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AND NON-FARM ECONOMIC ACTIVITIES

by

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ABSTRACT

The purpose of the paper is to describe non-farm economic activities in two towns of Iloilo in a comparative context. It is argued that with agricultural modernization of a range of non-farm activities are induced and the degree of these activities vary with the level of modernization.

It is found from the data on the two towns that non-farm activities have emerged side-by-side with agricultural modernization and that their relative conditions can also be associated with their relative stage of modernization.

Some development insights and general policy options are advanced as resulting from the study and as directions for further work.

COMPARATIVE AGRICULTURAL MODERNIZATION
AND NON-FARM ECONOMIC ACTIVITIES

Florian A. Alburo*

The purpose of this paper is to describe the patterns of non-farm economic activities in two municipalities in the province of Iloilo. The data come from an establishment survey in five adjoining municipalities in the province conducted in 1977 eliciting information on such variables as employment, capitalization, sales, trade, etc. and tracing these variables 5 years previously. Our immediate and specific purpose in this paper is to understand how non-farm economic activities vary (through specific indicators) with the level of agricultural modernization by a comparative analysis of two municipalities and their associated non-farm sectors.

* Associate Professor, School of Economics, University of the Philippines. This paper is part of the results of a collaborative project of the University of the Philippines College in Iloilo (UPCI) in 1977 on "Inter-Municipality Patterns of Trade and Economic Activities" which received support from the Ford Foundation. Other colleagues who participated in the research were Martin Daguilanea, Jr. (Iloilo Provincial Development Staff), Fely David (Central Philippines University) Edward Masa (UPCI), and Ida Siason (formerly of the National Economic and Development Authority).

This paper is divided into five parts. The first outlines a frame of analysis and provides a broad introduction to the relationships to be studied. Second, some review of the record and experience in the Philippines in the form of other studies will be presented. The third will attempt to document the comparative agricultural modernization level of two towns in Iloilo. A fourth section describes the range of non-farm economic activities in the two towns and their association with agricultural modernization. Finally, some conclusions and insights for policy are drawn.

I. INTRODUCTION AND FRAMEWORK

In an earlier paper, some review was made of the context of intermunicipality patterns of (non-farm) economic activities and their trade.¹ The specific thrust was to highlight the possible importance of intermunicipal relations to the scope and growth of an individual town's economy.

For any given agricultural economy, the expectation of an expanding non-farm sector in the form of consumption and production resulting from sustained real growth has a practical appeal. A rigorous formulation of this pattern can be found in Hymer and

Resnick,² and is implied in much of the literature on the new household economics.³ For example, it is the essential argument of the Hymer and Resnick paper that one can suppose an optimal allocation of household resources according to food, manufactured and Z-goods activities. Z-goods are the non-farm types of goods and services produced which are inferior ones during early stages of growth. As income rise, factory produced goods substitute for the Z-goods in consumption and production. Comparatively speaking therefore agrarian societies which are at higher levels of growth (but below a "market" threshold) experience a wide range of non-farm activities than societies with lower levels.

In addition to documenting the decline of rural industries for three Asian countries along the Hymer and Resnick model, Resnick⁴ points out that institutional and economic conditions contributed to the disappearance of Z-type activities and along with it the good and the bad of an agrarian way of life.

Similarly, the household economics seems to suggest that indeed we can expect that household decisions or household patterns of production, consumption or general resource allocation follow a behavior which can be explained in a framework where non-farm activities form a significant part.⁵ It must be admitted however that the literature is confined to explaining social or demographic behavior.

The implications that can be derived from the preceeding frame of reference are interesting both with respect to some hypotheses that can be explored empirically and some policy insights that can improve our understanding of development alternatives.

First, one can detect a dispersed nature of non-farm activities, geographically and by degree of specialization.

Generally, non-farm enterprises grow from being a part of a self-contained household to serving a growing town center. The degree of employment and functional specialization varies in some manner

directly with income growth and household agglomeration.⁶ Recent

studies in support of the new household economics suggest that

household allocation of time on productive non-farm pursuits is

substantial and in some cases indicate high opportunity costs

involved.

Second, the location of potential non-farm enterprises

conditions its pattern and growth over time. Households nearer

market centers are more sensitive to market alternatives and

inducement into non-farm activities. Households in the mainstre

of social investments such as infrastructure are similarly expos

to non-farm enterprising ventures. Thus, in addition to the

argument that non-farm activities are associated with income and general modernization; they are also influenced by an element of space.

Third, the development of non-farm enterprises is derivable from a consumer preference system. Engel's law and the general behavior of income elasticities indicate a distribution of particular types of non-farm enterprises that evolve with economic growth. Some enterprises at early stages accelerate in magnitude and taper off at later stages to give way to higher forms of non-farm activities. Furthermore, given a modernization state, trading patterns (among agricultural communities at different stages) can also determine non-farm activities.

Fourth, there is a critical contribution that non-farm activities make to particular areas of social or economic concerns. In the case of employment, non-farm enterprises contribute in at least two senses -- in providing employment during slack seasons for landless workers, and in preventing undue migration via inducements for productive opportunities. Also, non-farm activities are channels for further farm processing that increase the likelihood of less expenditure leakages.

An empirical examination of an agrarian economy's transition from farm to non-farm enterprises might give a clue as to the

degree with which these implications are bared out. Tracing over time in this manner however appears to be rather weak. That is, a singular geographical analysis may not yield a sufficient knowledge base. For one, retrospective data might be unreliable. For another, a single experience going through several transition may be tainted with the intervention of unique extraneous or inimical circumstances associated with non-farm growth.

On the other hand, a comparative analysis of economies at different levels of modernization and growth appears more fruitful as it allows a review of how the pattern and pace of their non-farm activities vary. In the same manner, a comparative analysis can point out clues that could lead to predicting differential non-farm activities since in effect a cross-section view is achieved.

II. SOME EMPIRICAL RECORD

Empirical evidence in support of the importance of non-farm activities in the economic growth of an economy stretches from micro studies to aggregate systems of measurement. On the latter international data indicate a declining share of agricultural employment in rural economies despite a relatively constant rural urban employment distribution.⁷ Moreover, it is also found that over time, growth rates of indices of non-farm activities exceed

those of general agricultural activities. Although there are problems regarding different definitions of rural and urban, as long as such definitions are followed consistently, the above trend is evident.⁸

At the micro-level, the study of Child and Kaneda⁹ illustrates an attempt to link non-farm economic activities with an irrigation project as a broad part of the green revolution. It clearly shows an interaction between agriculture and industry in the form of industrial supplies (of tube-well pumps) for agriculture. Although the authors provide a detailed analytical and descriptive process of the interaction their scope of investigation is confined to this narrow range of goods that flow between agriculture and industry. Child and Kaneda however do not offer insight into the impact of agriculture modernization on consumer products.

Gibbs¹⁰ seminal empirical work in the Philippines in this field of investigation deserves mention as a pioneering effort to hypothesize and quantitatively calculate non-farm economic activities that can be attributed generally to follow from agricultural modernization. Breaking down non-farm effects into three broad categories of direct (income) effects, indirect effects and public services, Gibb goes on to measure changes occurring

between two time periods in specified non-farm industries in terms of number of firms, employment absorption, and their distribution according to the above-specified categories. The basic assumption followed is that there was some 25 percent increase in agricultural productivity during the period considered that can be associated with the growth of non-farm activities.¹¹

As expected, the results of empirical works tend to support the argument about the critical place of non-farm activities in overall economic growth. They document the emergence of non-farm enterprises that is easily associated with increased incomes in an agricultural sector. Policy-wise, they point out that one can equally argue that, at least at early stages of development, growth may also importantly (have to) be agriculture-led.

Of particular interest in the Gibb studies is the differential impact on the three categories of non-farm enterprises specified. For the Gapan (Nueva Ecija) area, he finds a higher share of non-farm employment in enterprises falling under direct income effects than public services or output (indirect) effects. What is even more interesting is the finding that over the time period studied, non-farm growth (indexed by employment) in income-effect industries is more than twice the growth rate in output effect industries and public services. Discerning comparative impacts is made possible since the study looks at non-farm activities

in rural towns as well. While not quite significant, non-farm activity growth in direct effect industries is greater in rural towns than in the Gapan area. Comparing output effect industries with public services between Gapan area and rural towns, what is apparent is the wide difference in growth for the two industry-types in the rural areas as against a more uniform growth for Gapan.¹² What is discernible from this is the hypothesis that there is some positive relationship between the distribution of non-farm activities (according to some criteria) and the degree of modernization. In other words, one can expect that a more modern agricultural area (i.e. Gapan in Gibb's study) will be catering to secondary industries (inputs, processing, machinery and repair) more than direct income effect industries. On the other hand, rural towns (with less trading possibilities and with limited markets therefore) will likely have to satisfy immediate direct income effects demand at an initial stage of modernization. All this seems to be consistent with the framework of Hymer and Resnick.

It appears however that the empirical record is quite insufficient for one reason or another. What is immediately clear is that there is a dearth of studies tracing non-farm activities in an agricultural setting. We thus know little of the influence of non-farm industries on labor absorption, a

critical bottleneck of development. Nor do we know much of what policies can be instituted to prepare employment opportunities responsive to the outgrowth of non-farm enterprises.

There is also a need for a firmer index (or indices) of modernization with which to base an assessment of alternative standards or signals for various forms of non-farm economic activities. In short, one anticipated tool for measuring the degree of non-farm enterprises may have to be objectively specified and this is the index of agricultural modernization. This is not clearly spelled out in previous works.

It is not evident what is the shape of non-farm activities determined by different agricultural areas since studies have not compared sites and their differential impacts. For one, in Gibb's work, rural towns are all lumped together and doing so may distort the actual phenomena. For another, to undertake a comparative assessment is similar to a cross section analysis with time variable removed. There is indeed virtue in carrying out this

research.

The present paper is devoted to undertaking a comparative analysis of two Iloilo towns with respect to their non-farm activities.

III. COMPARATIVE AGRICULTURAL GROWTH

Two towns of Iloilo, Pavia and Leganes, are taken as illustrative of agricultural areas whose non-farm activities will be described. These towns are part of a provincial government effort to encourage joint planning and development. The data come from a 5-municipality establishment survey.¹³

Both Pavia and Leganes are considered part of the Iloilo City metropolis being approximately equal in (short) distance from the City. It is commonly interpreted that Leganes is less agricultural than Pavia, it having a thriving fishing industry. But as will be seen, both are predominantly agricultural.

In size, Pavia is around 20 percent larger than Leganes occupying a land area of 3,804 hectares. Leganes has an area of 3,218 hectares.¹⁴

With respect to broad aggregates, it appears that both towns are similarly situated. While both may be exposed to pull factors from the urban growth of Iloilo City, it is still of interest what their indigenous responses are with agricultural modernization.

Several indices may be examined to reflect the extent of agricultural growth and modernization of Pavia and Leganes. This will then lead to some comparative analysis of the two towns.

The Agriculture Censuses of 1961 and 1971 are used to provide benchmarks for the towns and reliance is made on the Provincial Socio-Economic Profile for the 1971-1975 period.

One rough but more reliable scope of agricultural growth measurement is the palay (rice) industry. This in effect glosses over the importance of other agricultural crops or other critical industries (such as processing in Pavia or fishing in Leganes) that do have influence on agricultural modernization. Nevertheless, palay production, at least for Iloilo, is the dominant agricultural crop through which almost all households depend their living on.

As expected the two towns did not experience an actual absolute decline of palay activities between 1961 and 1971. In the 10 year interval the number of farms grew at an annual rate of 2 percent in Pavia and 1.6 percent in Leganes.

Tables 1 and 2 show some indices of palay agriculture in Pavia between 1961 and 1971. The apparent index of modernization relies mostly on irrigation and sprayers used. In the case of Pavia and Leganes, there is no accessible data on the use of high yielding varieties (HYV's) which is perhaps a more accurate reflection of modernity.¹⁵

TABLE 1
 INDICES OF PALAY AGRICULTURE
 Pavia, Iloilo

Index	1961	1971
Farms Reported	607	746
Total production (in 44 kilograms)	59,481	96,894
Area planted (hectares)	1,569	2,003
Lowland farms with irrigation (first crop)	363	544
Lowland farms with irrigation (second crop)	65	165
Number of sprayers used	18	230

Palay output in Pavia grew by a yearly average rate of 2 percent with productivity per hectare growing by 1.7 percent and per farm productivity by 1 percent. In absolute terms, this means 10 farms per hectare in 1961 and 28 farms per hectare in 1971. On the other hand, the proportion of farms with irrigation for second crops grew from 11 percent of total farms to 21 percent.

TABLE 2
AGRICULTURAL MODERNIZATION INDICES
Pavia, Iloilo

Index	1961	1971
Palay production per farm (44 kilos)	98	130
Palay production per hectare (44 kilos)	38	48
Proportion of farms with irrigation (first crop lowland), in percent	60	73
Proportion of farms with irrigation (second crop lowland), in percent	11	22

Palay output in Pavia grew by a yearly average rate of 5 percent with productivity per hectare growing by 2.5 percent and per farm productivity by 3 percent. In absolute terms, this means 39 cavans per hectare in 1961 and 48 cavans per hectare in 1971. On the other hand, the proportion of farms with irrigation for second crops grew from 11 percent of total farms to 22 percent.