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CENTER DISCUSSION PAPER NO. 608

THE DYNAMICS OF RURAL DEVELOPMENT:
THEORY AND APPLICATION

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THE DYNAMICS OF RURAL DEVELOPMENT: THEORY AND APPLICATION

Abstract

This paper tries to demonstrate the potentially important role of rural non-agricultural activity in the development process. Using the Hymer/Resnick Z-goods model as a point of departure, we first show that its pessimistic conclusions are based on rather restrictive assumptions as applied to the colonial period. We relax these assumptions, indicating the theoretical possibility of a substantially more positive scenario for the pre-independence era. Subsequently, we conceptualize the role of Z goods, traditional and non-traditional, in the post-independence era, again distinguishing between archetypal pessimistic and optimistic cases. Finally, empirical work on the comparative experience of the Philippines and Taiwan is brought to bear to demonstrate the case.

KEY WORDS: Rural non-agricultural activity, Philippines, Taiwan

THE DYNAMICS OF RURAL DEVELOPMENT: THEORY AND APPLICATION*

I. Introduction

Rural non-agricultural activities (RNA) have been a much neglected aspect of development, as is increasingly recognized. Yet evidence from East Asia suggests that there exists a strong positive relationship between the achievement of dynamic balanced rural development and success in overall development for a country as a whole.

Hymer and Resnick (H-R) some time ago constructed a model to explain the elimination of rural non-agricultural activities in the colonial era, and Resnick applied this model to some South-East Asian countries.¹ But, in fact, even in the colonial period a lot of RNA survived. And in the post-colonial period some countries have experienced dynamic rural industrialization; in many others a considerable amount of RNA activity is occurring (See e.g. Ho, 1979; Anderson and Leiserson, 1980; Shand, 1986).

This paper aims to explore the major determinants of dynamism in rural linkages, from both a theoretical and empirical perspective.² These linkages, in turn, are crucial in determining the success of the development process as a whole, where success is defined in terms of equity across families and regions, and poverty reduction, as well as economic growth.³ We first (Section II) briefly present the H-R model as applied to the colonial period. In Section III we broaden the discussion to indicate how departures from this framework can shed additional light both on alternative colonial

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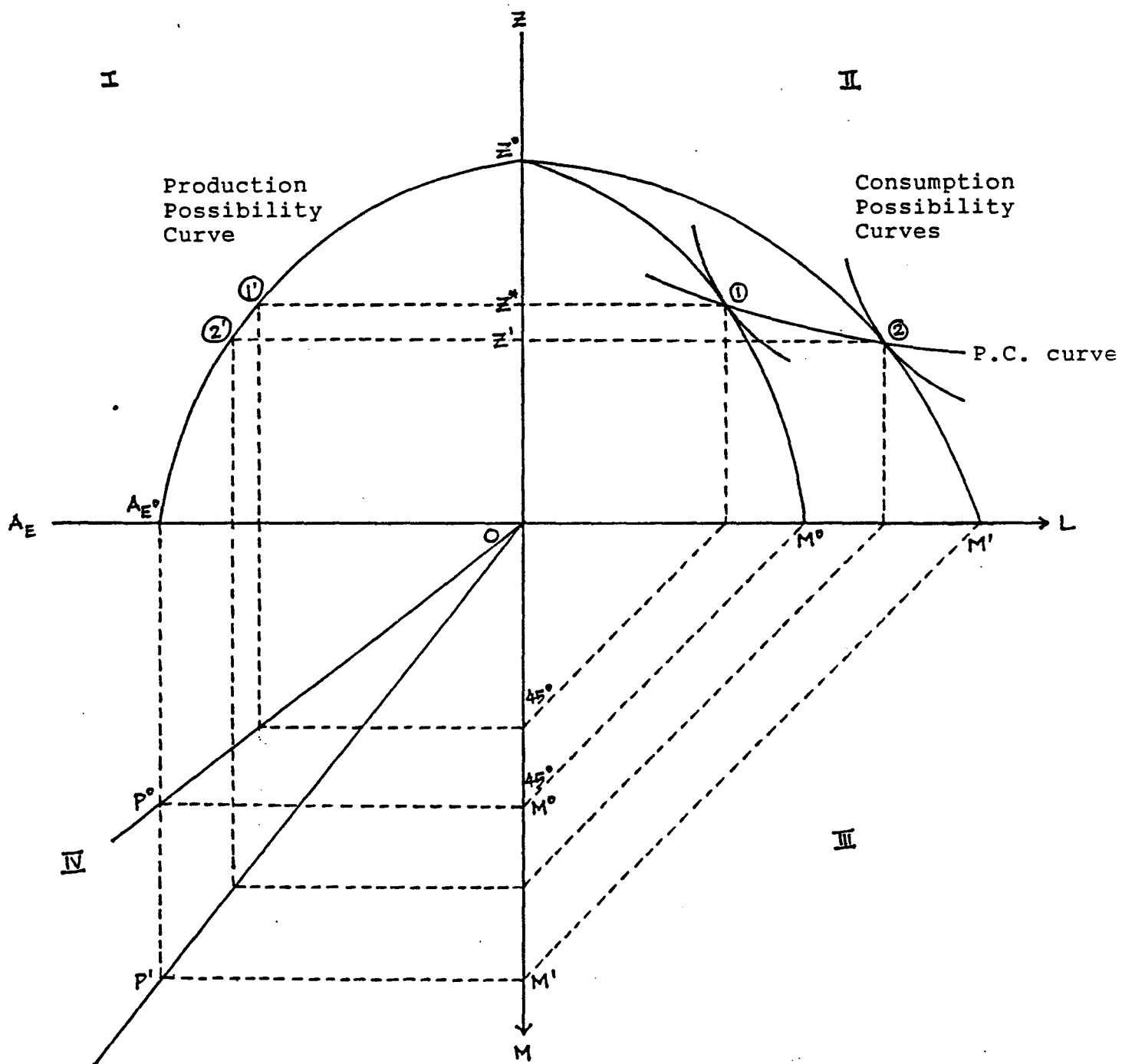
situations and on differential performance in the post-colonial era. In Section IV the contrasting experience of two real world cases is explored in the context of the framework of Section III. Section V reports on two decades of experience in one Philippine village as a microcosm of rural development seen from this perspective. Some conclusions are presented in Section VI.

II. The Hymer-Resnick Model Revisited

Hymer and Resnick (H-R) postulate a self-sufficient peasant economy in the pre-colonial era. Peasants use only labor to produce two types of goods, food and some simple non-agricultural produce, to serve their own needs. The non-agricultural activities - defined as "Z-goods" - consist of household or village production of handicrafts and services, including some textiles, garments and food processing for village consumption. However, as the colonial era increasingly linked the rural economy with the world economy, two related developments occurred: on the one hand, profitable new opportunities in the form of minerals and cash crops for world markets opened up, offering an alternative use for rural labor, i.e. new export activities developed; on the other, consumption of imported manufactured goods, produced in the metropolitan centers, became possible and, at times, was mandated. These imported products (M) often were of a higher quality and fulfilled a wider range of needs than Z-goods. Consequently, labor was induced (sometimes forced) to move out of the production of (non-traded) Z-goods and into the production of (non-domestically consumed) cash crops for export (A_E); the foreign exchange so earned permitted the purchase of imported manufactures which substituted for Z-goods production and permitted the further expansion of A_E activities. As a consequence, there was a decline of the Z-goods sector, and an expansion of both exports and imports. The production of food for domestic consumption was assumed to be broadly unaffected by (nor to affect) these developments.

The H-R displacement process is illustrated in Diagram 1. $A_E^0 Z^0$ in quadrant I represents the production possibility curve, as the fixed supply of labor (i.e. all rural labor after the society's food needs have been met) is allowed to shift between the production of non-traded Z-goods and the production of non-domestically consumed A_E goods. Cash crop exports are exchanged for imports (M), through international exchange at some terms of trade OP^0 (quadrant IV). Using a 45° line to project OM^0 imports onto the horizontal axis (in quadrant II), $Z^0 M^0$ then represents the consumption possibilities curve, corresponding to the production possibilities curve, $A_E^0 Z^0$, given the terms of trade OP^0 . A price-consumption curve P.C. can be constructed in quadrant II representing the locus of all tangencies between the consumer indifference map (between Z and M goods) and alternative terms of trade. Given terms of trade OP^0 , equilibrium at time zero is then established at (1) for consumption and at (1') for production; production of A_E is then given by Oa^* and that of Z goods by OZ^* , representing Z displacement of $Z^0 Z^*$ compared with a no-trade position. If the terms of trade improve to OP^1 (in quadrant IV)⁴, the consumption possibilities curve shifts out to $Z^0 M^1$, and the consumption (production) equilibrium to (2) (2'), showing further Z displacement by M goods, as the substitution effect overcomes the income effect and shifts consumption towards M. If Z is assumed to be an inferior good, both the price and income effects are negative and there is substantial Z displacement in response to further improvements in the terms of trade. But, as Bautista (1971) has pointed out, the decline of Z good activities does not depend on the inferiority of Z goods. However, if Z is not an inferior good, at some point the income effect is likely to overcome the substitution effect and the price-consumption curve will turn up.

Diagram 1: The Hymer-Resnick Case (Unfavorable Colonial)



III. Major Departures from H-R: Colonial and Post-Colonial

The H-R model was intended primarily to apply to the colonial era. But even in that era the assumptions made were not, of course, universally applicable, either with respect to the likely movement of the terms of trade or the inferior character of Z goods. Moreover, in the post-colonial era, in most developing countries there are a number of assumptions which clearly do not apply. The following are the major departures on which we shall focus:

1. The Z goods sector in the H-R model is broadly homogeneous, composed of traditional non-agricultural activities carried out in individual households or at the village level. However, RNA activities, in fact, range from household and village production on a very small scale, producing very simple, low quality products, to small modern factories using mechanical horse-power, sometimes using imported technology, and producing modern higher quality products. We shall therefore divide the Z-sector into two: Z_T , covering traditional household and village processes and products, and Z_M , covering non-traditional or modernizing rural non-agricultural processes and products. The latter are more likely to be located in rural towns, rather than in households or villages. Some Z_M activities existed even in the colonial era, at least in some countries, but they clearly become more important in the post-colonial period. Science and technology inputs, domestic and foreign, contribute to the productivity of Z_M activities. An example of Z_T would be household rice milling or handloom weaving, while metal-working or machinery repair shops would be typical Z_M activities.⁵

2. A major development of the post-colonial era has been the emergence of a modern industrial sector, located predominantly in urban areas. This sector, initially at least, was devoted to replacing imports. We shall call this the U-sector. In the presence of the U-sector, the H-R displacement of Z-goods by imports is no longer a dominant feature; instead it is the U-sector which now displaces Z-goods, actually or potentially. We shall call the displacement of Z-goods by U-goods, U-displacement. The assumption that labor is the only factor of production in non-agriculture must now be dropped as the U-sector imports capital goods in exchange for the A_E cash crop exports.
3. The agricultural sector (A) should also be more explicitly divided into two subsectors: the agricultural cash crop export sector (A_E), and the domestically oriented food producing agricultural sector (A_D), which has up to now been behind a veil. In both periods, but especially the post-colonial era, domestic agriculture can be assumed to have the potential for dynamic growth as it is subject to productivity-raising technology change. This feature of A_D - not incorporated into the H-R model - has two relevant consequences: first, with less resources required to feed the total population, the sector can, over time, release land and labor for use elsewhere, i.e. the production of more A_E and Z goods, permitting an outward shift of the A_E Z production possibility frontier. Second, a dynamic A_D can give rise to stronger linkages between domestic agriculture and rural non-agriculture (RNA) than export agriculture typically provides. These linkages run both from A to RNA, and back from RNA to A. A to RNA encompasses three types of linkage -- forward production linkages, backward production linkages and consumption linkages. RNA to A linkages also have three dimensions: an improvement in agricultural markets or better internal terms of trade

resulting from additional RNA activity; secondly, improved S & T knowledge, often embodied in modern inputs; and, thirdly, a change in attitudes among farmers, who have a greater incentive to raise productivity and accumulate savings, as a result of the growing availability of consumer goods and additional opportunities for investment in RNA⁶.

4. In the colonial era, the H-R assumption of improving external terms of trade or improving opportunities for A_E may have been broadly correct. But in the post-colonial era this does not seem to correspond to the facts; most LDCs' terms of trade have either remained constant or deteriorated⁷. Bautista (1971) shows that if deteriorating terms of trade occur in the H-R model Z-goods production tends to increase. We shall assume constant terms of trade in the discussion below.

We shall explore the implications for the development of the rural economy of these various departures from the basic H-R assumptions. In both the colonial and post-colonial eras, conditions may be relatively favorable or unfavorable for the achievement of balanced growth. While our main interest is focussed on the post-colonial era, it is useful first to contrast the extremes of the unfavorable colonial archetype, essentially the Hymer-Resnick case, with the more favorable archetype.

A. Colonial Archetypes

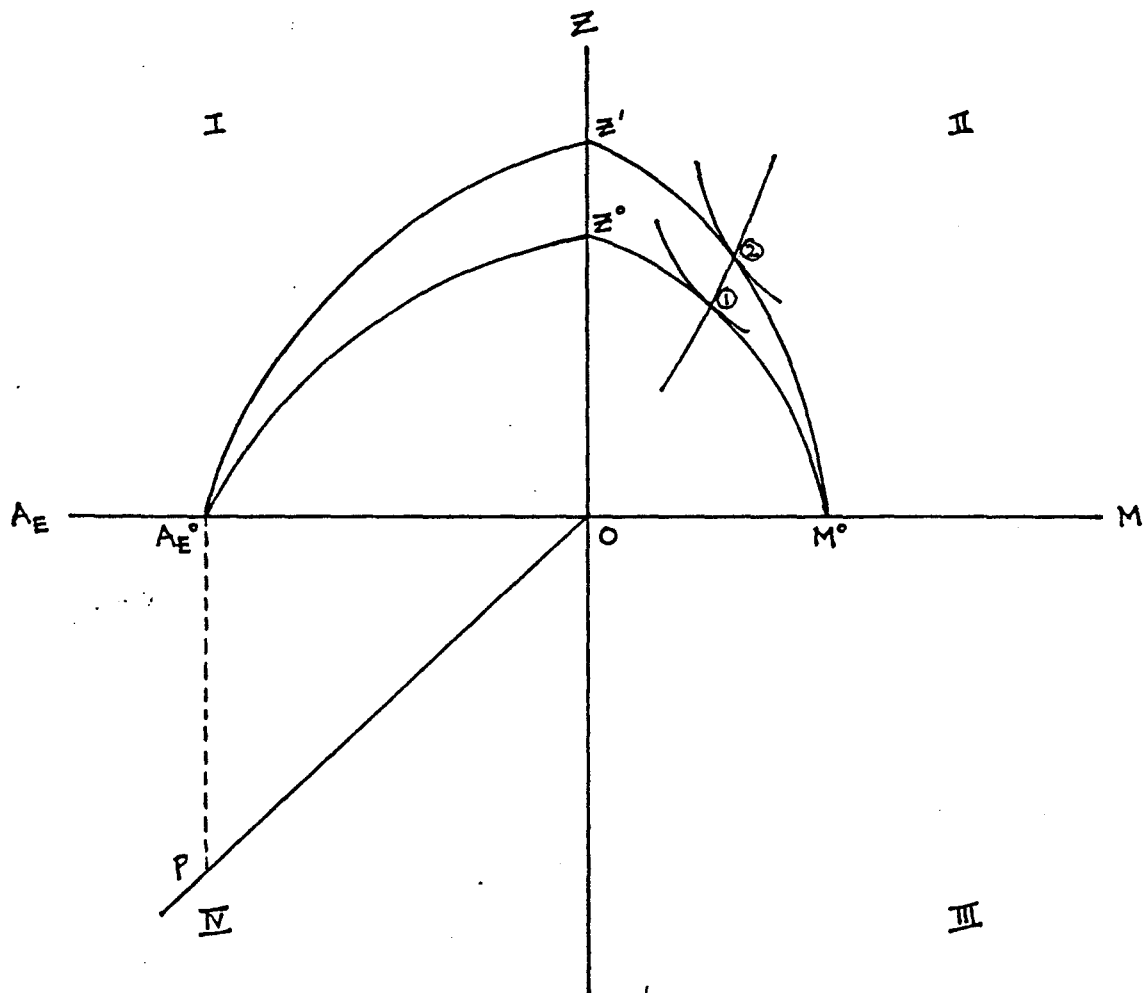
1. The Unfavorable Colonial Archetype: The H-R Case

The distinguishing features of this case are that colonial policies inhibit the development of domestic industry through a combination of mercantilist restrictions by the mother country on the pattern of trade and

investment, coupled with relative neglect of food producing agriculture. The focus of government attention is on the export cash crop and the auxiliary overhead services required to bring it to market; little attention is paid to agriculture for domestic consumption. A_E is often concentrated in large plantations, yielding an unequal distribution of income and weak linkages with non-agriculture. Where the primary export consists of minerals the resulting rural income distribution is even more unequal and the rural linkages even weaker⁸. As a combined consequence of these features, the Z-goods sector is likely to be dominated by traditional household goods Z_T , with negligible Z_M activity. In this context Z_T is gradually displaced by imported consumer goods, while domestic agriculture tends to stagnate. This is the H-R prototype, discussed above and summarized in Diagram 1.

2. The Favorable Colonial Archetype

In circumstances more favorable for rural development, the colonial government, for its own reasons, focusses more attention on food producing agriculture (usually because the export and the domestic food crop are the same, e.g. rice) and occasionally even resorts to land reform. In these circumstances, the agricultural sector tends to be uni-modal, i.e. composed of large numbers of individual small-holders, rather than bi-modal as in the unfavorable archetype (i.e. with plantations hiring landless agricultural workers); consequently agricultural income is more equally distributed, making for good linkages with non-agricultural activity. In this favorable case, the colonial government is less restrictive with respect to local entrepreneurs, permitting local industrial development to progress naturally as a consequence of the various linkages.

Diagram 2: Favorable Colonial Case

Under these assumptions, illustrated in Diagram 2, as agricultural productivity increases, more labor is freed up, permitting an outward shift of the production possibility curve $A_E^0 Z^0$ to $A_E^0 Z'$, thereby also leading to an outward shift in the consumption possibility curve, $Z^0 M^0$, to $Z' M^0$, in the second quadrant.⁹ Z is now increasingly made up of Z_M which is much more dynamic and innovative in character than the Z_T it replaces. As a consequence of both these quantitative and qualitative shifts, the displacement of Z by M goods, predicted by H-R, is considerably weakened and, indeed, may not occur as modernizing rural industries are better able to compete with imports.¹⁰

Both the substitution and income effects are now likely to be positive, leading to a new equilibrium position at (2) in quadrant II. Consequently Z goods production increases, certainly relative to the pessimistic H-R case.

B. Post-Colonial Archetypes

1. The Unfavorable Post-Colonial Archetype

The major development of the post-colonial era is the emergence of a U-sector, as a consequence of the well-known import substitution policy syndrome. In the unfavorable case, urban industry is encouraged, relative to both Z-goods production and domestic agriculture, by government policies affecting the internal terms of trade, the exchange rate, the interest rate, the allocation of infrastructure, credit and foreign exchange.¹¹ The U-sector is mainly composed of large-scale domestic enterprises, public and private, as well as MNCs. Foreigners -- both private and public -- typically help finance this urban-oriented import substitution process. Within agriculture, export crops, whose earnings are needed to help fuel the import substitution process, are usually favored relative to food crops in terms of research, extension, subsidized inputs availability, relative prices etc. Moreover, land and income are likely to remain unequally distributed,

especially in the A_E activities, with increases in purchasing power directed largely towards U-goods. Consequently, rural linkages remain weak, both as a result of the neglect of the food producing agricultural sector and the U-displacement process which consists in the displacement of Z (and M) goods by the newly developing urban consumer goods industries. While some Z_T production will continue -- partly due to the persistence of rural poverty and partly the "natural" protection afforded by transport costs (especially in large countries) -- it is the potential development of the Z_M sector which is most severely affected.

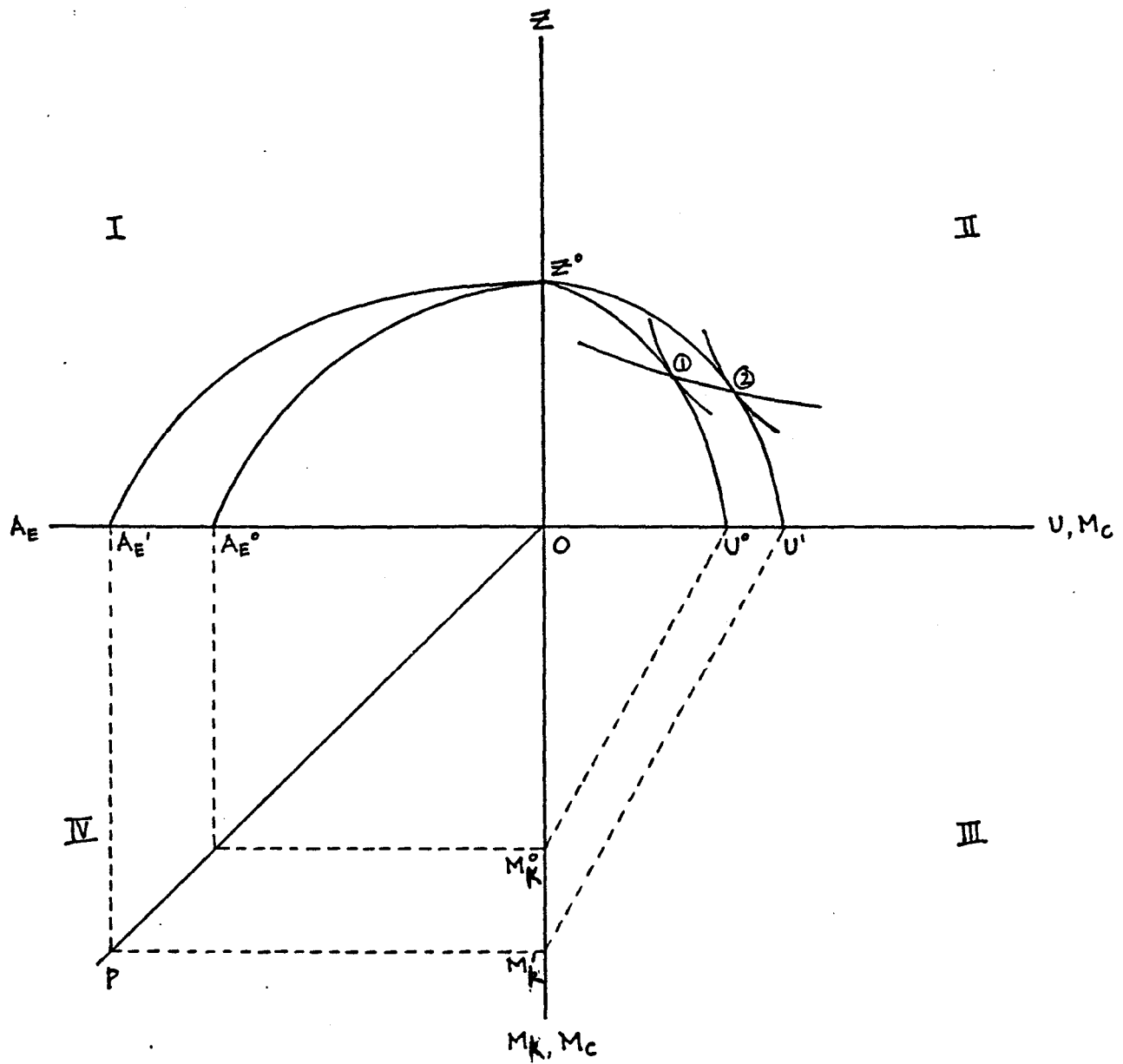
2. The Favorable Post-Colonial Archetype

In the more favorable post-colonial circumstances, the Z-goods sector represents a dynamic element in interaction with a growing food producing agricultural sector. This results from a more favorable environment in a number of dimensions. First, in this case the government does not discriminate against domestic agriculture relative to cash crop export agriculture. Consequently, productivity expands in the A_D sector and additional resources are released to the rest of the economy. Second, since income generated within A_D is more likely to be equally distributed than within A_E , especially when land-saving and labor using technologies are adopted, that sector's expansion generates strong potential demand for the output of rural non-agricultural activities.¹² Third, government policy with respect to the allocation of infrastructure and its macro-economic policies are generally more even-handed as between rural and urban industry, as well as between agriculture and industry.

As a consequence of all this, the rural industrial sector faces relatively favorable conditions, both from the perspective of demand, via linkages with agriculture, and of supply, via the dynamics of investment and the adoption of new technology. The resulting modernization transforms Z from

a sector largely composed of very small, low productivity, household and village enterprises of the Z_T type to one increasingly represented by Z_M activities, i.e. composed of small factories using modern (often imported and adapted) technologies and producing products of higher quality than the traditional Z_T goods, selling at prices competitive with the products of the U-sector and imports. The modernized Z_M sector may eventually also export, through subcontracting relations with the U-sector as well as directly. Z_M gradually displaces Z_T and the Z-goods sector retains a substantial, and likely growing, importance, at least until the labor surplus has been eliminated. U-displacement is now much less in evidence, since the U-sector itself is less artificially nurtured and is forced to compete or induced to establish complementary relations with the Z-goods sector. At some point the U-sector will begin to supply the Z_M sector with domestically manufactured capital goods, while the Z_M sector supplies the U-sector with partly processed agricultural goods and/or serves as a subcontractor for the production of U-goods. Far from exhibiting H-R stagnation, the Z sector thus becomes one of the dynamic elements in industrial development, with a high rate of capital accumulation, technology change and employment expansion. This, in turn, acts as a stimulant to agricultural growth, through RNA to A linkages. This pattern of development tends to be associated with a high overall rate of growth, a more egalitarian income distribution and better regional balance, in contrast to the unfavorable archetype.

Diagrams 3 and 4 illustrate these two post-colonial extremes. The horizontal axis to the right of the origin now indicates a combination of U-goods and M_C , or imported consumer goods, the proportion of imports in the supply of total consumer goods declining as import substitution proceeds. Earnings from agricultural exports are now spent increasingly on imports of capital goods (M_K) and to a diminishing extent on imports of consumer goods (M_C), both shown on the vertical axis below the origin. The consumption

Diagram 3: Unfavorable Post Colonial Case

possibility curve (e.g. Z^0U^0 in Diagram 3) represents the possible combinations of the consumption of Z-goods and the consumption of U-goods. As illustrated in the diagram, once imported consumer goods have been fully replaced by capital goods imports, the proceeds from agricultural exports are translated, first, into larger amounts of M_k , and then, through domestic production, into larger volumes of U.¹³

In the unfavorable case, shown in Diagram 3, while the productivity and output of A_E increase, the productivity of the Z sector remains unchanged, shifting the production possibility curve outward from $Z^0A_E^0$ to Z^0A_E' . The consumption possibility curve therefore shifts correspondingly, from Z^0U^0 to Z^0U' . The substitution effect acts to reduce the consumption of Z-goods and to increase the consumption of U. Since the Z sector remains overwhelmingly Z_T , the income effect also tends to be negative, i.e. Z_T is likely to be an inferior good. So this too acts to reduce Z-consumption. Consequently the equilibrium position moves from (1) to (2), with reduced production and consumption of Z-goods.

Finally, diagram 4 represents the favorable post-colonial case. Here productivity increase in the A_D sector releases labor for the production of Z and A_E and consequently there is an outward shift in the production possibilities curve in quadrant I. Z_T is gradually replaced by Z_M , with an increase in productivity enhancing the potential production of Z goods. The outward shift of A_E , however, is smaller than in the unfavorable case, as less attention is paid to that sector and more to domestic agriculture. In this case, the income as well as the substitution effects on Z-goods consumption are positive because of the increasingly modern characteristic of Z_M goods, leading to a new equilibrium at (2) in quadrant II of Diagram 4. Consequently, both Z-goods production and consumption expand, leading to balanced rural growth supported by strong rural linkages and expanding, complementary relations with the U-sector over time.

IV. Application: the Comparative Development Experience of the Philippines and Taiwan

In this section we examine the record of two Asian developing economies, the Philippines and Taiwan, in relation to the scenarios sketched above for both the colonial and post-colonial periods. While the four archetypal cases are useful for theoretical and expositional purposes, the real world, as usual, resides between such extremes. Nevertheless, the contrast between these two economies is sufficiently marked to provide a good illustration of the explanatory value of our framework. We shall, first, briefly examine the record of these two systems during their respective colonial periods and then proceed to a comparison of their post-independence performance.

A. The Colonial Period in Comparative Perspective

Taiwan was a colony of Japan's from 1895 till the end of World War II, the Philippines a colony of the U.S. over approximately the same period. The full nature and content of each of these complicated relationships is, of course, beyond the scope of this paper. Nevertheless, certain marked differences may be noted which tend to place the Philippines in the unfavorable colonial (i.e. the Hymer-Resnick) category and Taiwan in the favorable colonial category.

Japan was interested almost exclusively, certainly prior to 1930, in Taiwan's agricultural output, particularly sugar and rice, as a complement to the Japanese home economy which was beginning to run into food shortages after the turn of the century. As a consequence, Japanese colonial policy was heavily rural-oriented from the outset, evidenced by the 1905 land reform, the attention consistently paid both to physical infrastructure, e.g. irrigation and roads, and organizational infrastructure, e.g. the creation of farmers' associations and substantial agricultural research expenditures focused on the two major crops.

The absence of a clear separation here between A_E and A_D meant that food-producing agriculture was a dynamic activity from the very beginning and was, therefore, in a position to release resources to other activities. While official colonial policy discouraged large-scale Taiwanese industrial activity - keeping it mostly in state or private Japanese hands¹⁴ - food processing, textiles and other Z-goods activities were not inhibited.

Japan's attitude towards education in Taiwan was more ambiguous. In the pre-1930 phase, Taiwanese were largely excluded from higher education, although, broad support for primary education, led to relatively high literacy levels. After 1930, a change in policy favored broader access to secondary, especially technical, education. Thus, by the time of independence, the combination of high literacy rates and an emphasis on vocational, non-academic education at the secondary level helped create a high quality labor force conducive to the growth of Z_M .

In summary, along a spectrum, the Taiwan case comes close to the favorable colonial archetype, with a dynamic A_D sector, substantial Z_T , as well as some Z_M activities, although larger scale industrial participation by Taiwanese was discouraged until the 1930's. But the human, organizational and physical infrastructure was gradually being constructed favoring the development of an indigenous entrepreneurial class, later augmented by the arrival of immigrants from the Mainland.

The colonial experience of the Philippines stands in some contrast. The U.S. colonial regime appears to have been mainly interested in the cash crop primary product exports of the colony, together with the development of a market for U.S. consumer goods. As Resnick has shown¹⁵, much pre-existing traditional Z-goods production was gradually destroyed in the process, while domestic market-oriented food-producing agriculture, mainly rice and maize, was neglected, with sugar, gold, copra, timber, pineapples, etc. benefitting from the bulk of rural infrastructure and research.

In the education sphere, on the other hand, the U.S. not only sought to achieve broad primary education coverage but also, with the strong participation of missionaries and the Catholic Church, made higher education, both secondary and university level, a priority. There is evidence, however, that, while colonial policy was surprisingly democratic in its effort to include substantial portions of the Philippine population, education was generally low in quality and had a strong academic or classical bias - not particularly conducive to the growth of Z_M activities. Local entrepreneurial "readiness" was probably not as good as the sheer volume of educational investment might have led one to expect.

Table IV.1 illustrates the contrast in aggregate performance between the two systems. It indicates that Taiwan's performance was substantially better both in agriculture and non-agriculture in the colonial period. The Philippines may thus be seen as coming closer to the unfavorable colonial archetype along our spectrum; it was indeed one of the three countries to which the original H-R model was empirically applied.¹⁶ Taiwan, on the other hand, had already attained a high growth rate in domestic agriculture, with related non-agricultural activities, including modernizing rural industry, less discriminated against. The two systems thus had substantially different "initial conditions" at the time of independence.

B. The Post-Colonial Period in Comparative Perspective

The more favorable initial conditions for rural non-agricultural development in Taiwan were reinforced by post-colonial policies. These have closely approximated the favorable archetype in our theoretical schema, whereas those of the Philippines have shared some (but not all) of the unfavorable characteristics.

Two sets of policies are relevant: first, the macro-policy setting which exerts considerable, albeit indirect, influence over rural development; and secondly, those specifically directed towards rural development. In both cases Taiwan's policies were markedly more favorable to the rural sector and rural industrialization than Philippine policies.

The macro-policy setting:

The macro policy setting greatly influences rural development in a number of ways. On the one hand, the industrial/agricultural terms of trade help determine agricultural incentives, rural incomes and resource availability. On the other, import-substitution regimes generally encourage relatively capital-intensive, large scale and import-intensive technologies, with location of industry in or near the capital city, especially if that city is also the main port of entry. These biases are particularly marked where centralized decisions determine the allocation of resources and there is heavy dependence on foreign capital. In contrast, more export-oriented industrialization is likely to be consistent with a dispersed location of industry, especially where exports consist of the processing of agricultural products and where local companies are heavily involved. In these circumstances a complementary, rather than competitive, relationship between urban and rural industry is likely to emerge.

Macro-policy differences were an important influence on comparative developments in the two economies under scrutiny. Both societies remained within an import substitution framework in the 1950s, but Taiwan shifted towards export substitution in the 1960s, while the Philippines adopted a secondary import substitution regime coupled with some industrial export promotion, through subsidization.

Some divergence in macro-policies was already observable in the 1950s. In the Philippines there was greater weight given to direct controls in credit and foreign exchange, while fiscal incentives favored large scale urban enterprises and encouraged the use of foreign capital. While both the Philippines and Taiwan maintained overvalued exchange rates and protection, Taiwan's multiple exchange rates and interest rates were closer to market values, and quantitative import controls were used less than tariffs, all of which softened the urban and large scale bias. Thus import substitution policies were more severe in the Philippines, and more U-industry oriented, with less concern for agriculture and rural industry.

As noted above, this divergence in policy regimes became more marked in the 1960s. The Philippines remained broadly with an import substitution orientation, but now shifted towards a more sophisticated output mix, i.e. capital goods, consumer durables and the processing of raw materials. Given the more technology-and skilled labor-intensive nature of this output mix, the need for protection and other interventions became greater as the divergence from international prices widened. Thus the bias in favor of capital-intensive, urban industrial activities was exacerbated. The form of import substitution regime followed - especially the heavy reliance on firm - specific government decisions and on foreign investment - gave an extra impetus to a centralized and urbanized pattern of industrialization. The unfavorable terms of trade for the unprotected sector (that is, both agriculture and most rural non-agricultural activities), which were an inherent aspect of the early import substitution phase in the 1950s, got worse in the Philippines in the 1960s and most of the 1970s. In the late 1970s, Philippine policy was modified somewhat in a less inward looking direction, and the bias against the rural sector became somewhat less severe. However, in Taiwan there was a full-blown move towards liberalization from the early 1960's, a lessening of industrial protection, a lower exchange rate, higher rates of interest, and more favorable terms of trade as between the urban and rural areas.

Rural development policies:

In addition to macro-policies, Taiwan's sectoral and micro-policies were also more favorable to the rural sector than those of the Philippines.

One major policy difference is that Taiwan undertook a highly effective land reform early in the post-colonial period, consisting of a 25% rent reduction, the sale of public land, and, most importantly, redistribution of land to private tillers. In the Philippines, despite continuing legislation on land reform during the Marcos and Aquino regimes, there has been much less actual implementation, resulting in much more unequal land distribution: the Gini for land distribution remains at 0.8 in the Philippines, compared with 0.6 in Taiwan.

A second important difference arose in institutional development. In Taiwan, decentralized farmers' organizations, created during the colonial period, developed, with government support, into farmers' associations focussed on irrigation, the pooling of small savings, and the diffusion of both agricultural and non-agricultural technology. Working in tandem with the Joint Commission for Rural Reconstruction at the center, they provided a network for the allocation of decentralized credit and information which greatly facilitated overall rural development.

On the Philippine side, somewhat later, i.e. in the 1970s, efforts were made to induce the growth of rural cooperatives. However, these were largely coerced from above. Given the continued weakness in the implementation of related land reforms and the heavy centralization of government, local rural organizations, public and private, have never been effective in the Philippines.

Both countries encouraged technical change in agriculture, especially in food production, and both enjoyed a relatively rapid rate of innovation in the main cereal crops. In this respect, the Philippines departed from the unfavorable archetypal syndrome of policies. Thus A_D production increased

relatively rapidly in both countries (see Table IV.1), but in the Philippines this was accompanied by a much slower increase in labor productivity. It seems likely that this was due to the more extensive type of agriculture, as well as the lack of alternative employment opportunities, together with the more rapid rate of population growth.

A further important difference was that the rural character of industrialization in Taiwan was greatly encouraged by rural electrification, the charging of equal energy rates in rural and urban areas, and the early establishment of rural industrial estates, export processing zones and bonded factories. Such policies, which helped alleviate the inherent urban bias even during the import substitution phase, were either not pursued at all in the Philippines, or only half-heartedly, as in the case of the export-processing zones. Here, the allocation of infrastructure was urban-oriented, energy prices favored the Greater Manila area and the centralization of both government and private industrial activity continued to be very pronounced.¹⁷

The consequences:

The divergence in overall development performance between the Philippines and Taiwan over the past four decades has been well documented. Whether measured in terms of growth, income distribution, poverty reduction or the elimination of unemployment, the record is clear. As shown in Table IV.2, growth rates have diverged markedly, and increasingly, since 1950. The distribution of income improved remarkably in Taiwan - counter to the Kuznets inverse U-shaped hypothesis - while high levels of inequality persisted in the Philippines.

There were significant differences in other major performance indicators (see Table IV.3). One notable divergence was a sharp rise in the savings ratio in Taiwan (which more than tripled between 1950 and 1985), while the

Table IV.1

COMPARATIVE GROWTH OF AGRICULTURE AND INDUSTRY
(Average annual real rate of growth)

§

| <u>Period</u> | <u>AGRICULTURE</u> | | <u>INDUSTRY</u> | |
|---------------|--------------------|--------------------|-----------------|--------------------|
| | <u>Taiwan</u> | <u>Philippines</u> | <u>Taiwan</u> | <u>Philippines</u> |
| Colonial | | | | |
| 1902-18 | 4.6 | 5.1 | 9.0a | 4.1 |
| 1919-38 | 4.0 | .5 | 6.0 | 4.7 |
| 1902-1938 | 4.3 | 2.6 | 6.8a | 4.4 |
| Post-Colonial | | | | |
| 1950-55 | 5.0 | 3.8b | 14.7b | 12.7b |
| 1956-60 | 4.6 | 3.7 | 10.1 | 12.4 |
| 1961-65 | 6.0 | 3.5 | 14.0 | 4.0 |
| 1966-70 | 4.0 | 3.8 | 18.9 | 6.8 |
| 1971-75 | 1.2 | 5.2 | 13.2 | 7.0 |
| 1976-80 | 3.5 | 3.2 | 14.5 | 6.0 |
| 1981-86 | .7 | 1.3 | 7.6 | -1.0 |
| 1950-70 | 4.9 | 3.7b | 14.4b | 8.6b |
| 1971-86 | 1.7 | 3.1 | 11.5 | 3.7 |
| 1950-86 | 3.4 | 3.4b | 13.0b | 6.1b |

Sources:

Food and Agriculture Organization of the United Nations. FAO Production Yearbook. Rome: Various issues.

Ho, Samuel. Economic Development of Taiwan, 1860-1970. New Haven: Yale University Press, 1977.

Ho, Yhi Min. Agricultural Development of Taiwan, 1903-1960. Vanderbilt University Press, 1966 (Table 3, p. 23).

Li, K.T. The Evolution of Policy Behind Taiwan's Development Success. New Haven: Yale University Press, 1988 (p. 159).

United Nations. Yearbook of National Account Statistics. New York, various years.

Valdepenas, Vincente, and Gemelino Bautista. The Emergence of the Philippine Economy. Manila: Papyrus Press, 1977.

a) beginning 1912
b) beginning 1952

Table IV.2

Comparative Post-Colonial Performance

| | <u>Philippines</u> | <u>Taiwan</u> |
|---------|-----------------------------------------------|---------------|
| | <u>Per Capita GDP Growth Rates (% annual)</u> | |
| 1950-59 | 3.2 | 4.7 |
| 1960-69 | 2.1 | 5.9 |
| 1970-79 | 3.3 | 8.1 |
| 1980-86 | -1.5 | 5.6 |
| | <u>Income Distribution (Gini Coefficient)</u> | |
| | .49 ('56) | .56 ('50) |
| | .50 ('61) | .44 ('59) |
| | .49 ('71) | .29 ('70) |
| | .50 ('77) | .29 ('78) |

Sources: U.N. National Income Statistics, various years
World Bank, World Tables and World Development Report, various years.
Statistical Yearbook of the Republic of China, various issues.
National Income of the Republic of China, various issues.
John C.H. Fei, G. Ranis and S. Kuo, Growth With Equity: The Taiwan Case, Oxford University Press, 1979.

Table IV.3
Intermediate Level Performance Indicators

| | <u>1950</u> | <u>1960</u> | <u>1970</u> | <u>1975</u> | <u>1980</u> | <u>1985</u> |
|------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <u>Index of agric. labor productivity (1950=100)</u> | | | | | | |
| Taiwan | 100.0 | 200.0('65) | 223.7 | 295.0 | 447.0 | 450.2 |
| Philippines | 100.0 | 135.0 | 132.4 | 178.0 | 211.0 | NA |
| <u>Multiple Cropping Index</u> | | | | | | |
| Taiwan | 1.65 | 1.84 | 1.83 | 1.81 | NA | NA |
| Philippines | 1.26('48) | 1.36 | 1.45('72) | NA | NA | NA |
| <u>Total Exports/GDP</u> | | | | | | |
| Taiwan | 10.1 | 11.3 | 29.7 | 39.3 | 52.9 | 58.0('84) |
| Philippines | 10.5 | 9.1 | 17.1 | 18.2 | 20.0 | 15.4('82) |
| <u>Agric. Exports/Total Exp.</u> | | | | | | |
| Taiwan | 91.9('52) | 67.7 | 21.4 | 16.4 | 9.2 | 6.9('83) |
| Philippines | 93.8 | 85.7 | 69.8 | 65.2 | 41.6 | 39.3('81) |
| <u>Manuf. Exports/Total Exp.</u> | | | | | | |
| Taiwan | 4.7 | 23.8 | 68.7 | 77.8 | 82.5 | 82.5 |
| Philippines | 2.3 | 3.3 | 8.0 | 22.0 | 39.5 | 46.7('81) |
| <u>Mineral Exports/Total Exp.</u> | | | | | | |
| Taiwan | 3.4('52) | 8.5 | 9.9 | 5.8 | 8.3 | 10.6('83) |
| Philippines | 3.9 | 11.0 | 22.2 | 12.8 | 18.9 | 14.0('81) |
| <u>Educational Expend/GDP</u> | | | | | | |
| Taiwan | 2.6 | 2.5 | 3.6 | 3.6 | 3.5 | 4.9('83) |
| Philippines | 2.4 | 3.0 | 2.7 | 1.6 | 1.6 | 2.0('83) |
| <u>Savings Rate</u> | | | | | | |
| Taiwan | 9.2('52) | 12.7 | 25.5 | 26.9 | 32.7 | 31.7('83) |
| Philippines | 15.7 | 11.1 | 12.1 | 16.0 | 16.2 | 15.6('84) |

Sources:

UNCTAD, Yearbook of Trade and Development Statistics

The Trade of China

Statistical Yearbook of the Republic of China, (Taipei: Directorate General of Budget, Accounting and Statistics, various years).

The Philippine Statistical Yearbook, various years.

The Central Bank of the Philippines, various years.

Philippine ratio remained broadly constant until 1980, by which time it was about half the Taiwan rate. The ratio of educational expenditures to GDP - the same in the two countries in 1950 - rose in Taiwan and fell in the Philippines, so that the Philippine rate was less than half that of Taiwan by the end of the period. Taiwan's policy of export-oriented industrialization is indicated by the sharp rise in the total export to GDP ratio and the displacement of agricultural and mineral exports by manufactured exports; in the Philippines, there was some change in this direction too, but far less pronounced.

Most of these aggregate differences are well known. However, the very substantial divergence in the behavior of the rural sector, especially in rural industrialization, is less widely recognized. A large part of Taiwan's successful industrialization effort was located in the rural areas. Employment in rural manufacturing increased from 47% to 57% of the total and that in rural services from 47% to 57% between 1956 and 1966. The proportion of industrial establishments in the five largest cities of Taiwan, which amounted to only 34% in 1951, remained virtually unchanged by 1971, and the proportion of persons employed in manufacturing in the cities actually declined, from 43% to 37% between 1956 and 1966, a period of rapid industrial expansion. Employment in urban services as a proportion of total services employment also declined, from 47% to 34%.

Employment in manufacturing in the rural areas of Taiwan grew at a rate of 10.3% p.a. between 1966 and 1980, while in the Philippines it grew at a mere 0.6% p.a. from 1967 to 1975. Indeed, in Taiwan rural manufacturing employment grew at a higher rate than urban, where the growth rate was 9.4% p.a. In the Philippines the opposite was true, with the urban sector growing at an annual rate of 1.4% p.a. (see Tables IV.4A and IV.4B).

Table IV.4A

Annual Growth Rates of Employment by Major Industry Group: Taiwan

| 1956-1966 | <u>Rural</u> | <u>Urban</u> |
|--------------------------------|--------------|--------------|
| Agriculture, forestry, fishery | 0.82 | (0.20) |
| Mining | 2.38 | 3.89 |
| Manufacturing | 4.99 | 4.94 |
| Utilities | 5.90 | 7.18 |
| Construction | 3.71 | 5.15 |
| Commerce | 6.89 | 7.42 |
| Transport and communication | 4.49 | 4.29 |
| Services | 10.24 | 9.09 |
| TOTAL | 3.79 | 5.68 |
| 1966-1980 | | |
| Agriculture, forestry, fishery | (1.25) | (0.42) |
| Mining | 0.34 | (5.16) |
| Manufacturing | 10.28 | 9.40 |
| Utilities | 5.42 | 5.25 |
| Construction | 13.32 | 10.31 |
| Commerce | 3.94 | 6.75 |
| Transport and communication | 6.16 | 6.34 |
| Services | 2.34 | 3.34 |
| TOTAL | 2.13 | 5.09 |

Source: Shih, Jhi-Tzeng, "Decentralized Industrialization and Rural Non-Farm Employment in Taiwan," Table 1 in Diversification of the Rural Economy, edited by G. Ahmad and F. Chowdhury, Association of Development Research and Training Institutes of Asia and the Pacific, Kuala Lumpur, Malaysia, 1985 (figures in parentheses are negative values).

TABLE IV.4B

Annual Growth Rates of Employment by Major Industry Group: The Philippines

| | <u>Rural</u> | <u>Urban</u> |
|--------------------------------|--------------|--------------|
| 1967-1975 | | |
| Agriculture, forestry, fishing | 1.68 | (1.34) |
| Mining | 4.56 | 9.05 |
| Manufacturing | 0.57 | 1.42 |
| Electricity | 33.35 | 15.87 |
| Construction | 5.07 | 2.79 |
| Commerce | 3.38 | 2.85 |
| Transportation | 7.72 | 2.48 |
| Government | 8.73 | 3.77 |
| Domestic services | 3.56 | 2.66 |
| Personal services | 4.04 | 1.32 |
| TOTAL | 1.96 | 1.48 |
| 1975-1988 | | |
| Agriculture, forestry, fishing | 1.63 | 5.76 |
| Mining | 11.32 | 8.82 |
| Manufacturing | 2.03 | 4.81 |
| Electricity | 9.09 | 9.57 |
| Construction | 5.14 | 7.38 |
| Commerce | 5.94 | 5.71 |
| Transportation | 4.86 | 7.49 |
| Government | n.a. | n.a. |
| Domestic services | 6.67 | 5.68 |
| Personal services | n.a. | n.a. |
| TOTAL | 2.66 | 5.51 |

Source: National Statistical Office, Labor Force Surveys, various years

By 1970, rural underemployment had all but disappeared in Taiwan, and unskilled wages, which had remained virtually constant between 1950 and 1970, began to rise with the advent of labor shortage. In the Philippines, in contrast, real wages went on falling, as the reserve army of the underemployed continued to swell, with additions to the labor force arising from population growth outpacing labor absorption.

Within the rural sector of Taiwan, there was a remarkable shift in the division of labor from agriculture to non-agriculture: the percentage of rural workers in non-agricultural activities, which was 20.1% in 1956, had increased to 47.0% by 1966 and to 66.9% by 1980. In contrast, in the Philippines the change was much less dramatic, with non-agricultural employment accounting for 24.7% of total rural employment in 1967, 32.1% in 1971 and 33.1% in 1985 (Tables IV.5A and IV.5B).

This impressive shift towards non-agricultural activities in Taiwan's rural sector can also be seen in the income data for rural households. The percentage of total rural household income earned from RNA activities increased from 25% in 1965 to 43% in 1975 and more than 60% in 1980. In the Philippines, the figure increased from 45.2% to 55% between 1965 and 1971, but declined again to 44.3% in 1985 (Table IV.6).

Philippine industry appears comparatively more rural, according to the coefficient of localization (Table IV.7), which shows the proportion of rural employment in total employment, although the trend has been mainly downwards in the Philippines in recent years, and upwards in Taiwan. The contrast in employment and income growth suggests that in the Philippines a greater proportion of rural industry and services consists of relatively low productivity activities characteristic of Z_T .

The Taiwan pattern of industrialization thus completely avoided the demise of Z-activities predicted by H-R. The rapid growth of rural industry indicates a successful transformation of rural non-agricultural activities

TABLE IV.5A

DISTRIBUTION OF RURAL LABOR FORCE BY AGRICULTURAL AND NON-AGRICULTURAL
ACTIVITIES: TAIWAN
(PERCENT DISTRIBUTION)

| | <u>Agricultural</u> | <u>Non-Agricultural</u> |
|------|---------------------|-------------------------|
| 1956 | 70.91 | 29.09 |
| 1966 | 53.02 | 46.98 |
| 1980 | 33.13 | 66.87 |

Source: Shih, Jhi-Tzeng, "Decentralized Industrialization and Rural Non-Farm Employment in Taiwan." op. cit. Table 2.

TABLE IV.5B

DISTRIBUTION OF RURAL LABOR FORCE BY AGRICULTURAL AND NON-AGRICULTURAL
ACTIVITIES: PHILIPPINES

(PERCENT DISTRIBUTION)

| | | |
|-------------------------|------|------|
| 1967 (May) | 75.3 | 24.7 |
| 1971 (May) | 67.9 | 32.1 |
| 1975 (Avg. Feb. & Aug.) | 73.6 | 26.4 |
| 1985 (2nd Q) | 66.9 | 33.1 |
| 1988 (2nd Q) | 64.5 | 35.5 |

Sources: Labor Force, National Sample Survey of Households: May 1967, May 1971, Feb. & Aug. 1975 (BCS).
Labor Force, Integrated Survey of Households: 2nd Quarter 1985 & 1988, (NSO).

TABLE IV.6
PERCENTAGE SHARE OF VARIOUS SOURCES OF INCOME
(ALL RURAL HOUSEHOLDS)

PHILIPPINES

| <u>Type of Income</u> | <u>1965</u> | <u>1971</u> | <u>1985</u> |
|------------------------|-------------|-------------|-------------|
| Rural Non-Agricultural | 45.2 | 55.0 | 44.3 |
| Rural Agricultural | 54.8 | 45.0 | 55.7 |

Source: Family Income and Expenditure Surveys, Series No. 22 and 34

TAIWAN

| <u>Type of Income</u> | <u>1962</u> | <u>1975</u> | <u>1980</u> |
|------------------------|-------------|-------------|-------------|
| Rural Non-Agricultural | 25% | 43% | 60% |
| Rural Agricultural | 75% | 57% | 40% |

Sources: Ho, Samuel P.S., "Decentralized Industrialization and Rural Development: Evidence from Taiwan", Economic Development and Cultural Change 1979, pg. 77. DGBAS

Table IV.7
Coefficient of Localization
by Major Light Industry

Philippines

| | <u>1970</u> | <u>1975</u> |
|--------------------------|-------------|-------------|
| Food | 44.2 | 40.4 |
| Beverages | 47.4 | 32.9 |
| Textiles | 79.4 | 61.3 |
| Foot-Wear/Apparel | 59.5 | 46.6 |
| Leather and Fur Products | 36.8 | 20.0 |
| Rubber Products | 19.4 | 23.6 |
| Wood Products | 74.5 | 64.9 |

Taiwan

| | <u>1971</u> | <u>1976</u> |
|-----------------------|-------------|-------------|
| Food | 34.0 | 37.7 |
| Beverages | 74.6 | 73.8 |
| Textiles | 29.9 | 35.9 |
| Garments/Apparel | 22.0 | 25.5 |
| Leather, Fur Products | 36.0 | 38.1 |
| Rubber Products | 38.4 | 49.5 |
| Wood Products | 46.4 | 54.3 |

Sources: Fabella op. cit.
Shih op. cit.

into Z_M , which is related to both macro and sectoral policies. High growth of agricultural output and labor productivity were conducive to high linkages with non-agriculture. The expansion of non-agricultural exports, also induced by favorable macro-policies, further supported the growth of rural industries. On the one hand, a significant proportion of these exports consisted of processed non-traditional crops - canned mushrooms and asparagus, for example. On the other hand, many labor-intensive exports were conveniently located where the labor was to be found, i.e in the rural areas. Moreover, the export processing zones and bonded factories, increasingly supported by indigenous capital, were extremely successful in linking large-scale (often urban) with small-scale (often rural) industry, thus facilitating a new mode of export-oriented industrial production. But, of course, all this would not have occurred without the favorable supply side conditions brought about by policies towards rural infrastructure, technology diffusion, and a high degree of rural entrepreneurial response, which must be at least partly attributed to the initial human capital conditions and the educational policies followed.

In contrast, Philippine policy encouraged the development of U-industry, while there were few efforts to modernize the Z sector; consequently U-displacement occurred, as in the unfavorable archetype. Most of the efforts to encourage non-traditional exports through export processing zones - with the notable exception of the treatment of garments and electronics - were located at a distance from sources of labor, required heavy infrastructural investments, and led to capital-intensive, uneconomic, MNC-dominated operations, which by and large had little impact on rural industry or agriculture (for example the Bataan Export Processing Zone).

In one respect, Philippine policy did not fully reflect the unfavorable archetype: there was a consistent effort to support innovation in cereal producing agriculture, with quite high levels of investment in irrigation and increased use of modern inputs. The result was a rate of growth of

agricultural output parallel to that of Taiwan, although the rate of growth of labor productivity was much less. This performance undoubtedly offered some opportunity to Z-activities via rural linkages as compared with countries where agricultural performance was much weaker. While this undoubtedly helps explain why non-agricultural employment and output did not fall in the Philippines, as full U-displacement would suggest, it was also not translated effectively into a dynamic Z-sector for a number of reasons. First, because of the unequal distribution of land and the labor surplus situation, the increase in output was unequally distributed, leading to relatively low local linkages; second, both macro and sectoral policies encouraged the use of large-scale tractors in the Philippines, as compared with the sort of low-level mechanization which was adopted in Taiwan, which could have been supplied by local industries, as indeed occurred in Taiwan; third, lower increases in agricultural labor productivity led to a lower contribution in the form of saving and man-power to non-agriculture; fourth, infrastructural policies were biased against the rural industrialists, thus handicapping producers in supplying modern products at competitive prices to meet the demands arising from agricultural expansion.

V. Micro Evidence from a Philippine Village

A study of rural linkages in a Philippine village tells a very similar story.¹⁸ In a rice farming village in Laguna, particularly favored by its proximity to IRRI and the volume of infrastructural investments, we found evidence of rapid rate of innovation in rice production (A_D), the dominant occupation. Paddy yields per hectare rose by 60% between 1966 and 1986, but the increase in the farming population exceeded the increase in yields and rice output per capita fell significantly. This rise in incomes provided favorable conditions for the development of rural linkages, offsetting the unfavorable overall macro-environment recorded above.

Rural linkages, of course, encompass not only the interactions between agriculture and non-agriculture within the village but also between the village and nearby towns. We shall briefly review the linkages observed in the area, first from the perspective of the demand and then the supply side.

Rural Demand Linkages

a) Forward consumption linkages, as expected, represent the dominant type of linkage in evidence. Consumption rose faster than village incomes between 1975-76 and 1981-82 and data (Table V.1) indicates an increasing proportion going to purchased commodities. Non-food purchases, which, of course, constitute the strongest type of non-agricultural linkage, rose from 31% to 39% of total consumption, with total village non-food consumption rising by 66% over the same period. Interviews with villagers in 1989 indicated large variations in the type of consumer goods purchased by households of different incomes. The poor landless family typically spent over half its income on food and education; its non-food purchases consisted mainly of clothing, cooking pots, essential items for school and a limited amount of furniture. In contrast, prosperous large farmers (who often had children abroad sending remittances) owned most of the consumer durables familiar in developed countries, e.g., T.V.'s, stereos, electric fans, etc.¹⁹

For the village as a whole, the ownership of consumer durables increased substantially between 1974 and 1980. In 1974 112 major consumer durable goods could be identified in the village, while by 1980 there were 200.

TABLE V.1

Consumption Patterns, '75/6 and '81/2

% of consumption expenditure

| spent on: | <u>'75/'76</u> | <u>'81/'82</u> | | | |
|--------------------------|----------------|----------------|--------------|--------------|-----------------|
| | <u>All</u> | <u>All</u> | <u>Large</u> | <u>Small</u> | <u>Landless</u> |
| Home consumption of | | | | | |
| Ag. products | 24.4 | 26.4 | 14.4 | 28.3 | 17.3 |
| Food purchases | 35.4 | 33.1 | 28.7 | 36.6 | 39.2 |
| Non-food purchases | 31.2 | 39.8 | 46.5 | 29.5 | 38.6 |
| Education | 9.1 | 8.3 | 10.3 | 6.1 | 4.9 |
| Savings as a % of income | 19.0 | 4.0 | 7.6 | 8.3 | -11.7 |

Source: Sample surveys

b) Forward production linkages, are a direct function of the level of farm output. Given the steady rise in rice yields a corresponding increase in the demand for rice milling could be noticed. This was the chief forward linkage activity encountered.

c) Backward production linkages take the form of increasing demand for agricultural inputs, partly in response to changes in agricultural technology. As Table V.2 indicates, the village experienced substantial increases in mechanization: in 1987 villagers owned 175 machines or implements, compared with 59 in 1966. Such increased mechanization also clearly created increased demand for local servicing and repair facilities.

All in all, it is clear that the demand for linked activities rose faster than the 2.5% annual growth in village income. A high proportion of this linked demand, of course, went to activities outside the village. Thus in 1981-82, 81% of consumer goods purchases, 75% of capital goods and 72% of

agricultural inputs came from outside the village. There was some fall in the significance of non-village supplies for consumption and some rise for non-village agricultural inputs between 1975-76 and 1981-82.

Rural Supply Linkages

The evidence suggests that this, locally favorable, demand situation outweighed the negative effects on this area of the overall macro-environment as far as Z-goods are concerned; Z activities expanded, accompanied by a continued transformation from Z_T to Z_M .

a) Village Non-Agricultural Activities

In the village, the importance of non-agricultural activity as a source of income and employment increased substantially between 1974 and 1987, rising from 8.1% of total village income in 1974 to 36% in 1987 (see Table V.3).

TABLE V.2

Holdings of Productive Farm Assets in the East Laguna Village

| | <u>TOTAL</u> | | <u>LANDED FARMERS</u> | | <u>LANDLESS FARMERS</u> | |
|-------------------|--------------|------|-----------------------|------|-------------------------|------|
| | 1966 | 1987 | 1966 | 1987 | 1966 | 1987 |
| Hand tractors | 14 | 21 | 14 | 21 | 0 | 0 |
| Threshers | 0 | 7 | 0 | 7 | 0 | 0 |
| Chemical sprayers | 0 | 21 | 0 | 21 | 0 | 0 |
| Rotary weeders | 45 | 126 | 45 | 55 | 0 | 71 |

Source: Hayami et al, 1989, Table 10.

TABLE V.3

Sources of Total Income in Village (% of Total)

| | 1974 | | | 1987 | | |
|----------------|------|-----------|---------|------|-----------|---------|
| | Rice | Other Ag. | Non-Ag. | Rice | Other Ag. | Non-Ag. |
| All households | 77.8 | 14.1 | 8.1 | 50.1 | 13.9 | 36.0 |
| Large farmers | 86.3 | 6.9 | 6.8 | 53.1 | 22.9 | 24.0 |
| Small farmers | 74.5 | 18.0 | 7.5 | 51.5 | 13.5 | 35.0 |
| Landless | 58.8 | 28.5 | 12.7 | 45.9 | 9.1 | 45.0 |

Source: Hayami et. al., op. cit., 1989, Table 21.

This increase was shared by each class of household. Seven percent of those with an occupation in 1974 were working outside agriculture as their major occupation. This had risen to 12% by 1987. Changes in the shares of output, value added and labor allocation were all in the direction of a fall in rice, a rise in "other agriculture" and a sharp rise in non-agricultural activities (see Table V.4).

TABLE V.4

Shares in Income, Output, Employment

(% of total)

| | 1975/6 | | | 1981/2 | | |
|-------------|--------|-----------|---------|--------|-----------|---------|
| | Rice | Other Ag. | Non-Ag. | Rice | Other Ag. | Non-Ag. |
| Income | 42.6 | 14.5 | 42.9 | 24.9 | 18.0 | 57.1 |
| Output | 81.1 | 18.3 | 0.7 | 62.5 | 28.7 | 8.8 |
| Value-added | 87.3 | 12.2 | 0.6 | 74.3 | 25.7 | 4.1 |
| Labor days | 76.6 | 15.8 | 7.6 | 43.2 | 24.4 | 32.4 |

Source: Sample surveys

Data for the entire village for both 1974 and 1987 (see Table V.3) indicate that non-agricultural sources of income were proportionately most important for the landless and least important for the large farmers. Non-agricultural income thus had an equalizing effect on village income distribution and its growth helped offset growing inequality in agricultural incomes.

A breakdown of village agricultural activities by occupation reveals that the variety of activities performed has widened, with Z_M type activities becoming increasingly important. For example, mechanized rice mills, tricycles and jeepney operators, plumbing, knitting and garment making for export were all recorded Z_M type village activities. But many village activities, including rice-cake making, carpentry and sari-sari stores retained their pure Z_T characteristics. They continued to use traditional technology with very low capitalization, employing only family members and producing traditional products whose markets were being eroded by rising incomes.

b) Non-Agricultural Activities in the Local Towns

In interviews, the villagers stated that they met their day-to-day requirements in a local town (T), 2 km distant, which they visited on average three or four times a week. Most food items were bought there or within the village. Bigger purchases, i.e. clothing, furniture, consumer durables, came from the larger but more distant center (C) which villagers visited two or three times a month. Inputs for agriculture (seeds, fertilizer, machinery and machinery repair) came from both T and C. T represented the chief outlet for rice sold and processed outside the village. Visits to Manila were rare, four times a year for the farming households and entirely absent for the landless.

In T, RNA activities included both modern and traditional retailing, gasoline stations, rice milling, auto repair and farm machinery. These activities were linked directly to farming needs, consisting of the sale of

consumer goods to local farmers, rice processing and supply and repair of agricultural machinery as well as supply of other agricultural inputs.

In C, RNA included services, i.e. gas stations, barber shops, beauty salons (including a slimming parlor), auto and farm machinery, video and TV repair, embroidery and garment making, plus shoe and furniture manufacturing, bicycle repair and assembly, battery assembly, iron works, coconut oil manufacturing and cheese making. While local linked activities predominated, there were also sales to Manila and abroad, e.g. dressmaking, ironworks, furniture and coconut oil. The majority of such RNA activities were of the Z_M type, i.e. using improved technology with increasing capitalization, employing more than five non-family workers. These Z_M activities were apparently all "normal goods" whose markets increased as incomes rose. Very few of these establishments, however, had access to formal credit institutions but were financed from own or family savings, an indication of the relatively unfavorable policy setting for Z_M at the macro level.

c) Z Displacement

There was evidence of displacement of Z_T in both the village and the two towns, both by Manila (i.e. U-displacement) and by local Z_M activities. An example of U-displacement was traditional shoe manufacturing which had been replaced by a Manila product, while local cheesemaking was being similarly eroded by a brand name mass-produced Manila product. Some village Z_T activities were, however, also gradually being displaced by Z_M from local towns; for example, village carpenters were being replaced by town-based carpenters and by local iron works among richer farmers. The market for village rice mills was being eroded by the rice mill in T which had superior characteristics.

Most respondents noted that markets were the most important constraint in limiting expansion - except for those exporting some of their output. The evidence, therefore, suggests that U-displacement has been preventing the

further expansion of Z_M . On the one hand, except for exports, there is an overall market constraint; moreover as farmers' incomes rise, the urban industry-oriented macro-policies encourage farmers to buy items produced in Manila or abroad, including clothing, furniture, electrical and electronic consumer durables as well as farm machinery. Of these, only clothing, furniture and some farm machinery were produced locally. The rest came from Manila or abroad, exhibiting very substantial U-displacement of potential local RNA. Nevertheless we observed a substantial number of dynamic Z_M enterprises supplying the local markets, Manila and even foreign markets. This type of RNA activity can be assumed to be dramatically expandable, given a more favorable macro environment.

In this particular favored locale in the Philippines a relatively dynamic agriculture has led to a quite rapid expansion of demand for non-agricultural products. As a consequence, the significance of RNA as a source of income has increased. Development of Z_M has permitted balanced growth in this area contrary to the pessimistic H-R predictions. Moreover, had there been a more favorable macro-environment, a much more dynamic interaction between the two sectors would have developed.

VI. CONCLUSIONS

This paper has aimed to show the potentially important role of rural non-agricultural activity as part of a broadly based development strategy. First, from a theoretical perspective, we have shown that the pessimistic conclusions emanating from the seminal Hymer-Resnick model depend on a restrictive set of assumptions which may not apply, either during the colonial period or after independence. Relaxing these assumptions - in particular allowing for a dynamic food producing agricultural sector and for the modernization of the Z-goods sector - leads to a very different scenario from that of Hymer and Resnick. While the danger of inadequate articulation and

linkages between the various sectors is real, so is the potential for the generation of balanced growth in the rural areas, complementing efficient urban industrialization.

According to our development of the Hymer-Resnick model, macro and sectoral policies determine whether an economy will follow a balanced growth pattern, in which there is a vigorous Z-sector, or whether the Z-sector will be displaced by imported or domestic urban products. The paper showed that in both the colonial and post-independence periods, the Taiwanese case closely approximated the favorable archetype, while the Philippines more nearly illustrated the unfavorable case, for both periods. Marked differences between the two economies were associated with divergencies in both macro and sectoral policies. However, a village study in one of the more favorable locations in the Philippines showed that a dynamic domestic agriculture can partly offset generally unfavorable macro and sectoral policies in permitting some expansion of Z-activities. The comparison between the Philippines and Taiwan also demonstrated how a dynamic Z-goods sector can lead to a broader spread of employment and incomes, with a more egalitarian income distribution and the elimination of rural underemployment.

The development literature generally has neglected the importance of the spatial dimension of development and the mobilization of the rural economy as vital ingredients of success, focussing mainly on foreign trade and capital related issues. However, as we have shown in the discussion of the favorable archetype, appropriate policies affecting not only the trade orientation of the industrial sector but also the rural economy may be necessary to bring about balanced and equitable growth for the system as a whole.

FOOTNOTES

- 1 See Hymer and Resnick, 1969; Resnick, 1970.
- 2 See also Bautista, 1971, and Fabella, 1990, who have developed models challenging the inevitability of the decline of rural industry as predicted by Hymer and Resnick.
- 3 See Ranis, forthcoming and Ranis, Stewart and Reyes, 1990.
- 4 An "improvement" of the terms of trade can also be interpreted as new incentive goods being made available and/or colonial regulations being imposed to buy the metropolitan power's goods.
- 5 Fabella, op cit makes a similar distinction, contrasting activities that have "a competitive and dynamic nature that gets sharpened with the opening of trade" with those "that survive only under protective isolation."
- 6 For further discussion of rural linkages and some empirical evidence on their magnitude, see Ranis, Stewart and Reyes, 1990.
- 7 See J. Spraos, 1980; also E. Grilli and M. Chang Yang, 1988.
- 8 See Robert Baldwin (1966) who long ago pointed out the potential importance of the precise commodity composition of the A_E sector.
- 9 For simplicity, we assume all the additional resources go into Z-goods activities. The production possibility curve could, of course, also shift outward along the OA_E^0 axis. This would cause a different shift of the consumption possibility curve, less favorable to the development of Z-goods activities.
- 10 See also Fabella op. cit. who suggests that the relative importance of Z_M increases as agricultural incomes rise, in contrast to Z_T whose relative importance is larger when agricultural incomes stagnate.
- 11 For evidence, see Steve Haggblade et al., 1986; also F. Stewart, 1987.
- 12 It is, of course, possible that some export agriculture has some of these characteristics, e.g. in small-holder coffee production.
- 13 The slope of the $M_k^0 U^0$ line in quadrant III of Diagram 3 is likely to be of less than 45° , depending on the value of the capital-output ratio.
- 14 This policy was changed after 1930 when preparation for war led Japan to consider Taiwan as an alternative location for more diversified, including heavy, industry.
- 15 Resnick, 1970, op. cit.
- 16 Burma and Thailand were the other two.
- 17 See Sharing in Development, ILO 1973; World Bank, 1989

- 18 Our focus represents a minor supplement to Y. Hayami, 1978, Anatomy of a Peasant Economy, Los Banos, the Philippines: International Rice Research Institute, and Y. Hayami, M. Kikuchi, L. Bambo and E. Marciano, 1989, "Transformation of a Laguna Village" Agricultural Economics Paper, 89-17, International Rice Research Institute. We are extremely grateful to Professors Hayami and Kikuchi for allowing us to use some of their unpublished data, and especially to Professor Hayami for accompanying us to the village when conducting our supplementary survey in August, 1989.
- 19 Following the classification adopted by Hayami et. al., "large" farmers are defined as cultivating 2 or more Has., and "small" farmers as below 2 Has.

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