries, full employment and even labor shortage caused increases in average incomes in the S sector to be greater. Fortunately, some evidence from wage and price statistics exist to show that wages for low-paid S sector workers rose more rapidly than the wages paid in other sector and more rapidly than productivity, so that one of the various sources of inflation in the 1960's for East Asia derived from the labor shortages in their economy.

1/ In Asia, as elsewhere, the females participate proportionately more than males in the S sector than in the I sector since work tends to be lighter in the former, with the exception of HongKong where the textile industries find female workers more suitable than male.

In Japan, unemployment rates in the latter 1950's had fallen as low as 1%, and maids and cooks were difficult to hire at prevailing rates of pay even as early as the beginning of the 1960's (as my personal experience confirmed). In the 1960's, wages of regular workers in establishments with 5 to 29 workers were rising faster than in establishments with 30 or more workers. Prices of consumer goods in small, labor-intensive establishments also rose faster than prices of goods produced in large, more capital-intensive firms. Prices of services produced in small outlets (restaurants, repair services, personal services, and so on) increased more than commodities in the cost of living index.[1/]

Table 6 also shows that deflated output per worker in Japan's S sector rose by 5.1% per year compared to 7.6% in the I sector for 1954 to 1965 (years for which deflated income by industries are available). The slow growth of productivity in the S sector, despite the fact that in 1954 it was the depository of underemployed workers, is due to many reasons. Persistence of small units of retailers, wholesalers, personal service shops is due to the long period of time it takes for structural and institutional changes to take place in the S sector. The S sector produces output which closely involves the household sector with the service establishments. Smallness of

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1/ Japan Statistical Yearbook, 1970, Bureau of Statistics, Prime Minister's Office, pp. 396-404 and pp. 372-373.

homes, kitchens, storage space and preference for fresh foods require daily marketing and the latter come to involve the purchasers in personal relationships going beyond impersonal business transactions with neighborhood retailers, shop-owners, barbers, etc. Moreover, the retailers also become involved in personal relationships with small wholesalers, who in turn get tied up with small manufacturers and farm producers and in time a whole structure of long term relationships is built up which cannot be easily dissolved in countries with social values like in Japan.[1/] Added to this is the large number of persons employed in the S sector and the numerous, small proprietors organized into strong associations of various kinds at different levels, so that political factors enter into the picture, making difficult the attempts by the government to accelerate changes in the S sector.

Similar institutional, political and social factors impede the conversion of Japan's small-scale mechanized agriculture into large-scale agriculture along Western lines, with the result that the small-scale technologies of the A and S sector become one of the major sources of the persistence of long term inflation in the 1960's. Wages rise as fast and even faster in the S sector but growth of productivity is slow, relative to the I sector. The high cost of

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1/ See M. Yoshino, Japanese Marketing System, 1971, MIT Press, Chapter 1 for the above.

living in Japan whose over-all index is heavily dominated by the output in the A and S sectors is largely due to the low levels of productivity in these two sectors, compared to the U.S. This cost of living when converted into U.S. dollars is probably the highest in the world as the value of the dollar falls below 250 yen. (This high exchange value of the yen is largely determined by the high productivity in the I sector, especially the large-scale, capital- and technology-intensive export industries.) Even more than the shrinking A sector, Japan's major problem for the coming decade will reside in the large S sector whose low productivity is due to the predominance of hand equipment and small-scale machines in its production operation.

In Taiwan, unemployment fell to 1% around the turn of the decade in 1970. With labor shortage, prices of consumer goods produced by the labor-intensive, low-skill using industries (fish and meat, poultry, fruits and vegetables) and the services (household operations, including domestic and repair services, barbers, and others) rose much more than in other commodities. The pattern of price increases in the first half of the 1960's was different, with food and service prices rising less than the general consumer price index. Thus, the acceleration in the index from 2.2% per year between 1960-1966 to 4.5% between 1966-1971 was largely due to the rise in goods and services produced by unskilled labor in the A and

S sectors whose wages rose with labor shortages.[1/] This is similar to the Japanese experience in the early 1960's, though the exchange rates remained unchanged in the late 1960's as the export of large-scale I industries was negligible. As in Japan, the growth of output per worker in current prices was somewhat larger in the S over the I sectors (Table 6), but the reverse was the case in the growth of output per worker in constant prices. As in the case of Japan, a major source of accelerating prices was the rise in prices in the S sector due to rising wages and lagging productivity.

The data for HongKong, S.Korea and Singapore are not available as in Japan and Taiwan. But similar conclusions can be reported for them. Unemployment has been declining rapidly and complaints of labor shortages, particularly of finding maids and cooks, became extensive in 1972. In HongKong refugees from China and in Singapore influx of workers from West Malaysia helped to ease the shortages, but around the turn of the decade consumer price increases began to accelerate in all three countries. In S. Korea since 1967, the pattern of price increases in the consumer

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1/ Data from the Statistical Abstract of the Republic of China, DGBAS, Table 128 from the 1972 volume and Table 83 from the 1963 volume, and the Quarterly Report of the Labor Force in Taiwan, No. 37. The consumer price indexes of Taipei City show that it was rising by 24% between 1966-1972, but wages of house repair workers, recreation services, and domestic services, janitors, gardeners rose from 70% to 190%. Monthly Commodity-Price Statistics, Taipei City, No. 66, June 1973.

price indexes began to resemble those for Japan and Taiwan.[1/]

The foregoing conclusions are generally in line with the trends shown in Table 4a, which show that (constant-price) product per worker (in terms of shares) in the S sector relative to that of I is declining, in the countries where substantial growth is underway.[2/] The fact that this relative decline does not show up in Table 4 with current-price product per worker (in terms of shares) series is due to the faster rise in prices of services than in the prices of industrial product.

Concluding Notes[3/]

In this preliminary effort to examine the postwar Asian statistics of labor force and national accounts for trends in the growth and structural changes in the S sector, the following conclusions may be tentatively summarized. Structural changes have been rapid

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1/ For a fuller treatment of these countries, Harry Oshima and Nguyen Dac Quy, "Labor Squeezing in Labor Shortage Economies of Asia: the Interplay of Appropriate Technology and Institutions," Discussion Paper Series No. 74-07, August 1974, The Council for Asian Manpower Studies, The University of the Philippines, School of Economics, Quezon City, Philippines.

2/ See S. Kuznets, Economic Growth of Nations, Belknap Press of Harvard University Press, Cambridge, Mass., 1971, pp. 236-237.

3/ Unfortunately, time and publications at hand did not permit a look at the demographic and educational aspects of the labor force in the S sector.

in all countries where the growth of per capita income has been rapid; these changes have been slower for countries with slower growth. For countries with little growth, the S sector has stagnated. Thus, the association of the two is clear.

But where the growth of per capita incomes has been exceedingly rapid, (more rapid than labor force growth) structural changes in the S sector have not been able to keep pace and tended to lag, producing problems of inflation and serious maladjustments. Where the growth of per capita incomes have been moderate to slow, (equalled to or slower than the growth of the labor force), the S sector appears to have been the depository of workers not needed in the agricultural sector (where arable land is required for production) and in the industrial sector (where fixed capital is required). The "disguisedly" unemployed workers have no place else to go but to the S sector (and to cottage industries) where land and fixed capital required for production are minimal, certainly much less than in the A and I sectors, so that the intensity of work per hour and per day can be reduced without incurring heavy capital and land charges. The income from this type of employment can fall very low because work in service industries tend to be "light", requiring lower work calories per hour than in the commodity producing sectors. Furnishing some kind of employment for the unemployed is a valuable contribution of the S sector in labor surplus economies, but this may delay and even deter actions by the community to create more productive employment.

These are unique problems whose solutions are complex. For the labor shortage economies of East Asia and Singapore, the problem of increasing productivity in the service sector requires more than greater credit extensions to the small units. As noted for Japan, their smallness and labor-intensity are deeply rooted in the living conditions (e.g. small homes) of the consumers on the one hand, and the small-scale units of manufacturers and small farmers on the other; that is to say, it is rooted in the very nature of high densities in the rice lands of Asia. 1/ With the prospect of

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1/ See Special Issue on "Multiple-Cropping in Asian Development", Philippine Economic Journal, Vol. XIV, Nos. 1 & 2, 1975, pp. 109-121 where it is described how the bits of output produced by small farmers are collected by a wide network of small collecting, processing, selling, and servicing agencies. The small amounts produced in the rural areas during different seasons of the year entail small means of transport and commercial units to which in turn are associated the small industrial units which buy them for fabrication. There are other reasons making for a large S sector compared to other regions: the low densities imply that natural and material resources per capita are scarcer. This means that besides capital resources, other material input or resources tend to be saved and more labor used. Thus Asian meal preparation is more labor intensive requiring more time put into seasoning, cutting, cleaning, and so forth in the use of meats, vegetables, etc. Also the small size of retailing and personal service units enable consumer saving in transportation costs, besides saving in housing space, refrigeration and storage costs by frequency of shopping. (In Japan, there are some areas still with public baths.)

Despite the hardships imposed on the growth of monsoon Asia by great densities, once full employment is reached these densities bring certain advantages which may partly account for the exceedingly high growth rates of East Asia and Singapore. This is the fact that density confer savings and economies in transport, communication, and construction, etc., which may be substantial. There may be more intensive use of available service facilities since unlike A and I services can be produced with very minimal use of land and capital. Under conditions of labor surplus, service facilities come to be underutilized.

new technologies from the rapidly developing electronic industries plus credit extensions and falling rate of labor force growth in the 1980's, the solution may be within reach if social and institutional problems can be met. The latter will call for bigger homes, kitchens, refrigerators, storage space, better means of transportation, etc. on the consumers' side and growth in the scale of production of small, domestic industries and farms. But these take a long time to be accomplished, even when the political will is present.

The solutions to low-productivity employment in the S sector in labor surplus economies are difficult also. Labor force growth at high levels will continue into the 1980's and the 1990's and the electronic technologies coming into the market may turn out to be both labor-saving and capital-saving, so that the better situated proprietors in the S sector may find them profitable to adopt.

In the final analysis, the problems of the S sector originate in the other sectors, (as it is a sort of a residual sector, namely, in the shortage of arable land in the A sector and in the capital-intensity of new investment for the I sector. The export of services is limited --- limited to tourism and emigration. Therefore, the task in the A sector is to intensify the use of existing arable land (e.g., by multiple-cropping during the year) and open up new lands in countries where potentially arable land are available, and to encourage labor-intensive industries. Both policies in turn require a wider distribution of credit, reaching the small farmers and small industries and

of extension services all of which imply organizational and institutional changes.

These are tentative conclusions because the data on which they rest have been brought together hastily from well-known sources. They need to be examined in detail not only for the statistical problems raised in this paper but also for the puzzling behavior of several of the series in some of the countries included in the tables and other excluded. But this too is a long-term task beyond the capacities of a few scholars. And if this is to be done, the conceptual basis of the data collected for the S sector should be looked into, e.g., problems of defining the S sector which seemed to have been done in ad hoc fashion, leaving to the S sector all those industries which cannot be fitted into the commodity sectors and thus creating a vast hodge-podge grouping.

APPENDIX TABLE 1 : MISCELLANEOUS CROSS-SECTION STATISTICS

Country	(Year)	Total Population (in Millions)	Labor Force Participation Rate, 15 years & above	Female Labor Force Participation Rate	Population in Urban Areas Per Capita	No. of Tourist Per Capita	Government Revenue as % of GNP	Defense Expenditures as % Of GNP	Exports as % of GNP
Japan	(1970)	104.3	67	51	72	0.8	12.31[j]	0.8[k]	11
S. Korea	(1970)	31.4	56	38	41	0.5	18.3	3.9	15
Taiwan	(1970)	14.5	57[a]	35[b]	63[c]	3.3[g]	22.3	8.8	31
HongKong	(1971)	4.0	64	43	89[d]	22.4	17.5	0.6	85[h]
Singapore	(1970)	2.1	56	29	100	25.1	24.1	6.1	78[i]
W. Malaysia	(1970)	8.8	57	36	29	0.9	22.8	7.5	46
Philippines	(1970)	36.8	55	34	32	0.4	8.8	1.6	19
Indonesia	(1971)	119.2	57	36	17	0.2	11.1	3.3	14
Thailand	(1970)	35.9	80	73	13	1.8	14.3	3.1	17
Burma	(1973)	29.6			19[e]		17.1	6.3	6
Sri Lanka	(1971)	12.7	56	30	22	0.3	20.7	1.4	17
India	(1971)	547.9	53	19	20	0.1	15.6	12.7	4
Pakistan	(1972)	66.7			29[f]	0.1	13.8	7.2	8
Nepal	(1971)	11.3	61	34	4	0.4	5.1	0.6	

Sources: Figures are generally from World Tables 1976, Yearbook of Labour Statistics 1975, Demographic Yearbook 1973, and UN Statistical Yearbook 1972.

a,b Labor force participation rates are the averages for 1970 taken from the Quarterly Report on the Labor Force Survey in Taiwan, Republic of China.

c,d,e are for 1973 taken from the Key Indicators of Developing Countries of ADB; definition of urban varies for countries

f for 1976 taken from the Key Indicators of Developing Countries of ADB.

g from Taiwan Statistical Data Book, 1975.

h,i taken from the Key Indicators of Developing Countries of ADB.

j,k data taken from UN Statistical Yearbook, 1974.

APPENDIX TABLE 2 : MISCELLANEOUS TIME SERIES STATISTICS

Country	Average Annual Compound Growth Rates of									
	Total Population[7]		Urban Population as % of Total Pop.[8]		% Tourist Per Capita[9]		Government Revenue as % of GDP[10]		Exports as % of GNP[11]	
	Period	%	Period	%	Period	%	Period	%	Period	%[6]
Japan	1950-60	1.3	1950-60	5.4	1951-60	29.3[3]	1952-60	-0.9	1950-61	3.2
	1960-70	1.0	1960-70	1.3	1960-70	23.4	1960-70	0.5	1961-70	1.4
S. Korea	1950-60	2.8	1949-60	3.3			1953-60	6.2	1950-61	1.3
	1960-70	2.3	1960-70	3.9			1960-70	0.2	1961-70	14.0
Taiwan	1950-60	3.3	1950-55	0.8	1950-60	40.0[3]	1952-60	2.1	1950-61	1.7
	1960-70	3.2	1955-73	0.7	1960-70	18.1	1960-70	-0.6	1961-70	10.9
HongKong	1950-60	4.9			1949-60	-5.5[4]	1960-65	1.3	1950-61	-5.9
	1960-70	2.6	1961-73	1.7	1960-71	37.1	1965-72	5.4	1961-69	2.0
Singapore	1950-60	4.8	1947-60	-1.1			1960-65	1.9		
	1960-70	2.4	1960-70	4.8			1965-70	0.7	1961-69	-6.2
W. Malaysia	1950-60	2.9	1947-57	4.9[5]			1958-65	2.4		
	1960-70	3.0	1957-70	-3.0			1965-72	2.6	1961-70	-1.7
Philippines	1950-60	3.1	1948-56	4.9			1952-60	0.3	1950-61	-1.4
	1960-70	3.0	1956-70	-0.8	1960-71	13.2	1960-70	0.4	1961-70	3.0
Indonesia	1950-60	2.1					1960-65	-21.0		
	1960-70	1.9	1961-71	1.6	1960-71	15.8	1965-72	18.6	1961-70	2.6
Thailand	1950-60	3.0	1947-60	1.4	1949-60	20.1[4]	1960-65	1.6	1950-61	-1.8
	1960-70	3.0	1960-70	1.1	1960-70	50.2	1965-72	-0.6	1961-70	-0.04

(CONTINUATION OF APPENDIX TABLE 2)

Country	Average Annual Compound Growth Rates of									
	Total Population[7]		Urban Population as % of Total Pop.[8]		% Tourist Per Capita[9]		Government Revenue as % of GDP[10]		Exports as % of GNP[11]	
	Period	%	Period	%	Period	%	Period	%	Period	%[6]
Burma	1950-60	1.8					1952-60	1.7	1950-61	-0.2
	1960-70	2.1					1960-70	-1.3	1961-70	-12.0
Sri Lanka	1950-60	2.6	1945-56	1.3			1958-65	2.3	1950-61	-2.8
	1960-70	2.4	1956-71	1.6	1951-71	-13.9[3]	1965-72	-0.8	1961-70	-5.2
India	1950-60	1.8	1951-61	3.5	1951-60	2.5[3]	1951-60	2.4[2]	1950-61	-3.4
	1960-70	2.3	1961-70	1.0	1960-71	15.8	1960-70	2.2	1961-70	-1.8
Pakistan	1950-60		1951-61	2.7			1960-65	1.8		
	1960-70	3.2	1961-68	10.2			1965-72	0.8	1961-70	-0.5
Nepal	1950-60	1.5	1952/54-61	0.0			1960-65	2.1		
	1960-70	1.8	1961-71	3.6			1965-72	7.2		

Notes for Appendix Table 2 :

1. As % of GNP
2. 1951 as % of GNP
3. 1951 tourists as % of 1950 population
4. 1949 tourists as % of 1950 population
5. 1947 data for Federation of Malaysia
6. computed on the basis of a three-year average where the year indicated is the middle year, except for 1950 because data for 1949 and 1951 are not given.
7. data obtained from World Bank Tables.
8. data obtained from UN Demographic Yearbooks.
9. data obtained from UN Statistical Yearbooks.
10. data obtained primarily from UN Statistical Yearbook for Asia and the Far East (1971 & 1969) [revenue figures] and UN Yearbook of National Accounts Statistics [revenue & GDP figures]. A supplementary source was the World Bank Tables.
11. data obtained from World Bank Tables except for 1969 HongKong, 1961 & 1969 Singapore which were taken from the UN Statistical Yearbook for Asia and the Far East.

Growth Rates were computed using the formula

$$A = B\ (1 + r)^t$$

where A = the value of terminal year of time period

B = the value of initial year of time period

t = time period = A - B

r = growth rate

APPENDIX TABLE 3 : EMPLOYMENT, CURRNET AND CONSTANT OUTPUT IN A, I, S SECTORS (N = Employment, Y = Output, m = million, b = billion, Cu = Current, Co = Constant)

Country Year	A SECTOR			I SECTOR			S SECTOR			TOTAL		
	N	Y		N	Y		N	Y		N	Y	
	(m)	Cu (b)	Co (b)	(m)	Cu (b)	Co (b)	(m)	Cu (b)	Co (b)	(m)	Cu (b)	Co (b)
Japan												
1954	18.1	1,460.1	1,396.0	10.6	2,555.0	3,262.0	11.2	2,519.0	330.7	39.9	6,534.0	4,988.7
1960	14.3	1,906.0	1,837.0	15.2	5,838.0	7,041.0	14.2	4,556.0	526.6	43.7	12,300.0	9,404.6
1970	10.2	4,431.0		21.3	26,644.0		21.0	23,884.0		52.5	54,959.0	
1974	6.7	7,073.1		22.5	47,461.0		22.7	52,726.0		51.9	107,260.3	
S. Korea												
1966	4.6	363.4	667.3	1.4	278.7	364.0	2.0	271.3	493.8	8.0	913.4	1,525.1
1970	5.2	723.9	723.9	2.4	789.5	789.0	2.6	753.7	753.9	10.2	2,267.1	2,266.8
1974	5.6	1,713.1	846.8	2.9	2,429.2	1,429.0	3.1	2,103.4	108.4	11.6	6,239.7	2,384.2
Taiwan												
1951-53	1.8	5.5	15.5	0.5	3.3	12.2	1.3	6.2	19.0	3.6	15.0	46.7
1961-63	1.8	18.2	25.1	1.0	19.5	36.4	1.5	26.0	39.3	4.3	63.7	100.8
1971-73	1.7	37.8	38.4	1.9	112.3	150.5	1.9	100.5	104.5	5.5	250.6	293.4
HongKong												
1961	0.1	0.2		0.7	2.9		0.4	3.1		1.2	6.2	
1971	0.1	0.5		1.0	8.1		0.5	9.9		1.6	18.5	
Singapore												
1957	0.04		0.1	0.1		0.5	0.3		1.3	0.4		1.9
1970	0.02	0.2	0.1	0.3	1.6	2.1	0.4	3.7	2.9	0.8	5.5	5.1
W. Malaysia												
1957	1.2		2.0	0.3		0.8	0.5		1.8	2.0		4.6
1970	1.2	2.8	3.9	0.5	2.4	1.8	0.7	3.2	3.7	2.4	8.4	9.4

(CONTINUATION OF APPENDIX TABLE 3)
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Country Year	A SECTOR N (m)	A SECTOR Y Cu (b)	A SECTOR Y Co (b)	I SECTOR N (m)	I SECTOR Y Cu (b)	I SECTOR Y Co (b)	S SECTOR N (m)	S SECTOR Y Cu (b)	S SECTOR Y Co (b)	N (m)	Cu (b)	Co (b)
Philippines												
1948	4.9	2.0	3.0	0.7	1.2	1.9	1.1	1.7	2.8	6.7	4.9	7.7
1960	5.4	3.7	5.6	1.7	3.2	4.4	1.7	4.5	6.6	8.8	11.4	16.6
1970	6.3	12.5	8.5	2.5	9.5	7.4	2.8	12.4	10.3	11.6	34.4	26.2
1974	8.4	29.0	9.6	2.7	26.5	10.0	3.8	24.4	12.7	14.9	79.6	32.3
Indonesia												
1961	23.5	0.2	205.0	3.3	0.1	87.0	5.3	.2	112.8	32.1	.5	404.8
1971	24.9	1,654.6	280.5	4.8	912.5	133.0	8.2	1,215.2	183.3	37.9	3,782.3	596.8
Thailand												
1960	11.3	21.4	21.4	0.8	12.7	15.1	1.4	12.7	17.9	13.5	46.8	54.4
1970	13.2	38.5	36.2	1.2	37.1	38.7	2.1	42.0	42.6	16.5	117.6	117.5
1973	12.3	62.3	41.9	2.0	58.8	51.0	2.8	57.1	53.7	17.1	178.2	146.6
Burma												
1973	8.0	4.2	4.2	1.5	2.3	2.3	1.5	5.3	5.3	11.0	11.8	11.8
Sri Lanka												
1953	1.6	2.4		0.5	0.9		0.7	1.1		2.8	4.4	
1963	1.7	2.6	2.9	0.6	1.7	1.0	0.8	2.2	2.1	3.1	6.5	6.0
1971	1.8	3.9	3.5	0.6	3.6	1.8	0.9	4.0	3.2	3.3	11.5	8.5
India												
1951	71.8	50.2		13.2	23.9		16.7	21.7		101.7	95.8	
1961	137.5	70.6	70.1	24.5	35.6	33.7	24.3	29.8	31.0	186.3	136.0	134.8
1971	130.0	172.2	87.7	25.1	92.8	50.5	24.1	88.0	51.2	179.2	353.0	189.4
Pakistan												
1972	10.5	17.9	17.9	3.8	13.6	13.6	3.2	15.1	15.1	17.5	46.6	46.6

(CONTINUATION OF APPENDIX TABLE 3)

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Country Year	A SECTOR N (m)	A SECTOR Y Cu (b)	A SECTOR Y Co (b)	I SECTOR N (m)	I SECTOR Y Cu (b)	I SECTOR Y Co (b)	S SECTOR N (m)	S SECTOR Y Cu (b)	S SECTOR Y Co (b)	TOTAL N (m)	TOTAL Y Cu (b)	TOTAL Y Co (b)
Nepal												
1971	4.6	6.0	6.0	0.1	1.3	1.3	0.2	1.0	1.0	4.9	8.3	8.3
U. S. A.												
1950	7.3	17.6		25.8	114.0		24.3	108.3		57.4	239.9	
1960	4.5	20.4	20.7	28.2	225.4	229.1	32.4	235.4	252.0	65.1	481.2	501.8
1971	3.6	31.0	28.4	32.5	421.8	357.6	47.3	582.5	370.8	83.4	1,035.3	756.8
Australia												
1947	0.5			1.4			1.1			3.0		
1966	0.5	1.9	2.2	2.3	9.3	11.0	2.0	6.0	8.7	4.8	17.2	21.9
1971	0.4	2.0	2.6	2.2	14.9	15.3	2.5	10.4	11.2	5.1	27.3	29.1
1973	0.4	2.6		2.4	18.3		2.8	12.7		5.6	33.6	

Sources:

Employment data from ILO Yearbook of Labour Statistics.

Current output data from World Tables 1976.

Constant output data from Country Publications.

Sources of Data for most of the tables especially Appendix Table 3

1. Employment data mainly from ILO Yearbook of Labour Statistics except Nepal which is taken from Population Census 1971.

2. Current product data obtained from IBRD World Tables 1976. S Sector adjusted by excluding ownership of dwelling (data of which came from U.N. Yearbook of National Account Statistics, Denison and Chung How Japan's Economy Grew So Fast and some country publications listed below).

3. Constant product data from the following publications:

   Japan - Ohkawa, K. Japanese Economic Growth
   Taiwan - Kuznets' forthcoming paper
   Korea, S. - The Bank of Korea National Income in Korea 1975
   Singapore - Yin, K.F. and D.H. Clark's article in Philippine Economic Journal, No. 30
   Malaysia, W. - Rao, V.V.B. National Accounts of West Malaysia 1947-1971
   Philippines - NEDA Philippine Accounts estimate as of 1975
   Indonesia - Indonesia Statistical Pocketbook, various years
   Thailand - National Income of Thailand, various years
   Sri Lanka, India & Australia - U.N. Yearbook of National Account Statistics.

4. Table on Rural and Urban S Employment obtained from respective population census of each country.