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A NOTE:

DEFINING THE NON-FARM EMPLOYMENT QUESTION

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I. INTRODUCTION

Once we have identified trends in on-farm employment as being of interest -- which is very much the case now that the full impact of agricultural modernization is being felt -- simple logic invites us to inquire about "non-farm" employment. The subjects are presumably complements so far as labor absorption outside major urban areas is concerned.

Yet a question about "non-farm employment" is one our conceptual apparatus cannot handle. Not merely has such a concept not been defined; assuming the question is essentially one of non-agricultural employment in and around agricultural market centers, the relevant data is divided and concealed. Non-agricultural employment in and around towns of less than 2,500 is typically catagorized simply as "rural" while that in larger towns is contained within "urban" totals. The sense that something is remiss is heightened when it is noted in a particular circumstance -- the case of the Philippines as of 1968 -- that non-agricultural employment in population centers too small to be categorized as urban account for one-half the manufacturing employment in the country and for 40% of total non-agricultural employment (see Table I, below). Thus, it would seem that analysis of non-

farm labor absorption needs to be conducted outside the confines of the usual rural-urban framework.

This Note suggests that some definition of non-farm employment may make it possible to draw together conceptually the pieces of the non-agricultural labor picture outside major urban areas. It is felt important insights are afforded by the perspective of such a concept, despite the fact it is not yet clear what the difficulties may be in applying it in empirical research. In particular, although it seems reasonable to assume that the impact of prosperity in the agriculture sector is felt strongly up through several strata of towns and cities serving this sector, the impact on employment may become diffused relatively quickly. As a result, although conceptually it might be desirable to include the employment of regional market centers when attempting to correlate increases in agricultural productivity with non-farm labor absorption, in econometric studies it may be necessary to limit the scope attributed to non-farm employment to population centers relatively close to the farm.

In the discussion that follows the concept of non-farm employment will be given a particular definition, an analytical framework for using it will be suggested, and finally certain of its practical and theoretical implications will be considered. Philippine data for 1968 will be used at times for illustrative purposes.

II. A DEFINITION AND DISAGGREGATION OF NON-FARM EMPLOYMENT

Conceptually "non-farm employment" will be given its broadest connotation, being defined as encompassing the non-agricultural employment of all strata

of agricultural market centers. Employment in these centers is obtained by derivation: employment in "national urban areas" is subtracted from total non-agricultural employment and the residual is attributed to agricultural market centers. "National urban areas" is an expansion of the concept of major urban areas to encompass export-enclaves as well as metropolitan areas and major industrial centers. The rationale for this expansion is that the particular definition of non-farm employment developed here is intended to identify that non-agricultural employment which is, directly or indirectly, a creature of the traditional farm sector which is undergoing modernization. Non-agricultural employment outside major urban areas which is based on either plantation agriculture or extractive industries must therefore be excluded.

This concept of non-farm employment is not general since it requires a considerable discreteness between agricultural and non-agricultural areas. It is only applicable to that class of LDC in which this condition is fulfilled. The principal grey area lies between major urban areas and what will be defined below as regional urban centers. Many of the latter can be expected over time to grow out of being a regional agricultural market center and to increasingly take on the characteristics of a major urban area. If it is not possible to make a reasonably clear distinction between these two strata of population centers, a more restrictive definition of non-farm employment than is developed here would have to be used.

It is perhaps also worth noting that the present definition cannot be used to trace the total impact of agricultural modernization on non-agricultural labor absorption. The impact of agricultural modernization on labor absorption

in major urban areas is assumed to be distinct from that on non-farm labor absorption.

Geographic and Functional Stratification

A single operational criterion is used to derive total non-farm employment and to stratify population centers, namely, the geographic scope of the market each center or area serves with its non-agricultural goods and services. So far as agricultural market centers are concerned, it is assumed that this criterion produces a functional stratification as well with each stratum being able to provide more specialized, technically-sophisticated, and capital-intensive products and services than the one below. This assumption does not exclude the possibility that the characteristic functions of lower strata may also be being performed in a given center. Indeed this is likely.

This market criterion is used to disaggregate labor force data by population center strata. The rural-urban terminology is necessarily retained but, as a result of the definition given to national urban areas, the lower strata of population centers are identified with the strata of agricultural market centers. Regional agricultural market centers correspond to regional urban centers and local agricultural market centers correspond to local urban centers and "rural towns and households". In the definitions that follow "serving" a given market means providing that market with non-agricultural goods or services produced in the center or area in question.[1] In the case of goods originating at strata above the one in question, the product provided is of course the marketing service. "Urban" refers to population centers of 2,500 or more:

Non-Farm Employment: "all non-agricultural employment outside national urban areas".
National Urban Areas: "urban areas which importantly serve the national or international market or which have a population greater than 100,000".
Regional Urban Centers: "urban centers primarily serving a regional area which includes local urban centers and rural towns".
Local Urban Centers: "urban centers primarily serving a local market, which includes rural towns".
Rural Towns: "non-agricultural population centers of less than 2,500".
When non-urban employment is reported simply under the category "rural", it can be attributed to either "rural towns" or "rural households" according to the type of industry involved.

These definitions are not in themselves sufficient to classify population centers unambiguously. Knowledge of the economic geography of a country and judgements as to the likely pattern of future urban growth must be combined with them. As has been noted, in some situations it may be found such a stratification cannot be made meaningfully. It should be noted that "regional" as used here refers to a smaller area than is often the case when national economic data is disaggregated "regionally".

For illustrative purposes the above definitions have been applied to 1968 labor force survey data for the Philippines as shown in Table 1. The October data series used is relatively free of seasonal distortion so the structure of employment reflected is believed to be reasonably accurate, by industry as well as by population center strata.

The results are quite striking, with non-farm employment accounting for fully 75 % of total non-agricultural employment nationally and with rural towns and urban centers sharing about equally in the non-farm total. Granting the possibility of relatively wide margins of error in the stratification scheme because of the difficulty of distinguishing urban and rural for census purposes, it is nevertheless apparent that for the Philippines the middle ground between

Table 1

NON-AGRICULTURAL EMPLOYMENT IN THE PHILIPPINES

Disaggregated by Population Center Strata

(October, 1968 - 000 Omitted)

Major Industry Group	Non-Farm Employment (Gross)											
	Rural Towns and Households		Local Urban Centers		Regional Urban Centers		TOTAL NON-FARM		National Urban Areas		TOTALS	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Manufacturing	630	51	298	24	33	3	(961)	78	273	22	1,234	10
Commerce	508	45	296	26	55	5	(859)	76	271	24	1,130	10
Transport, Storage, Communications	127	35	105	29	18	5	(250)	69	113	31	363	10
Construction	178	52	87	26	14	4	(279)	82	63	18	342	10
Services: Business, Gov't, Community	262	29	352	39	58	6	(672)	74	231	26	903	10
Personal Services: Domestic Only	135	27	192	38	26	5	(353)	70	150	30	503	10
Personal Services: Non-Domestic	90	36	83	33	12	5	(185)	74	67	26	252	10
Utilities: Electric, Gas, Heat, Water	12	33	11	33	1	1	(24)	67	12	33	36	10
Industry Not Rpt'd	15	45	3	10	3	9	(21)	64	12	36	33	10
TOTALS	1,957	40	1,427	30	220	5	(3,604)	75	1,192	25	4,796	10

the farm and national urban areas is very large so far as employment is concerned. It could hold the key to labor absorption and migration problems in the decade immediately ahead. In addition, the importance of rural non-farm employment suggests that trends in this category are of fundamental importance to any calculations on urban labor absorption.

Qualitative Considerations

In this section two variants on the concept of non-farm employment will be defined and compared with the basic concept defined above. It will already have been noted that in Table I the non-farm employment data is characterized as "gross". This is simply employment as estimated from sample surveys. It is subject to the usual problems of statistical samples and seasonality common to labor force estimates.

The first variant, to be referred to simply as "adjusted non-farm employment", excludes part-time non-farm employment in rural towns and households from total non-farm employment. There are several reasons for distinguishing part-time and full-time non-farm employment in rural areas in particular. Such part-time employment is assumed to be significantly correlated with seasonal off-farm employment by agricultural workers. It is also assumed to be more casual, less skilled, and less specialized than full-time non-farm employment. Lastly, the distinction makes possible the exclusion of the statistically most difficult and highly variable category of non-agricultural employment, that of part-time female employment in manufacturing and commerce.[4] By adjusting non-farm employment to exclude part-time workers

in rural areas, a possible area of overlap with agricultural employment can be eliminated and the data on labor absorption in rural towns and households can be made less variable and more of a known quantity.

The second variant defines a "modern non-farm employment" category. It counts only wage-and-salary workers and in addition excludes those in personal services employment. The underlying concept is that there is a rough correspondence between wage-and-salary employment and what is sometimes thought of as modern employment, since the former in general reflects economic activity in more or less fixed establishments with relatively more formal organization and more capital equipment than is the case in traditional economic activity. It has been shown in the case of the Philippines that a "modern labor force" similarly defined and derived from household survey data corresponds closely to the labor force enumerated in the economic census of establishments.[5] Thus, the concept affords a relatively accessible and meaningful disaggregation of non-agricultural employment which can in addition be used to produce annual time-series for economic census-type employment categories.

The "modern non-farm employment" variant is useful in suggesting the geographic distribution of what may be relatively high quality employment and also in indicating what is being overlooked when analysis is restricted to such employment categories. The comparison of this category with the other two non-farm categories is provided in Table 2, below, again using 1968 Philippine data. It should be noted that the estimates of part-time non-farm employment used in deriving the "adjusted" category are only approximate (see Appendix 2).

Table 2

CATEGORIES OF NON-AGRICULTURAL EMPLOYMENT

(The Philippines, October, 1968 - 000 Omitted)

Category	Non-Farm Employment: Rural Towns and Households		Local Urban Centers		Regional Urban Centers		TOTAL NON-FARM		National Urban Areas		TOTALS	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Gross	1,957	40	1,427	30	220	5	(3,604)	75	1,192	25	4,796	100
Adjusted	1,473	34	1,427	33	220	5	(3,122)	72	1,192	28	4,312	100
"Modern"	883	35	794	32	120	5	(1,797)	72	714	28	2,511	100

Source: Appendices 1,2,and 3, respectively, for gross, adjusted, and "modern".

It is apparent that qualifying Philippine non-agricultural employment in these two ways does not essentially change its distribution among population center strata. The exclusion of rural part-time employment from total non-agricultural employment reduces the rural share somewhat, but this strata is still left with over one-third of the national total. Perhaps more striking, excluding all but wage-and-salary employment does not significantly shift the distribution "up-hill" to larger population centers. Rural towns and local urban centers retain a very considerable share of "modern" non-agricultural employment and as a consequence non-farm employment does as well.

When only "modern" non-agricultural employment is considered, over one-half the rural non-farm employment is excluded. This excluded amount presumably is a prime candidate to be categorized as traditional and, therefore, of low

productivity. Yet fifty-five percent of it is full-time employment, the quality of which cannot be so easily judged. This point is discussed further in Section IV.

Further Disaggregation at the Local Level

Vertical stratification of population centers tends to conceal the strong horizontal element in the organization of economic activity in agricultural regions. This characteristic is reflected in the concept of the "local agricultural market town". Such towns are spread evenly across the landscape performing the function of a local economic center, a function not limited to marketing activities. The scale of this function is typically approximately the same everywhere in a region, being determined by geography and prevailing modes of transportation. The size of the towns is not the same, however, usually because those on main transportation arteries have taken on additional functions.

Thus, while vertical stratification of agricultural market centers as between rural towns and local urban centers accurately reflects a functional stratification of important ancillary services, it conceals the fact both perform an immediately local function. For some purposes the vertical stratification is the more relevant, as for example in the case of studies of labor absorption by industry. For others, however, such as tracing changes in part-time employment both on and off the farm, a horizontal categorization, embracing employment in rural towns and local urban centers alike, is required.

Where a horizontal categorization is wanted, the division of employment

[illegible] to analysis. By studying the structure of employment in rural [illegible] it is possible to identify parameters associated with the local-agricultural-market-town function which may make it possible to discern such employment within the employment structure of larger towns.

The ability to meaningfully disaggregate data on non-farm employment in and around rural towns derives from the relative simplicity of the structure of economic activity there. It is possible to roughly associate particular economic activities with data categories in a way not possible with aggregate data, especially when the data is available by class of worker as well as by sex.

Where such a breakdown is available, it is possible within manufacturing to distinguish "handicraft" employment from "craft" employment and from workers in food processing. Within commerce the distinction between "wage-and-salary workers plus self-employed males" and "self-employed females plus unpaid family workers" is a useful one. In construction and transport, where most employment is male, the distinction between wage-and-salary workers and the self-employed is sometimes interesting.

Where rural data on part-time employment is tabulated by class of worker, insights can be gained into the quality of each of these categories of employment and possibly into the interface between farm and town in the labor market. This latter possibility is particularly intriguing. It is probably beyond the state of the art of labor force surveys for most countries, however, since it requires that data on part-time non-farm employment distinguish between agricultural and non-farm workers.

Table 3 illustrates these possibilities for disaggregation. The ability to isolate self-employed females and unpaid family workers, with their characteristic high rates of part-time employment, makes it possible to distinguish and roughly characterize the more stable employment categories.

Table 3

DISAGGREGATION OF NON-FARM EMPLOYMENT AT THE LOCAL LEVEL
(Philippine Rural Towns and Households - October, 1968)

Type of Employment	Percent Part-Time	(000 Omitted) Part-Time		Full-Time		Total
		No.	%	No.	%	No.
Manufacturing						
"Craft" and "Processing" [a]	24	82	15	260	18	342
"Handicraft" [b]	59	170	32	118	8	288
Commerce						
"Wage/salary workers plus self-employed males"	23	45	8	149	11	194
"Self-employed females plus unpaid family workers"	43	134	25	180	13	314
Transport, Storage, Communications						
Wage/salary workers	11	10)	3	83)	8	93
Self-employed workers	21	7)		27)		34
Construction						
Wage/salary workers	11	18)	4	146)	11	164
Self-employed workers	14	2)		12)		14
Services: Other Than Personal	7	17	3	245	17	262
Services: Personal Incl. Domestic	20	46	9	179	13	225
Other: (Utilities plus Industry Not Reported)	18	5	1	22	1	27
Totals	27	536	100	1,421	100	1,957

Source: Appendix 2, Updated by BCS - provided tabulations of part-time workerd in rural areas.

[a] "Craft" and "processing" are comprised of all male workers in manufacturing plus female wag/salary workers.

[b] "Handicraft" is comprised of all female self-employed and unpaid family workers.

III. APPLICATION TO LABOR ABSORPTION ANALYSIS

Trends in Aggregate Non-Farm Labor Absorption

The basic correlation which the concept of non-farm employment is designed to serve is between labor absorption in non-farm employment and the process of agricultural modernization, with output per agricultural worker being used as a proxy for the latter. For some policy purposes the simple correlation of aggregate data for these variables would by itself be of considerable value. In empirical work it may prove necessary to restrict the scope of non-farm employment to that in rural areas and local urban centers in order to obtain a statistically satisfactory correlation. Trends in labor absorption in regional urban centers would still be of interest, however, especially for comparison with comparable trends in the population center strata above and below them.[6]

Considerable additional insight would be afforded if the basic correlation of non-farm labor absorption with agricultural productivity can be disaggregated into direct and indirect effects. These will be referred to, respectively, as the output effect and the income effect of agricultural modernization on non-farm employment. The former corresponds to changes in employment in agro-business. The latter is the residual and is construed to reflect the impact on non-farm employment of changes in total consumption which result from changes in farm income. Incremental income arising from increased agricultural productivity will be allocated -- for both consumption and productive purposes -- among imports from national urban areas (and abroad), purchases from the farm sector, and purchases of goods and services produced by non-farm

workers. Changes in non-farm employment resulting from the income effect will reflect the increase in consumption purchases of the latter category of commodities. This increase will itself reflect the multiplier effect on on community income of increased farm household purchases of goods and services produced by non-farm workers, whether for production or consumption purposes.

To the extent agricultural modernization results in lower food prices, labor absorption in non-farm employment will tend to increase from two additional effects. As real income is effectively increased by a less costly food budget, demand for non-farm products can increase, thus strengthening the income effect. The effective increase in real income will also tend to hold wages down and thus encourage the use of labor.[7] In non-farm employment, which is already relatively labor-intensive, this effect will likely be felt negatively, retarding substitution of capital for labor rather than increasing labor use.

In practice the output and income effects probably cannot be discerned within aggregate data. At the micro level, however, the distinction is not as elusive as it first appears. The output effect deals in large measure with the handling of sheer tonnages of inputs and outputs plus the sales and servicing of productive machinery, all of which are relatively discrete and visible activities. For policy purposes it may be sufficient to have some idea of the size of the expected output effect plus a coefficient to apply to it to estimate the income effect. Micro studies could possibly provide such parameters.

Trends in Geographic Concentration of Labor Absorption

One suspects that in many countries the simple disaggregation of non-farm employment by population center strata might be of considerable value. To know

the relative weight of these strata and the historical rate of labor absorption in each would be of considerable importance to policy makers concerned about unemployment, urbanization and migration, and public investment budgets.

Of greater analytical interest are changes in the geographic pattern of non-farm labor absorption. Much theory seems to imply that the small town must wither as specialization in production produces a gravitation of employment into larger establishments, presumably in larger towns. But the opposite view could plausibly be hypothesized, at least for the near term. That is, that an increase in farm income will produce an increased demand for locally produced goods and services, such that outmigration will be slowed to a rate below the rate of labor force increase by the combined effect of higher incomes and greater employment opportunities. Alternatively, granting the existence of both influences, one might hypothesize that balanced growth as between strata was equally plausible.

The analytical challenge is to identify accurately from historical data the parameters which will govern labor absorption at each strata in the 1970s and 1980s. This essentially involves discerning trend changes that may have occurred in the middle and late 1960s as a consequence of agricultural modernization having been accelerated by the seed-fertilizer revolution in cereals.

Trends in Geographic Concentration by Industry

Once non-farm employment has been defined and disaggregated, the means are available to trace the pace by industry at which employment shifts to larger population centers. Supplemented by economic census data which distinguishes between large and small establishments, study of such trends may yield insights into specialization, diffusion of technique, and intensity of labor use.

IV. SOME PRACTICAL AND THEORETICAL IMPLICATIONS

Given that the Philippines is an agrarian country, the extent and distribution of non-farm employment revealed by the data does not seem surprising. What does seem interesting are the possibilities that arise from treating non-farm employment as a discrete entity. Its characteristics seem to come much more clearly into view, especially since we are accustomed to their being out of focus in the rural-urban framework. In addition, it becomes clear that the economic activity which non-farm employment reflects constitutes a distinct sector which can provide the basis for a three-sector framework for some analytical purposes. Although it is beyond the scope of this paper to formally specify this sector, it will nevertheless be briefly introduced since the subsequent discussion of non-farm employment is at times facilitated by being able to consider it in a sectoral context.

Non-Farm Employment As A Sector

The sector which corresponds to non-farm employment encompasses all non-agricultural economic activity outside national urban areas. Thus it may be thought of as a geographically-defined sector.[8] For lack of any term, or combination of terms, which adequately reflects the generality of the economic activity in it it will be referred to as "the X-sector".[9] It is principally characterized by (i) production to meet local rather than national demands, (ii) light manufacturing and an absence of production of any but simple producer

goods, (iii) small-unit production, (iv) being the locus of agricultural service and processing industries, and (v) having at least three functionally-differentiated strata of production.

This "X-sector" is closely analagous to the "non-agricultural labor-intensive sector" which was recently defined by Oshima.[10] The two sectors essentially coincide if small-unit production in major urban areas is excluded from the "non-agricultural labor-intensive sector". Dr. Oshima reviews the available evidence on small-unit production in Asia and characterizes the non-agricultural labor-intensive sector on the basis of it. Many of these characterizations apply to the X-sector so his principal findings and conclusions will be briefly reviewed.

Dr. Oshima finds there is a close complementarity of demands between the agriculture and the non-agricultural labor-intensive sector. There is suggestive evidence in the experience of Japan, Taiwan, Korea and Thailand that increased agricultural incomes deriving from productivity increases are correlated with low rates of unemployment in the non-agricultural labor-intensive sector. The sector effectively meets a significant proportion of the demand for necessities, using resources which are not among those considered scarce so far as the development process is concerned and which may not be employable elsewhere. Local materials, labor and capital suffice to a large extent whereas to substitute goods produced in the capital-intensive sector would draw on scarcer resources. The capital-labor ratio is appropriately high. What capital fomation does occur does not in the main compete in the tight national capital market but rather is generated from local resources. Similarly,

relatively low-quality human resources which might not be usable in the capital-intensive sector are effectively utilized here. The conclusion is drawn that by facilitating the growth and prosperity of the non-agricultural labor-intensive sector, little output growth is likely to be sacrificed and considerable labor absorption may be realized.

The correspondence between small-unit production so described and the economic activities of agricultural market centers would appear to be very close and to provide a good sense of the economic attributes of labor employed in non-farm activities. The problems involved in analyzing and forecasting trends in the absorption of labor by these activities will now be considered.

Measuring the Quality of Non-Farm Employment

The index number problem in comparing values between urban and rural areas cripples the conventional partial productivity measure of value added per worker so far as its application to non-farm employment is concerned. Both wages and prices of wage goods are characteristically substantially lower than in major urban centers in all three strata of the X-sector. This is especially true in rural areas and local urban centers where the bulk of the non-farm employment is concentrated. One of the more important advantages of treating non-farm employment as a sector is that it emphasizes that it is no longer valid to assume away the index number problem when measuring the value of production which is both produced and consumed outside national urban areas.

When measuring the productivity of non-farm employment, it is necessary to use a "real productivity" concept. Before dividing by the units of labor

employed, the value of output must be inflated appropriately to make it more closely equatable to the real value of similar production in national urban areas. For practical purposes this comes down to inflating the measured partial productivity of labor -- which is now seen as a "nominal productivity" -- by some appropriately constructed index of relative consumer prices at the national and local levels. Ideally such indexes should be constructed and applied at each of the strata of the X-sector.

Trend of Demand for X-Sector Output

Future demand for non-farm labor will be jointly determined by the level of demand for its products and the intensity of labor use in their production. Given that the acceleration of agricultural modernization may well characteristically bring about a rise in the level of permanent income of farm and non-farm households and given also that tastes and skills are being affected by greatly improved communications, it is an open question what changes in these income levels will have on demand for X-sector output.

There is a tendency to characterize the products of the X-sector as "traditional" and as having a low-income elasticity of demand, reflecting the predominance of necessities among them. Another tendency is to view them as being inferior goods which will increasingly be supplanted by factory-made substitutes as incomes rise. While there is historical evidence to support both views, it is doubtful either is now generally valid.[11] For the 1970s a more particular analysis is needed which will distinguish classes of commodities and leave room for the possibility that agricultural modernization

may produce a strong and innovation-encouraging set of demands on some parts of the X-sector.

On the basis of the available evidence on behavior at strata below regional urban centers, three particular possibilities would seem to merit investigation. The first is that for certain necessities a traditionally low income elasticity of demand may be transformed into a high income elasticity if the increase in income is perceived as raising the household to a higher permanent income. Housing improvement may provide an example.[12]

The second is that with a perceived higher permanent income, even among low-income groups, the locally-produced commodities purchased may include increasing amounts of non-essentials, especially services. Use of public transport in lieu of walking comes readily to mind and there are other local convenience services which may prove to have an increasing rather than decreasing elasticity of demand. These could include such manufactures as the final processing of foods which was traditionally done in the home, such as baking and slaughtering.

The third possibility is that some locally-produced goods which are perceived as inferior to factory-made substitutes may nevertheless enjoy a positive income elasticity of demand for a considerable period of time after agricultural incomes begin to rise. Much depends upon the base income level from which the process starts and the rate of diffusion of higher incomes throughout the community. Capital assets are one class of goods that might be affected in this manner, involving simple, locally-produced utilitarian items which are functionally equivalent but aesthetically inferior to factory-

made substitutes, e.g. furniture and kitchenware.[13] If incomes are rising from a subsistence base and the household stock of assets is close to nil, the low-priced locally-made goods will probably not be inferior goods for the household until a basic stock has been acquired. Since the diffusion of higher incomes can be expected to affect a progressively lower-income group of households, the weight of demands for sometime will come from households seeking to establish their initial stock of assets. For some goods it may take some years before the community income level has reached the point where the locally-made item becomes an inferior good.[14] It is also notable that in the intervening period the local producer may have up-graded his product line and have been able to capture part of the increasing demand for higher quality products.

Dynamics of X-Sector Production

Given an assumption about the trend of demand for X-sector output, the capacity of non-farm employment to absorb labor will be determined, ceteris paribus, by the labor intensity of production. It seems likely that in the 1970s changes in labor intensity in X-sector production will not be solely, or perhaps even primarily, a function of increased capital intensity but will also be determined importantly by improvement in the quality of labor and in its management. There seems little reason to assume that production technology will be static at any of the three strata of the X-sector.[15] Thus, analysis of the trend of labor absorption in non-farm employment should explicitly take account of the dynamics of technical change in the X-sector through detailed consideration of factors affecting labor productivity.

There are at least three sources of increases in labor productivity which should be taken into consideration. First, is the diffusion of dis-embodied technical change. Improvements in quality control, style, and organization can occur simply as a result of increased familiarity with the demands of the market. Increases in labor productivity can occur from this source at any strata of the X-sector.

Second, is the diffusion of embodied technical change. The incremental steps can be very small in the adoption of embodied technology, as with the use of improved -- and especially powered -- hand tools. Thus, in general embodied technical change is not beyond the ability or means of even very small producers to adopt. Electricity is possibly a critical constraint in the diffusion of embodied technical change, however. It may therefore provide an important parameter in labor absorption analysis. In some areas and for some periods it may be found that the "electric power boundary" coincides with one of the production strata of the X-sector.

The third source of increased labor productivity is the level of general education. In the X-sector it seems likely that it is an especially important ingredient in the modernization of the skills of both management and labor. Given the widespread broadening and deepening of educational attainment in the past two decades in Asia, it seems doubtful there are many areas remaining where "traditional", with its implication of static, may be indescriminately applied as a description of local production techniques.

Although the impact that diffusion of technical change and education will have on labor absorption in the several strata of the X-sector is not obvious, several particular possibilities seem worth suggesting. In some classes of

goods improvement of local production technique may proceed apace with increasing demand for higher quality goods so that there may be no loss of employment as demand shifts away from lower quality goods. It seems likely production at all strata will shift progressively away from one-man shops to larger units requiring more formal organization. This trend would not necessarily imply a loss of employment in the lower strata either, however, as there seems nothing inherently unviable about quite small production units -- say, from five to ten workers -- in many industries in LDCs.[16] Lastly, it seems likely that lack of electric power by itself may be sufficient to assure the relative retardation of growth of production and employment in given towns or strata of the X-sector.

The Implications of Non-Farm Employment for Theory

To the extent that non-farm employment in Asia is as extensive and distinct as this Note and the Philippines data suggest, the two-sector model would appear to be a faulty framework through which to view much economic activity in the 1970s. Historical perspective may help suggest the point at which a three-sector framework came to be needed.

Broadly speaking, economic conditions in Asia in the 1950s were sufficiently similar to the "enclave" or "growth-points" description of less developed economies to make the two-sector framework a reasonable first approximation. The emphasis on economic diversification through establishing concentrations of modern industry fit well the capital-centered focus of two-sector models. In the 1960s with the more extensive stirrings of modern economic activity in lesser cities and towns,[17] the two-sector model became less appropriate but an

alternative was not obvious. By the 1970s, however, with agricultural modernization accelerating rapidly and providing a sharp impulse to the already-modernizing X-sector, it has become clear there is something distinct between the farm and the large city which is difficult to take into account in two-sector models. Hence the need for a three-sector framework for the 1970s.

A problem in treating non-farm employment as a sector is the fact this sector may be rather short-lived. Many regional urban centers can be expected to grow fairly quickly to the stature of national urban areas and the lower pppulation center strata will increasingly come to participate directly in national markets. On the other hand, just as the capital-centered model was valuable because it conceptually paralleled the policy interests of the 1950s, a three-sector model specified in terms of employment and geography would conceptually paralled the principal policy concerns of the 1970s.[18] This fact of timeliness is important in arguing for delineating an X-sector, despite the fact that it may be a transitional concept. At least for the 1970s, it is difficult to see how problems of labor absorption in non-agricultural employment can be easily framed and assessed except through a three-sector model.

V. CONCLUSIONS AND RECOMMENDATIONS

The above discussion suggests that non-farm employment is extensive but is being seriously misperceived when viewed through a rural-urban framework, especially so to the extent it is characterized simply as traditional. Historical evidence suggests an important part of it will survive for sometime;

there is considerable "modern" employment within it; and there is a presumption its productivity is higher than generally believed and rising. In addition, it appears capable of playing a key role in the development process in coming decades as an important and efficient user of low-skill labor.

The operational value of the concept of non-farm employment in any given country situation will lie in its ability to yield a meaningful disaggregation of non-agricultural employment for particular policy or research purposes. A certain flexibility will be required in applying the market criterion suggested for stratifying population centers if it is to meaningfully fit the available data and particular characteristics of any given economy. It is perhaps worth re-iterating in this connection that the focus of the concept of non-farm employment is not on the countryside in general. It is on population centers which can be reasonably clearly identified as agricultural market centers so that their employment may be treated as in some sense the complement to on-farm employment. If a market center has ceased to be primarily the creature of its agricultural hinterland, by virtue of some non-agricultural speciality having become the mainstay of its economy, its employment falls outside the non-farm category. The fact that minor specialties are common in smaller population centers emphasizes that a wide area is left open to judgement in meaningfully classifying population centers for analytical purposes.

In country situations where delineating non-farm employment seems feasible, three lines of action would appear to be indicated. First would be to investigate the extent to which existing information is able to support the concept, indicating the structure and past trends of non-farm employment and the modifications

in data series required to make it an analytically useful concept in the future. Second would be to sponser further investigation of its characteristics. Construction of cost of living and wage indexes for the three strata of the X-sector should be undertaken early in order to establish the order of magnitude of the index number problem as regards labor productivity. Micro studies of the characteristics of demand for X-sector output and of trends in technical change in the sector might also be undertaken. Third would be to review existing public policies as they may affect the absorption of labor in non-farm employment and especially to check the consistency of such policies with other stated economic and social goals such as those relating to migration, regional development, and the degree of population concentration envisioned in long-range planning.

FOOTNOTES

[1]Employment in the intermediate processing of that portion of the agricultural product to be exported from the region or locale properly should be ignored in this classification process.

[2]The limit of 100,000 which this definition in effect imposes on the size of regional urban centers was arbitrarily selected. It appears empirically to constitute a reasonable dividing line between agricultural and industrial urban centers. An urban center may be considered to "importantly" serve the national market if it serves a significant part of it, i.e. a market which embraces a number of regional markets.

[3]See footnote in Appendix 1.

[4]The potential for instability in part-time female employment data may be illustrated by the fact that in 1960 the Philippine census reported roughly one-third less women in the labor force than did the labor force surveys taken before and after the census was taken. Although there were seasonal factors tending to reduce part-time female employment at the time of the census, the magnitude of the variation was adjudged by the Director of the Bureau of Census and Statistics to be due importantly to there being "a bias toward women being accepted as dependents" on the part of the census enumerators. The latter used the same concepts and definitions as the labor force survey interviewers. Cf.Dr. Tito Mijares quoted in M.L. Gupta, "Patterns of Economic Activity in the Philippines and Some Methodological Issues Involved", International Labour Review, 101 (No. 4, April 1970), pp 380-381.

[5]To obtain this result it was necessary to also exclude (i) all services employment, (ii) employment in "light" construction, and (iii) the one-third of the commerce employment accounted for by working owners and unpaid family workers in "sari-sari" stores, a small neighborhood grocery store or stall. On the basis of this correspondence between wage-and-salary employment and the economic census results, an annual time series for the "modern labor force" was constructed. It indicated a rate of labor absorption in such employment in the 1960s higher than that which

would have been consistent with various other estimates of the GNP growth rate during that period. The investigators interpret this result as suggesting a downward bias in GNP estimates and a useful role for household survey data in making possible construction of relatively sensitive indexes of trends in labor absorption. See H.A. Averch, F.H. Denton, and J.E. Koehler, A Crisis of Ambiguity: Political and Economic Development In the Philippines (Santa Monica: The RAND Corporation, January 1970) pp. 138-145.

[6]Indeed, the concept of non-farm employment as defined in this Note implies that in general regional urban centers will be better understood if they are considered to stand outside the sphere of the national urban areas and within the agriculturally-oriented sector, whether or not it proves possible to statistically correlate changes in their employment with agricultural modernization.

[7]The author is indebted to Dr. Randolph Barker for suggesting the need to consider the impact of lower food prices on labor absorption in non-farm employment.

[8]In contrast to other sectoral distinctions that have been defined in terms of the scale of non-agricultural enterprise or of its factor intensity.

[9]The semantic problem is of more than passing interest for it may well be a root cause of the poor understanding that exists of the distinctive and important characteristics of this sector. The source of the problem is easily seen. The geographic spectrum of economic activity in an LDC runs from the farm through rural towns and local and regional urban centers to large urban and industrial centers and finally to the national metropolitan area. Economists, politicians and others have all been guilty of conceptually sub-dividing the spectrum into just two parts -- urban and rural -- and then focusing on the extremities within them, namely, the farm and the national metropolitan center. The result is that both rural and urban, traditional and modern have lost their generality of meaning and been polarized and narrowed. As though the spectrum were photographed in two segments with the camera focused each time on the extremity, the middle ground is by definition out of focus as well as sub-divided. Thus, we are forced to use negatively-defined or phantom

terms like "non-farm" employment and "X-sector" which, though imprecise, are at least free of coloration and can be given a particular definition. Hopefully more meaningful terminology will soon evolve.

[10]Harry T. Oshima, "Labor-Force 'Explosion' and the Labor-Intensive Sector in Asian Growth", Economic Development and Cultural Change (January, 1971), P. 164.

[11]For example, Ohkawa and Rosovsky characterize the traditional products still being produced in Japan in 1955 by small industry as being sold primarily to low-income groups and having low income-elasticities of demand. (Cf. Kazushi Ohkawa and Henry Rosovsky, "The Indigenous Component in the Modern Japanese Economy", Economic Development and Cultural Change (April, 1961), pp. 482-83, 492-496.) The cases of metal sheeting early replacing thatched roofing and factory textiles being substituted by home-made cloth are well-known examples of inferior goods whose characteristics have been formalized in the Z-goods model. (Cf. S. Hymer and S. Resnick, "A Model of an Agrarian Economy with Non-Agricultural Activities", American Economic Review LIX (September, 1969), pp. 493-507.) Yet Oshima in "Labor-Force 'Explosion' and the Labor-Intensive Sector in Asian Growth"(p.179) is able to note that "the persistence of Asian tastes and preference for traditional foods, clothing, house goods, personal services, etc./which/ cannot be produced capital-intensively... may be the most important reason /why/ after a century of rapid growth in Japan, 28 percent of employment in manufacturing is still in units employing fewer than ten persons..."

[12]For example, in a recent unpublished study (Robert E. Huke, "A Study of Change in a Central Luzon Village, 1965 to 1969"(Los Banos: International Rice Research Institute, 1970 mimeo)) one of the important observations was that a large portion of the profits from HYV rice appeared to have been invested in home improvement. During 1969 and the first half of 1970, 30 percent of all homes in the village were completely rebuilt using sawn lumber and cement blocks in place of rough lumber and bamboo.

[13]In this context convenience is subsumed under aesthetics although there are obvious grounds for arguing that a more convenient good is not functionally equivalent to a less convenient one.

[14]The extensiveness of low-income households, even in economies at relatively advanced stages of development, could be a sufficient reason to explain the persistence of demand for traditional goods and of employment in their production. This possibility would seem to warrant equal weight with that cited in footnote 11, the persistence of tastes and preferences for traditional items.

[15]Traditional production tends to be thought of as static with factor proportions fixed and few scale economies possible. To the extent X-sector output has been stereotyped as traditional, a conscious effort may be required to break this habit of thought and to see X-sector technology as dynamic.

[16]Such units do not typically require the support of large-town infrastructure and so can continue to operate in a dispersed pattern for the foreseeable future. Small unit production is attracting renewed interest for its persistence and importance as an employer. For example the Report of the 1970 ILO Mission to Columbia, Towards Full-Employment (Geneva: ILO, 1970) places considerable emphasis on the role of local urban centers as absorbers of labor and anticipates that, nation-wide, small unit production will account for one-half the projected growth of employment in manufacturing in the next 15 years. Similarly, Dr. Oshima, emphasizing that "many of the small industries are here to stay for at least another generation", suggests the desirability of aiding their modernization through specialized technical institutes capable of adapting advanced technology to the needs of small-unit production in Asia. Cf. Oshima, "Labor-Force 'Explosion' and the Labor-Intensive Sector in Asian Growth", p. 179.

[17]Evidence of such extensive stirrings in the 1960s is available for the Philippines. Averch, Denton, and Koehler in A Crisis of Ambiguity were able to show changes in the geographic distribution of their "modern labor force" in the Philippines over roughly the decades of the 1950s and 1960s. In the 1950s labor absorption in the "modern labor force" was at a rate below the rate of increase in the working age population virtually everywhere except in Greater Manila. Between 1960 and 1968 three-quarters of the provinces showed increases in such employment at a rate above that of the working age population and in one-third of them such employment had grown faster than in Greater Manila.

[18]It seems likely the crucial policy concerns of the 1970s for most Asian nations will be those long-range problems for which solutions are not yet in sight, among which unemployment, and migration will be prominent.

Table A-1

NON-AGRICULTURAL EMPLOYMENT IN THE PHILIPPINES*

Disaggregated by Population Center Strata

(October, 1968 - 000 Omitted)

Major Industry Group	Sex	Non-Farm Employment (Gross): Rural Towns and Households[a] No.	%	Local Urban Centers[d] No.	%	Regional Urban Centers[c] No.	%	TOTAL NON-FARM No.	%	National Urban Areas[b] No.	%	TOTALS[a] No.	%
Manufacturing		630	51	298	24	33	3	961	78	273	22	1,234	100
	M	252	39	(218	34)			470	73	174	27	644	100
	F	378	64	(113	19)			491	83	99	17	590	100
Commerce		508	45	296	26	55	5	859	76	271	24	1,130	100
	M	152	34	(166	37)			318	71	127	29	445	100
	F	356	52	(185	27)			541	79	144	21	685	100
Transport, Storage, Communications		127	35	105	29	18	5	250	69	113	31	363	100
	M	123	35	(116	34)			239	69	106	31	345	100
	F	4	22	(7	39)			11	61	7	39	18	100
Construction		178	52	87	26	14	4	279	82	63	18	342	100
	M	177	52	(101	30)			278	82	60	18	338	100
	F	1	25	-	-			1	25	3	75	4	100
Services: Business, Gov't, Community		262	29	352	39	58	6	672	74	231	26	903	100
	M	160	29	(243	45)			403	74	138	26	541	100
	F	102	28	(167	46)			269	74	93	26	362	100
Personal Services: Domestic Only		135	27	192	38	26	5	353	70	150	30	503	100
	M	30	40	(30	39)			60	79	16	21	76	100
	F	105	25	(188	44)			293	69	134	31	427	100
Personal Services: Non-Domestic		90	36	83	33	12	5	185	74	67	26	252	100
	M	33	30	(45	42)			78	72	31	28	109	100
	F	57	40	(50	35)			107	75	36	25	143	100
Utilities: Electric, Gas, Heat, Water		12	33	11	33	1	1	24	67	12	33	36	100
	M	12	35	(10	30)			22	65	12	35	34	100
	F	-	-	(2	-)			2	-	-	-	2	100
Industry Not Rptd		15	45	3	10	3	9	21	64	12	36	33	100
	M	8	44	(3	17)			11	61	7	39	18	100
	F	7	47	(3	20)			10	67	5	33	15	100
TOTALS		1,957	40	1,427	30	220	5	3,604	75	1,192	25	4,796	100
	M	947	37	(932	37)			1,879	74	671	26	2,550	100
	F	1,010	45	(715	32)			1,725	77	521	23	2,246	100

(Continued)

Source: This table constitutes a disaggregation of October, 1968, labor force survey data as published in "Labor Force - October, 1968", The BCS Survey of Households Bulletin, Series No. 26 (Manila: Bureau of Census and Statistics, 1971), hereafter referred to as "Bulletin".

[a] Bulletin Table 2, "Employed persons by major industry group, by class of worker and sex, urban and rural".

[b] Special BCS tabulations of labor force sample survey estimates, except for Angeles, Olongapo, greater Cavite, and Mandawe for which the structure of employment was derived by applying regional urban center coefficients to population data. These four centers will hereafter be referred to as the "other national urban area (NUA) urban centers".

[c] Derived from a non-random sample of 391 households in the 19 regional urban centers. These were the sample households and data from the labor force survey.

[d] These data are residuals, being the remainder after industry totals for the other three population center strata have been subtracted from national industry totals.

Note; The October labor force survey was selected for use here, rather than the May survey, since it is relatively unaffected by seasonal distortions. October is neither a peak nor a slack month in agriculture in the Philippines tends to reflect relatively accurately the size and structure of the experienced labor force. The October, 1966, labor force survey contained a special set of questions as to the number of weeks worked during the course of the year. One finds in general a variation of 5% or less between the estimated work force in October by industry and sex and the number of people who "worked at any time during the past year", subject to the crucial caveat that workers who were "new" workers but not in the October labor force" were not included in the latter category. This small variation is true for data for rural areas alone as well as for national totals.

Composition of Population Center Strata. National Urban Areas were judged to include greater Manila (Manila proper, all urban centers in the provinces of Rizal and Bulacan, and greater Cavite City), greater Cebu (Cebu City proper plus Mandawe), Iloilo City, Davao City, greater Iligan (Iligan proper plus all urban centers in Lanao del Norte province), and all urban centers in the province of Negros Occidental. The latter were included on the grounds the entire province constitutes an export enclave. Olongapo and Angeles were included on similar grounds. Nineteen towns were included in Regional Urban Centers. They had an average population in 1960 of 32,000, and ranged in size from 20,000 to 60,000. Forty-one towns ranging from 15,000 to 20,000 were identified as candidates for classification as Regional Urban Centers but were finally rejected on the grounds they were functionally only larger Local Urban Centers. Local Urban Centers number approximately 600. There are approximately 640 Rural Towns in the Philippines.

Table A-2

PART-TIME NON-AGRICULTURAL EMPLOYMENT IN PHILIPPINE RURAL TOWNS AND HOUSEHOLDS

(October, 1968 - 000 Omitted)

Major Industry Group	Estimated Per Cent Part-Time a/	TOTAL	Full-Time	Part-Time
Manufacturing	**37**	**630**	**397**	**233**
Male	**15**	**252**	**214**	**38**
Wage/Salary Workers	11	172	153	19
Self-Employed Workers	20	68	54	14
Unpaid Family Workers	40	12	7	5
Female	**52**	**378**	**183**	**195**
Wage/Salary	25	90	68	22
Self-Employed	60	252	101	151
Unpaid Family	60	36	14	22
Commerce	**28**	**508**	**364**	**144**
Male	**14**	**152**	**130**	**22**
Wage/Salary	13	53	46	7
Self-Employed	12	89	78	11
Unpaid Family	45	10	6	4
Female	**34**	**356**	**234**	**122**
Wage/Salary	13	52	45	7
Self-Employed	40	247	148	99
Unpaid Family	30	57	41	16
Transport, Storage, Communications	**15**	**127**	**108**	**19**
Male	**15**	**123**	**105**	**18**
Wage/Salary	10	89	80	9
Self-Employed	25	32	24	8
Unpaid Family	50	2	1	1
Female	**25**	**4**	**3**	**1**
Construction	**15**	**178**	**151**	**27**
Male	**15**	**177**	**150**	**27**
Wage/Salary	14	164	140	24
Self-Employed	23	13	10	3
Unpaid Family	-	-	-	-
Female	-	**1**	**1**	-
Services: Other Than Personal	**8**	**262**	**242**	**20**
Male	**6**	**160**	**150**	**10**
Female	**10**	**102**	**92**	**10**
Personal Services: Domestic Only	**7**	**135**	**126**	**9**
Male	**10**	**30**	**27**	**3**
Female	**6**	**105**	**99**	**6**
Personal Services: Non-Domestic	**28**	**90**	**65**	**25**
Male	**25**	**33**	**25**	**8**
Female	**30**	**57**	**40**	**17**

Major Industry Group	Estimated Per Cent Part-Time	TOTAL	Full-Time	Part-Time
Utilities:Electric,Gas,Heat,Water	8	12	11	1
Industry Not Reported	40	15	9	6
Male	20	8	6	2
Female	60	7	3	4
TOTAL		1,957	1,473	484
Male		947	818	129
Female		1,010	655	355

Source: "Labor Force, October 1968", The BCS Survey of Households Bulletin (Manila: Bureau of Cencus and Statistics, 1971), Series 26, Minus

[a]The percentage of part-time employment in rural areas for each class of worker (by industry and sex) was estimated by the author. Estimates for rural and urban combined shown in Tables 21 and 22 of the Bulletin were adjusted in light of data available for rural areas alone from five particular provinces. The estimates for industries and for sex by industry are therefore derived figures.