

Looking now into the experience of Leganes, Tables 3 and 4 show the analogous values for the specified indices. In absolute terms, Leganes has a lower productivity per hectare than Pavia. However in terms of growth rates, Leganes appears more adaptable to modernization, evidenced by a 30 percent yearly growth rate in the proportion of farms with irrigation for second crop.

TABLE 3
INDICES OF PALAY AGRICULTURE
Leganes, Iloilo

Index	1961	1971
Farms reported	413	484
Total production (in 44 kilograms)	42,094	79,122
Area planted (in hectares)	1,401	1,934
Lowland farms with irrigation (first crop)	384	444
Lowland farms with irrigation (second crop)	9	124
Number of sprayers used	15	195

TABLE 4

AGRICULTURAL MODERNIZATION INDICES Leganes, Iloilo

Index	1961	1971
Palay production per farm (44 kilos)	197	163
Palay production per hectare (44 kilos)	29	41
Proportion of farms with irrigation (first crop lowland), in percent	93	92
Proportion of farms with irrigation (second crop lowland), in percent	26	26

Beyond 1971, the resulting outcome of the Leganes modernization sensitiveness is clearly reflected in its annual rate of growth of palay output which was 12 percent as compared with Pavia's 9 percent growth rate. Thus by these accounts Leganes is relatively more modernized than Pavia¹⁶ is. It remains to be shown by supplementary data and by the state of non-farm activities that Leganes' level of comparative agricultural modernization implies similar non-farm economic conditions.

IV. COMPARATIVE NON-FARM ECONOMIC ACTIVITIES

Following the classification set out by Gibb, direct effect industries are those which are induced directly by absolute income growth. These include retailing of traditional goods and services, non-traditional goods and services, personal and recreational services, jeepney operator, tricycle operator, light repair shops, secondary education, housing components and furnitures, construction materials, and construction manufacture and supplies. It is easy enough to understand that as incomes rise, marginal expenditures for food fall and for non-food items rise. One can thus imagine an emerging demand for transportation (instead of walking), home furnishings, tailored clothes, and various types of recreation facilities.

Indirect effect industries cater primarily to investment demand or the further processing of agricultural products, agricultural input supplies, vehicle body building and service stations.

Public-service effects are taken as the highest form of effects resulting from agricultural modernization. These are expressed in the form of the growth of (private) medical services, utilities, and banking establishments. While some essential

social services may be available it is the private demand for them that is a critical outgrowth of modernization. In the case of primary education for example, as the degree of modernity rises one can presumably foresee an increasing desire for private primary education where more specific attention is provided children.

At this descriptive level, the limited evidence from the establishment survey indicates that the comparative non-farm economic conditions of the Leganes and Pavia towns follow pretty much the implied hypotheses spelled out in the previous sections. Drawn randomly with an almost equal number of respondents,¹⁷ the distribution of the establishments by the categorization advanced by Gibb is found in Table 5. Note that while the absolute numbers of establishments appear to be the same, the relative numbers indicate their large bulk in direct effect industries. But more than this Leganes displays a greater number of indirect effect industries as opposed to Pavia. Both have the same number of public service effect industries.

TABLE 5

**DISTRIBUTION OF SAMPLE ESTABLISHMENTS
BY MODERNIZATION**

Industry Category	Leganes (Number)	Pavia (Number)
Direct Effect	55	57
Indirect Effect	12	7
Public Services	1	1
TOTAL	68	65

A closer look at the different industry categories reveals

some interesting breakdown that supports the argument that comparatively speaking Pavia is at a lower level than Leganes. For example, the number of establishments in the retail trade in Pavia is 30 compared to the 23 in Leganes. More recreation facilities operate in Pavia than in Leganes (11 versus 9).

Yet at the next level, more rice mills (11) operate in Leganes as opposed to 5 in Pavia. More concrete evidence must of course be offered in order for one to fully appreciate the differential effect on the two towns -- e.g. employment, value added. This type of more accurate comparative analysis will be undertaken separately.

One can also hypothesize that savings rates are higher in Leganes than Pavia. On the presumption that their mobilization and use are reflected in capitalization rates among emerging non-farm establishments, one can expect average capital of establishments to differ. In 1976 the average capital of establishments in Leganes was 47 percent higher than in Pavia. In absolute amounts this was ₡3,176 compared with ₡2,154 in Pavia (see Table 6). Quite apparent in the industry effects, the disparity in the indirect effects is wider than either of the other. Two effects, again supporting the argument that at Leganes' level of modernization indirect effect industries are responding actively relative to direct effect ones.

TABLE 6

AVERAGE CAPITAL OF BUSINESS: 1976
(Pesos)

Industry Category	Leganes	Pavia
Direct Effect	2,764	2,035
Indirect Effect	4,500	2,857
Public Services	10,000	8,000
Average	3,176	2,154

Looking into the specific profiles of the two towns provides another measure of the relative conditions in terms of non-farm enterprises. In 1978, Leganes reported more establishments granted mayor's permit in the range of industries classified as indirect effect industries than in Pavia. For example, for electricity, gas, and water utility type of establishments, 61 were granted permit as opposed to only 1 in Pavia. In transportation, communication and storage, the number is 15 in Leganes as opposed to none in Pavia. On the other hand, there was more proliferation of direct income effect establishments in Pavia relative to Leganes though perhaps quite insignificant -- 117 compared with 105. One cannot however discern particular patterns from the towns profiles because of different definitions used and varying classificatory schemes. Nevertheless this additional comparative information does not contradict the earlier nations advanced.

An added element that may feed non-farm economic growth aside from agricultural modernization is the role of inter-municipal trade. The theoretical and practical appeal of viewing non-farm growth along an international trade framework has been sketched elsewhere.¹⁸ Given two areas which are simultaneously experiencing non-farm economic activities, an

argument can be made that the one more open will likely gain more.

Comparing Leganes and Pavia, it appears that Leganes establishments experienced more goods sold outside of town than Pavia, even though both are quite accessible from the city and neighboring municipalities. It appears moreover that a concentration of sales on Iloilo City is more sensitive to higher multipliers than elsewhere since disposable incomes and "import" propensities are higher in the city.

In 1976, some 22.1 percent of the goods sold by sample establishments in Leganes were made to Iloilo City outlets and customers. During the same period only 9.2 percent of goods sold in Pavia went to Iloilo City. Two contradictory points are apparent here. On the one hand the relatively large Leganes trade transactions may be associated with specialized goods for which the town may have a comparative advantage on and not necessarily emerging from agricultural modernization. On the other hand, trade may have grown from an initial internal demand generated by modernization a la Linder.¹⁹ Since the investigation covers non-farm activities normally associated with growth in incomes one can presume that their emergency in Iloilo was a response to the City's modernization stage which at later points registered as desire for more superior products

unlikely to come from Leganes. Barring specialized types of goods therefore, the internal demand spillover into trade is an appealing explanation of the high trade movements in Leganes.

V. CONCLUSIONS

This paper traced some patterns of non-farm economic activities in two towns of Iloilo. The two were differentiated in terms of their degrees of agricultural modernization. Within this broad framework the resulting structure of the non-farm economy that emerges was described. Data were later applied to the specific notions about relative structure of non-farm activities.

At least three general conclusions can be advanced from this description:

1. There is some association between agricultural modernization and non-farm economic activities. This is more concretely apparent by comparing two towns which are discernible to have differential degrees of modernization via specific agricultural indicators. In a comparative sense one can have an idea about relative association with patterns of non-farm industries.

2. The degree of non-farm activities (and growth) is associated with a town's relative modernization state. It is found that as modernity spreads, the non-farm establishments pattern shifts toward those catering to the indirect income effects -- agricultural processing and public services, even if to some extent direct income effect activities continue with their pace.

3. Both modernization and non-farm patterns are somehow conditioned or results from trade relations. But because of the nature of the establishment pattern it is argued that trade patterns are a consequence of non-farm economic growth.

The policy insights and development directions that can be extracted from the paper need a clearer empirical underpinning than that presented here. But if only to highlight further work to pursue, it would be useful to raise them.

The comparative experience in Iloilo and the limited evidence of similar experiences argue that in general one can expect with agricultural modernization an emergence of non-farm economic activities spurred by rising incomes. This pattern is to be expected even where the form of agricultural modernization is narrow i.e., purely productivity increases. A government drive aimed at (agricultural) production and

productivity increases will still lead to non-farm activities which affect employment, savings, trade, and overall development without necessarily requiring a concomitant drive for such.

With these experiences one can also anticipate the relative structure of the non-farm economy over time and under different comparative agricultural circumstances. For example, one can anticipate that industries and services responding to early demands for inferior products would emerge at early stages. During a later development new forms emerge along the structure explained above.

It is possible to suggest that in order to smoothen adjustments along a particular structure following agricultural modernization, policy can be geared to achieve a quicker response. Various forms of training programs can be aimed at supporting these adjustments such as skills for services (tailoring, dressmaking, food preparation, repair) at early stages. Financial support (loans, incentives) and other forms of skills (engineering, feasibility studies) may be promoted at later stages within an emerging pattern of agricultural processing. Quite clearly a range of specific policy options are identifiable.

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A final observation is suggestive from the paper. The scattered evidence points out that the various forms of non-farm outgrowth at their beginning (direct income effect) stages did not largely benefit from institutional sources of capital. Rather capital resources were internally generated or mobilized from savings. This means that scarce development resources can best be placed for the indirect and public service effect industries²⁰ that modernization spawns for various reasons, and the initial burst is a self-generating event. This study does not directly give this lead. But indeed more comparative studies of this nature are necessary so that important policy options are given a more concrete basis.

¹⁰ A series of A. Gibb's papers has contributed significantly to our understanding of non-farm activities. These include "A Note: Defining the Non-farm Employment Question," Discussion Paper No. 71-14, UP Institute of Economic Development and Research (August 1971), "Report on On-going Research: Some Evidence on the Impact of Agricultural Modernization on Non-Agricultural Incomes in Agricultural Market Centers," Discussion Paper No. 72-4, UP IEDR (April 1972), "Some Evidence on Agriculturally-Based Cities," Discussion Paper No. 72-14, UP IEDR (June 1972), and "Preliminary Data on Non-Farm Employment Changes in an Agricultural Sub-Region," Discussion Paper No. 72-19, UP IEDR (June 1972).

¹¹ In Gibb's work this assumption is never fully elucidated nor quantitatively documented. While this is not the real purpose of his work, this apparent lacunae puts difficulties in associating non-farm growth with modernization.

¹² Ibid., "Preliminary Data....."

¹³ The papers pertaining to this survey are as follows: F.A. Alburo, op. cit., F. David, "Inter-Municipality Patterns of Trade and Economic Activities: Survey Design," Research Memorandum No. 16 (September 1977), UPCI, E. Masa, "Inter-Municipality Patterns of Trade and Economic Activities: Procedure," Research Memorandum No. 5 (August 1977), UPCI, I. Siason, "Inter-Municipality Patterns of Trade and Economic Activities: Variables to Study," Research Memorandum No. 4 (August 1977), UPCI.

¹⁴ Most of the quantitative descriptions of the two towns are derived from the Iloilo Socio-Economic Profile (Iloilo: Provincial Development Staff, 1976).

¹⁵ But there are studies which document the adoption rates of HYV's e.g. I. Palmer, "The New Rice in the Philippines," Studies on the Green Revolution No. 10 (Geneva, United Nations Research Institute for Social Development, 1975).

¹⁶ In terms of the 1974-75 cropping season, Leganes has an average palay yield of 99 cavans per hectare while Pavia averages 83 cavans per hectare. These figures are increases from their 1970-71 yields of 60 and 57 cavans per hectare, respectively.

FOOTNOTES

¹F.A. Alburo, "Inter-Municipality Patterns of Trade and Economic Activities: Perspective and Context," Research Memorandum No. 2 (July 1977), University of the Philippines College Iloilo.

²S. Hymer and S. Resnick, "A Model of An Agrarian Economy with Non-Agricultural Activities," American Economic Review (September 1967), 493-506.

³G. Becker, "A Theory of the Allocation of Time," Economic Journal (September 1965), 493-517.

⁴S. Resnick, "The Decline of Rural Industry under Export Expansion: A Comparison Among Burma, Philippines and Thailand, 1870-1938," Journal of Economic History (March 1970), 51:73

⁵For a treatment of this hypothesis see E.K. Quizon, "Time Allocation in Philippine Rural Households: The Laguna Case" (Mimeographed, 1977).

⁶D. Anderson and M.W. Leiserson, Rural Enterprise and Nonfarm Employment, A World Bank Paper (January 1978) Sketches the spatial characteristics of non-farm enterprises.

⁷Ibid., pp. 17-24.

⁸For example, the changing definitions used to operationalize "rural" and "urban" have varied over time. It has therefore not been possible to document the phenomena of decreasing agricultural employment and rural labor force.

⁹F.C. Child and H. Kaneda, "Links to the Green Revolution: A Study of Small-Scale Agriculturally Related Industry in the Pakistan Punjab," Economic Development and Cultural Change (January 1975), 249-275.

¹⁷F. David, op. cit.

¹⁸F.A. Alburo, op. cit.

¹⁹S. Linder, An Essay on Trade and Transformation (New York: John Wiley, 1961).

²⁰Both the technology and scale factors require some kind of external support that can perhaps be argued to be efficiently provided through government assistance (e.g., production decisions, choice of equipment).