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A SOCIO-ECONOMIC INTERPRETATION OF THE DECLINE OF RURAL INDUSTRY UNDER EXPORT EXPANSION: A COMPARISON AMONG BURMA, PHILIPPINES AND THAILAND, 1870-1938.

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A Socio-economic Interpretation of the Decline of Rural Industry Under Export Expansion: A Comparison among Burma, Philippines and Thailand, 1870-1938.*

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From the opening of the Suez canal to the outbreak of the Second World War, the countries of Southeast Asia underwent a rapid expansion of external trade reflected internally by a reallocation of resources from those activities linked historically to an agrarian type of society to those associated with an expanding commercial economy. The flourishing of the capitalistic mode of production in the West had as its dual the robust expansion of a commercial mode in the East. The institutional environment was that of colonialism and the economic result was specialized export agriculture producing a tradable surplus for the manufactures of the industrial world.

This paper endeavours to explain the economic and social forces underlying the economic transformation of three Southeast Asian countries from agrarian societies to commercial ones. In particular, a model will be used to explore this historic behavior over the period 1870 to 1938 for Burma, the Philippines, and Thailand. It is also suggested that the varying economic consequences of the model were dependent on the respective

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pre-colonial history, the type of colonial or governmental rule, and the factor intensities of the relevant export crops.

The model focuses on two types of labor activity in an agrarian economy, the effort devoted to the production and cultivation of crops and the time spent on a multitude of home or artisan handicraft and service activities such as the spinning and weaving of cloth, the processing and milling of rice, the manufacture of assorted implements, the provision of transportation and housing, and so forth. For simplicity, these non-agricultural activities whether carried on in the peasant home or by artisans in the village will be denoted by Z.[1]

A complex picture of agrarian life emerges once we admit the possibility of other necessary peasant tasks besides just the growing of food. Of course, even within food production, one should stress the variety of crops cultivated with varying production processes and different needs for land and labor. For example, increased specialization in a basically mono-crop (rice) economy as in Burma and Thailand had different repercussions on the native society as compared to the more diversified Philippine expansion of sugar, copra, and tobacco for export and rice for home consumption. The Philippine case required a somewhat more complex

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[1] A formal model of an agrarian economy incorporating the production of food and these Z goods has been formulated by S. Hymer and S. Resnick, "A Model of An Agrarian Economy with Non-Agricultural Activities" AER, forthcoming. Some of the results of that work will be used in this paper.

reallocation of labor as well as the introduction of a relatively capital intensive sector (in sugar production and milling).

Within the framework of this model, one visualizes the peasant prior to the changes brought on by the commercial revolution as being concerned with the provision of food and Z goods for his family. The land was used intensively enough to supply a more or less adequate diet and a simple division of labor was relied upon resting on a personalized society based upon customary obligations. Often, for example, certain Z activities were solely the province of women as in cloth making or rice processing. We have then the image of more or less self-sufficient units where life was centered upon the family or villages upheld by traditions and customs. Often the Z good and the activity that gave rise to it were both interwoven with the social structure so that the continued production of Z goods was as necessary to the traditional social organization as the continuity of the latter was to the former. And a deterioration in one implied a corresponding effect on the other.[2]

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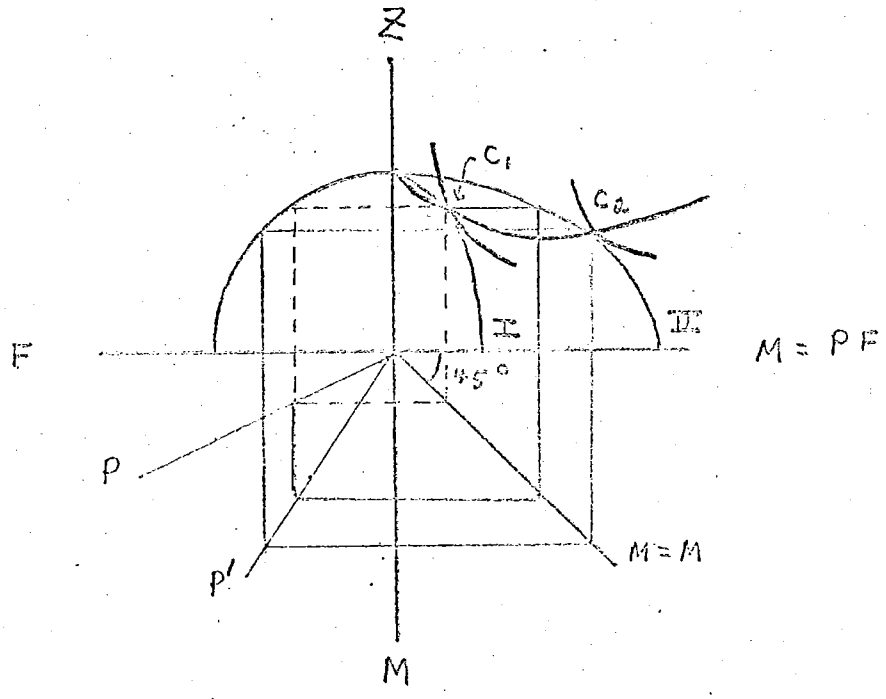
[2]The writings of anthropologists on so-called peasant economies are vast and much attention has been given to "traditional production." This paper makes no endeavor to review this literature although it should be pointed out that as far as the author knows, few, if any, models of change have been presented. Nevertheless, the following two quotes illustrate what may be an appropriate view of the structural characteristics of a peasant economy in terms of our model:

"The income-creating process is itself part and parcel of the income it yields: and the results of the process cannot be abstracted from the process itself," Frankel, S.H., The Economic Impact on Underdeveloped Societies, 1955.

"In primitive communities, the individual as an economic factor is personalized, not anonymous. He tends to hold his economic position in virtue of his social position. Hence to displace him economically means a social disturbance." Firth, R., The Elements of Social Organization, 1951.

Exploration of The Model

The process of reallocating work effort and adjusting consumption within the agrarian economy in response to increased opportunities to trade can be illustrated in the following diagram:



In the second quadrant, the production possibilities curve between Z and F is shown where F is the agricultural good produced and Z is defined as before.[3] The third quadrant indicates the given terms of trade between food and imported manufactures, M, where $P = P_F/P_M$. Assuming then that all F is sold on the open market for M at the given P, points can be chosen on the price line which, in combination with the corresponding points in

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[3] It is assumed that Z and F are substitutes in production in the long run. For a defense of this position, see Hymer and Resnick, op. cit.

the 2nd quadrant, will provide the consumption possibilities schedule in the first quadrant, denoted by I. Consumption takes places at the assumed position C_1, the tangency of the community indifference curve, U (Z, M) and the consumption possibilities curve. The simplest model thus consists of three goods, one which is produced but not consumed (F); one which is consumed but not produced (M); one which is consumed and produced but not traded (Z).

Obviously, not all of F is exported. The agrarian economy retains a portion of its agricultural output for own consumption and focus is then on the generation of a marketable surplus. For the rice exporting countries, Thailand exported about 5% of total production in 1850 and 50% in 1907-09; and from 1907 to 1940, 40 to 50% was exported;[4] Burma exported about 62% in 1875 and about 58% from 1900 to 1940.[5] The Philippines was a net rice importer from 1870 on, although rice imports decreased monitonically from 1902 to 1938. The principal exports of sugar, abaca and coconuts averaged from 50% to 70% of total production from 1902 to 1938.[6]

The model should be modified to incorporate this effect of some F consumed but the qualitative results of a change in P on production and consumption would be similar. Basically, an increase in P to P' shifts

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[4]Ingram, Economic Change in Thailand Since 1850, p. 52.

[5]Hlaing, Aye, "Trends of Economic Growth and Income Distribution in Burma, 1870-1940" JBRS, June 1964.

[6]Resnick, Economic Development of the Philippines (in progress), worksheets.

the consumption possibilities curve to position II and the consumption point to C_2. By varying P, a U-shaped offer curve can be derived as in quadrant I. The shape of the curve implies that an increase in P at first leads to an increase in F sold on the open market, but eventually a decrease as the supply curve turns back.

The reason for this behavior is that two effects are at work: a rise in P means that M goods become cheaper relative to Z and this encourages the agrarian economy to substitute M for Z in consumption. However, the increase in P also implies an increase in income to the agrarian economy, and this may lead it to spend a higher fraction of its income on Z. This is the usual result of a substitution and income effect.

If Z is an inferior good so that the income effect is negative, and if the income effect takes on greater importance as the agrarian economy specializes in export production, then supply elasticity will increase as price increases and the offer curve will not bend backward. If some F is consumed within the economy, then the model is somewhat more complicated (in terms of substitution effects) but, in general, the income effect, because it is weighted by the marketable surplus, becomes more important as specialization increases, and tends, as in the previous case, to outweigh the substitution effect.

The inferiority of Z goods emerges then as an important characteristic of the model. The empirical evidence of this paper suggests that as the opportunities to trade were expanded, resources were reallocated away from

Z to increased crop production and consumption towards imported manufactures. This type of behavior seems to be consistent with the implications of the model.

Nonetheless, one must be careful in forming welfare judgments on this process. It is true that there are a number of reasons for suggesting that Z goods are likely to be inferior and that, therefore, high responsiveness is to be expected. Historically, the trade in textiles and implements provide classic examples of superior M goods possessing all the attributes of traditional Z goods plus additional ones of color and durability as in cloth and improved techniques as in tools and weapons. Another important example is provided by the substitution of processed food for the arduous task of preparing raw food in the household. However, in some cases, the manufactured good may satisfy fewer attributes than the Z good since, for example, the imported item may sacrifice certain local artistic, religious, or cultural characteristics. The degree of substitutability thus obviously depends on the level of income and cultural patterns. Conversely, this implies that a breakdown of the traditional values of an agrarian society and the creation of wants favoring M goods will tend to increase the marketable surplus.

The costs of this complex process are, however, not negligible. This will clearly be seen in the following sections as we review the socio-economic events in the three countries. For by displacing Z goods and traditional activities, an agrarian society is fragmented. But the

relevant question concerns the type of institutional environment which replaced the agrarian life that had existed for so many years, and the opportunity cost of not allowing these countries to develop their indigenous technology and institutions without foreign influence.

Economic Life Prior to 1870

Although economic life centered on the village, there is ample evidence for Burma, Thailand and even the Philippines of some engagement in both short and long distance trade prior to 1870. For example, Burma had a somewhat complex inter-village and regional trade of the barter type consisting of specific textiles, paper products, pottery, tools, cart wheels, mats, fishing nets, silver work, and a considerable number of other products some of a highly artistic nature (as in carvings of wood, ivory and silver).[7] There was also trade between Upper and Lower Burma where milled rice, salt, and fish as well as re-exports of Indian and British manufactures were sent by Lower Burma in exchange for Upper Burma's paper, cotton and silk goods, lacquer-ware, metal products,

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[7]For a description of village life and the intricate trade among villages, see Furnivall, An Introduction to the Political Economy of Burma, 1957. Crawford, J., Journal of an Embassy from the Governor-General to the Court of Asia in 1827 (1829). Andrus, J., Burmese Economic Life, 1957. U Tun Wai, Economic Development of Burma from 1800 to 1940.

etc.[8]

There was then some specialization in villages and even between the two regions (in agriculture, rice was grown throughout the kingdom but Upper Burma produced maize, tobacco and wheat while Lower Burma fruit, sugar, indigo, and some cotton). One author in describing the relative importance of agriculture and industry wrote the following: "Thus taking the economy as a whole, we can say that agriculture and industry were of equal importance with a slight margin in favor of industry."[9] Nonetheless, one should not infer from this description of internal trade and the implied specialized production that the rich variety of goods exchanged corresponded to a high volume of commodity trade. Reliance was on fairs and bazaars and trade was probably of the "peddling type" where distances were constrained to a radius of 5 to 50 miles.[10] The magnitude of trade was probably small because of its high cost per unit due to the very labor intensive nature of transportation. Although

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[8]Wai, op. cit., p. 29, summarizes the relative importance of Upper and Lower Burma as follows: "...As far as population was concerned we noted that Upper Burma had the major part of the population... Lower Burma had the oil and mining industries. Lower Burma was more productive in the cultivation of rice, but as far as technology was concerned, Upper Burma was more advanced."

[9]Wai, Ibid., p. 29.

[10]Furnivall, op. cit., pp. 37-38.

markets existed, they were no doubt underdeveloped in nature.[11]

For centuries, external trade existed between China and Burma, and there was also trade with India and, from the 16th century, there were contacts with the West.[12] Much of this foreign trade was of high value but low volume, a typical pattern in pre-Western Southeast Asia. Here it is interesting to note that the Kings of Burma attempted to prohibit the export of precious metals and rice from Burmese ports (Upper Burma was a net demander of grain and needed access to the rice of Lower Burma). In any case, there is little evidence to indicate that foreign trade was of great quantitative importance to the economy, and no trade evidence or government cognizance which indicated that the economy's comparative advantage was to be in rice production.[13]

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[11]At this time, Burma evidently did not have any significant customs barriers to internal trade. See Crawford, op. cit., p. 428. However, mention should be made of the almost constant warfare within Burma which no doubt interfered with internal trade. See, for example, Cady, J.F., A History of Modern Burma, and Hall, A History of South-East Asia.

[12]Despite the racial affinities between Burma and China, there have been over the long run closer cultural and economic ties between Burma and India.

[13]Compared to the dramatic economic events after 1870, the period prior to the opening of the Suez canal (1869) seems relatively quiet. However, Burma had been engaged in external wars for many years of her history and internal strife was not unknown. No doubt these events influenced the Court's economic policy towards trade. In addition, colonial annexation of Burma by Britain proceeded in three stages: the Anglo-Burmese wars of 1824, 1852, and 1885. Thus, although "self-sufficient village life" may have characterized the economy, political activity was in constant flux. It should be noted, however, that for the Kingdom to engage in wars, to build temples, and, in general, to maintain Court life, it had to generate

As with Burma, there is historical evidence of both internal and external trade in Thai economic history.[14] Ingram provides a succinct description of internal trade around 1850:[15]

> No doubt a considerable amount of specialization and exchange took place at the village level - people trading vegetables, or swapping fish for fruit or basketwork for cloth but this trade was largely within the selfsufficient village economy. Some regional trade took place: in the North and Northeast, itinerant caravans carried goods of high value per unit of weight to remote towns and villages; in the Central Plain, trading boats went out on canals and rivers with goods from Bangkok; and, in the South, coastal trading ships called at the peninsular ports. In addition, goods flowed to Bangkok in payment of taxes. Much of the trade of 1850 was barter, but even barter was a relatively minor part

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(and use) an agricultural surplus from someplace in the economy. We will comment on this activity on pp. 26-27.

Finally, a most interesting piece of unpublished research has been completed by Lee Badgett, a graduate student at Yale, on Burmese rice trade which indicates that rice exports were growing prior to the opening of the Suez canal; and in fact, other macro-evidence from 1855 to 1870 indicates economic activity in Lower Burma was quickening. See Badgett, L., "The Source of Export Demand, Agrarian Response, and the Burmese Rice Expansion: 1800 to 1936," unpublished paper.

[14]The export of teak provides an interesting example of trading patterns before and after 1870 for Burma and Thailand. There is little evidence that teak was an important export of Thailand in 1850 whereas at one time teak exports were more important than rice in the trade of Burma. A volume index of teak exports for Burma (1881-1885 = 100) stands at 43 in 1856-1860, 157 in 1896-1900, the peak of Burma's exports, and 149 in 1936-1940. Prior to the 1860's, 43% of teak exports went to India. With the railroad construction in India and the resulting demand for teak, this percentage rose to some 70% by the end of the 19th century.

However, British timber companies turned to Thailand as Burmese teak forests became less accessible, and a volume index for Thailand (1883-1887 = 100) stands at 230 in 1895-1899, 456 in 1905-1909, the peak of Thai exports, and 315 in 1935-1939.

See Holm, D., "A History of the Teak Industry in Thailand," unpublished paper.

[15]Ingram, J., Economic Change in Thailand Since 1850, p. 112.

of the total economic life of the people. Most families grew most of their own food, built their own homes, and made their own clothes.

Foreign trade was not unusual although after the 17th century contacts with the West were negligible until the beginning of the 19th century.[16] Once again, however, this external trade even during the early 1800's was not of quantitative importance to the Thai economy. Rice, however, does seem to have been exported periodically from Thailand from about the 17th century on. The importance of this trade can be tempered by Ingram's comment that, 'These early records indicate that the export of rice depended on the weather, the state of war or peace in Siam and the temper of the king.[17]

Perhaps the greater part of trade was with China and Burma. This is especially true for the regions which were far from Bangkok. An interesting example is provided by Upper Siam which imported silk, brass, and ponies from China: piece goods and opium from Burma; and exported hides, beeswax, and other goods in exchange.[18]

In contrast to Burma and Thailand, the Philippines up to the 16th century had not developed a similar type of Asian civilization. The complex social organization intimately associated with Buddhism and

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[16] Hall, J., Southeast Asia: Its Historical Development, Chapter 15.

[17] Ingram, op. cit., pp. 22-23.

[18] See Purcell, V., The Chinese in Southeast Asia.

the Asiatic mode of production that had evolved in Burma and Thailand was not duplicated in the Philippines. The Philippines experienced neither the richness of agrarian life nor the intervillage and regional trade of Burma and Thailand. By the end of the 15th century Islam had come to the southern regions of the country but its further penetration was halted by the arrival of Spain.

Philippine society was characterized by the existence of loose tribal associations or kinship groups led by a headman (datu). Contact among tribes seems to have existed but the geographic barrier of an island chain made economic or political relationships difficult to maintain. There did exist some external trade between Chinese merchants and the lowland society from at least 960 on but the economic influence of these early contacts was minimal. In fact, for whatever reason, the Philippines had been bypassed by the great triangular trading routes among China, India, and Southeast Asia.

One has limited information on the activity of these tribes but various sources suggest the cultivation of several crops, the weaving of cloth, the making of war implements, pottery, and mats, and the domestication of animals.[19] Some regions used relatively advanced rice

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[19] Corpuz, O.D., The Philippines, "Notes on Philippine Economic History," in Sicat (ed.), Economics and Development.
Keesing, F., The Ethnohistory of Northern Luzon.
Zaide, G., Philippine Political and Cultural History, Volume I.
de la Costa, J., Readings in Philippine History.

techniques (for the times) while others relied upon slash and burn cultivation.

Although less advanced than either Burma or Thailand in the sense of not developing a similar state of the arts, or architecture, or technology, the Philippines was by no means culturally backward. One observer writing about an important lowland region sums it up nicely: "In the middle of the sixteenth century, the institutions of Pampanga were adopted to meet the basic needs of the environment, and, in that sense, society was 'mature'. More food was produced than locally required: skills were well developed: and trade brought contact with the outside world."[20]

Beginning with Legazpi's expedition to the Philippines (1565), the native economy did not experience any dramatic economic changes under Spanish colonialism up to the late 18th century when land was cultivated to produce an exportable surplus.[21] By 1870, the Philippines, which had exported some rice, became a net importer of rice. The exports of tobacco,

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[20] Larkin, J., The Evolution of Pampangan Society: A Case Study of Social and Economic Change in the Rural Philippines, unpublished Ph.D. dissertation.

[21] One of the most interesting developments during this period was the establishment of a galleon trade between Manila and New Spain lasting from 1565 to 1815. A complete account is found in Schurz, The Manila Galleon.

Basically, Manila became a re-export center exchanging from the East Chinese goods (silks) for the Mexican silver of the West. No doubt fortunes were made as merchants were attracted to Manila and it became a great seaport. However, there were little spillover effects into the rest of the economy (although many of the galleons were built in the Philippines).

sugar, and abaca grew; foreign textiles began to supplant domestic cloth production, and the transition to a commercial economy had begun.

Relative to the commercial expansion after 1870 and especially after 1898 when American rule was established, the Philippines for some three hundred years was not commercially exploited. Nonetheless, there were significant social and political developments over these years and the agrarian society was not, in this sense, stagnant.[22] Perhaps Spain's greatest accomplishment was religious unity of the islands (with the exception of the Muslim South).[23] A curious blending of traditional Philippine life and Spanish culture resulted over the years. And after American colonialism is added to this mixture, the Philippines emerge currently as a unique society in Asia: Catholic in religion, democratic in politics, and capitalistic in production.

Politically, Spain left the heritage of caciquism in the islands. A native upper class was not swept away by Spain rather it was strengthened under the slow commercial development of the islands, and evolved into

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[22]For an excellent account of Spanish aims and accomplishments from 1565 to 1700, see Phelan, J., The Hispanization of the Philippines.

[23]The economic and social impact of Christianity via the religious order should not be underestimated. The friars as the main medium of contact between agrarian life and Hispanic culture were widely dispersed throughout the islands. Roads were built to maintain contact from parish to parish. Churches were constructed, and agricultural techniques were modified under the influence of the friars allowing the production of food surpluses to be exchanged for the services of the Church, and to meet the demands of the Manila bureaucracy.

merchant-capitalists from the middle of the 1870's to 1938.[24] This development can be contrasted with the events in Burma where under British colonialism the native aristocracy was undermined and finally fragmented.

It is interesting to note, at this point, that although foreign trade was not as important quantitatively to each of these countries as it would become after 1870, all three experienced the beginnings of export expansion prior to the opening of the Suez canal. Land under rice cultivation increased at 4.9% per year from 1855 to 1869 in Lower Burma, and the responsiveness of the peasant did not await the opening of the canal.[25] Historically, Thailand had exported rice to Asia and the rice trade did not await the Bowring treaty negotiated with Great Britain in 1855.[26] From the end of the 18th century to 1870 the Philippine economy slowly evolved into a specialized agrarian society cultivating crops for export, and the growth of external trade indirectly provided a stimulus for internal commerce.[27] It is true, however, that the magnitude of this

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[24] Resnick, S. "The Development of Philippine Capitalism," paper presented to AAS conference (1969).

[25] Badgett, L., op. cit., p. 22. This estimate challenges Furnivall's claim that the agrarian response followed the opening of the Suez canal, see Furnivall, Colonial Policy and Practice, p. 50. From 1861 to 1870, Furnivall claims that the rate of growth of land under cultivation was 2.9% but this includes total area cultivated; Badgett's estimate from 1860 to 1869 is 4.3% for rice acreage only. In fact, acreage for alternative crops declined over this period as peasants shifted to more profitable rice cultivation.

[26] See Ingram, op. cit., pp. 41-44.

[27] Corpuz, O. D., The Philippines.

foreign trade was not sufficient to essentially alter the type of agrarian society we have so far described. Specialized agriculture and the resulting division of labor had not spread throughout the agrarian society as it soon would. This awaited changed demand conditions in the capitalistic world. But the basic responsiveness of the peasant to changed market conditions did not have to be created by British colonialism in Burma, or her pressures in Thailand, or by the Americans in the Philippines. It had existed for centuries.

After 1870

As the agrarian economy became linked to world markets, the effective demand generated for its products caused a dramatic reallocation of work effort and shift in indigenous demand from the production and consumption of Z goods to the expansion of agricultural crops for export and the consumption of imported manufactures. The growth of external trade provided the basis for the replacement of traditional industry in the home and villages of the East by the production of manufactures in the factories of the West.

The variety of Z goods produced within the village prior to 1870 was narrowed as foreign manufactures displaced them. To pay for them, self-sufficiency gave way to the generation of a marketable surplus. And, as the impersonal forces of the world market replaced the personalized society of the village, the farmer producing exportables for the markets of the West replaced the peasant cultivating land for his family.

The nature of the barter trade among villages and regions was changed as the port cities of Bangkok, Manila, and Rangoon became the center of trade and distribution. New divisions of labor and dependencies were created: in Burma, a pluristic society was established based on a racial division of labor where the Burmese specialized in rice production, the Indian money lender provided the source of agrarian capital, and the British controlled the export economy; in the Philippines, indigenous merchant capitalism appeared based on a fusion of social and political interests between the traditional landed aristocracy and the colonial government where the tenant farmer specialized in rice, sugar, coconut and tobacco production giving up to 50% of his crop to the landlord; in Thailand, increased rice specialization for the Thai farmer and increased regional inequalities for the country resulted where the Chinese dominated the milling of rice and the economic flexibility of the Court was constrained by its fear of increased Western control of the economy and perhaps final dominance of the country.

The substitution of modern manufactures for traditional Z goods implied the replacement of an inferior method of production by a superior one but not necessarily by a superior way of life. For the effect of the transition was to disrupt and upset the fabric of traditional economic life as well as the social relationships based upon the previous agrarian mode of production. In a sense, the decline of Z goods meant the destruction and fragmentation of both the good and bad aspects of agrarian life prior to 1870. However, the socio-economic impact on these countries differed.

Burma experienced a shorter historical period of colonial control compared to the Philippines and a more pronounced influence of foreign capital and labor. One important effect was the xenophobia against Indians, and Westerners in general, that developed in Burma and not in the Philippines or Thailand (although anti-Chinese feelings were not new to the latter two countries). In Thailand the symbols of authority as personified by the King and the surrounding elite were not impaired as was the case in colonial Burma. And in the Philippines, the development of an indigenous elite was, if anything, fostered by both Spanish and American colonialism. The Philippines, on the other hand, had not developed an Asian society on the same cultural level as had Burma or Thailand and thus, in a sense, provided a more fertile base for the impact of Western politics, values, and culture. Finally, the type of export specialization differed: Burma and Thailand specialized in a traditional activity, e.g., the cultivation of rice, whereas the Philippines experienced a more capital intensive export growth in sugar, tobacco, and coconuts and required a more complex mode of production and distribution.

All three countries generated an agricultural surplus but only the Philippines was able to effectively transform some of it into domestic manufacturing. In Burma, much of the gain flowed out of the country or was reinvested in rice milling, mining, and forestry - all primary related activities. In Thailand, the government captured a small share of the surplus and a significant portion of that was used to maintain the Court.

No true manufacturing sector developed, rather the income distribution favored the bureaucracy in Bangkok and the Chinese traders and millers whose expenditures were often on imported luxury items, urban improvements, or, in the case of the Chinese, remittances abroad.[28]

In contrast to the great disruption of native institution in Burma caused by British colonialism, there was a continuity to both Thai and Philippine social history that contributed a distinctive quality to the transition process we have been describing. In Thailand, the court took the initiative in the modernization process (Rama V, 1868-1910) but within the boundaries of traditional law, family institution, and religion. Social change came from above in Thailand, from the royal elite, rather than from below, from the peasant sector. However, the importance of preserving the continuity of indigenous rule as well as the traditional social and cultural patterns in the villages should not be underestimated. For there was a stability to Thai life even though the Z good culture was being disrupted and economic specialization proceeding. Whereas Burma illustrated the classic case of a simultaneous interaction between the

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[28]There is some controversy over the extent of Chinese profits or rate of return on the rice trade. Ingram, op. cit., p. 204, suggests that Chinese remittances may have averaged 25 million baht per year from 1890 to 1941 which as a total capital outflow would have exceeded aggregate investments in rails and irrigation over the same period. Another estimate is that in 1937 about 50% of the export price went to the middleman, miller and exporter, Ibid., p. 72. However, Usher has estimated that the share of the export price going to the middleman was about 10%. See Usher, D., "The Thai Rice Trade," in Silcock, T. H., (ed.), Thailand Social and Economic Studies in Development. It should be noted that Usher's figure is for 1965 and there may have been increased competition since Ingram's 1937 estimate.

disruption of Z goods and the structure of its society under colonial rule, Thailand was able to continue the integrity of the cultural fabric of its society. On balance, then, there was less fragmentation of Thai life.

Nonetheless, because the Court and the ruling elite was constrained by French and especially British pressures and influence, the Thai government acted as if it were a colonial government to preserve its own continuity and to maintain domestic stability. There was never a sharp break with the past as occurred in Burma, and Thai agrarian life was allowed to change within a stable but yet flexible structure.[29] However, the creation of a colonial mentality on the part of the government acted to constrain Thai economic development. Not only did the preservation of "old ways" interfere with the efficiency of government operations but the influence of Western treaties up to the 1920's seriously restricted the

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[29]The government was thus able to adopt slowly and selectively Western institutions. "In Thailand, which has never been directly influenced by any colonial power, acculturation to Western values and behavior patterns has been highly selective and limited to certain sections of the population. One of the main avenues of acculturation has been overseas education, implying the semi-socialization of selected members of Thai society into another culture," Evens, H.D., "The Formation of a Social Class Structure: Urbanization, Bureaucratization and Social Mobility in Thailand," American Sociological Review, 1966. Evens main argument is that Thailand evolved from a "formerly loosely structured society" to one in which there is a "temporary decline of social mobility." The mechanism producing this was "continued urbanization and an expanding bureaucracy."

In a country like Thailand where reform comes from above, i.e., from the ruling elite, and where the values of the preexisting agrarian society are more or less kept in tact while an agricultural surplus is generated, a tendency toward fascism may not be unusual. In the 1930's, Thailand experienced such a movement especially under the rule of Prime Minister Colonel Pibum Songram (1938).

ability of the government to raise needed revenues.[30] Furthermore, a significant portion of the expenditures were on ordinary governmental expenses especially, up to the coup of 1932, on maintaining the Court and, therefore, little was spent on development or investment goods. In fact, the latter expenditures from 1892 to 1941 averaged only 11% of total expenditure.[31]

Thus, although Thailand was never a formal colony, she often exhibited the pattern of one. To preserve the integrity of Thai institutions, the government was effectively constrained from controlling and utilizing the gains from her export trade. If the government had attempted to alter the foreign enforced tax rates or, rather than build up its enormous foreign reserve position (which was like a capital outflow), if it had decided to expend its limited revenues on productive investments such as irrigation, roads, or indeed manufacturing as was attempted after the 1932 coup, then the possibility existed that this might have led to a relatively more powerful economic position which, in turn, might have invited a direct confrontation with British colonialism.

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[30] See Ingram, op. cit., Chapter 8. Also, British advisers advocated that the government accumulate ample reserves of foreign currency and bullion and this advice was followed.

[31] Ingram, Ibid., p. 194. Philippine government investment as a proportion of total expenditures averaged slightly over 25% between 1906 and 1938. One might note that limited revenue does not necessarily have to constrain government expenditures. See, for example, Hymer and Resnick, "Interaction Between the Private and Public Sectors," Economic Growth Center Discussion Paper.

Burma, on the other hand, never had a choice. Subject to direct colonial rule, the laissez-faire spirit of British policy with its emphasis on the individual and the development and ownership of private property undermined the preexisting social relationship based on the family and the village.[32] The increased rice specialization in the Irrwaddy delta region of Burma led to the increased indebtedness of the Burmese cultivator to foreign moneylenders, mainly the Chettyar class from south India, and finally to loss of his land which increasingly was owned by absentee landowners. In contrast, the expansion of rice cultivation in the lower Menam Valley of Thailand did not displace traditional Thai ownership of his land nor was indebtedness as widespread or as much of a problem as in Burma. Whereas Burma experienced an inflow of foreign labor from India, and capital from British and Indian sources, all of which resulted in the establishment of a pluralistic society, Thailand did not develop such an alien complex of production.

The Chinese did immigrate to Thailand in increasing numbers from about 1840 on, but assimilation was made easier because the Thai and the Chinese bear a closer racial affinity than between the Chinese and other race in Southeast Asia.[33] Nonetheless, it is true that the Chinese owned about 90% of the rice mills in Thailand and were also engaged in specific

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[32] See Harrison, B., South-East Asia, A Short History, Chapter XVI for an excellent summary.

[33] Purcell, V., op. cit., Part III.

business activities, e.g., trade and, of course, moneylending. But, in general, the Chinese role in Thailand was, in a sense, less disrupting of traditional life or more attuned to the needs of the Thai economy than was the Indian experience in Burma.[34] Perhaps this difference is best summarized by the feeling that Burma was more the colony of India than of Britain.

Under British rule, the traditional leaders of Burma from the King down to the headman of the villages (or group of villages) disappeared replaced by direct colonial administrative units under British-Indian rule.[35] Impersonal law replaced social customs and the tradition of joint land holding which was intimately associated with family life gave way to the rapid turnover of land titles in Lower Burma and foreign court procedures. There was a serious decline of religion in Lower Burma as the position of the Buddhist monk was undermined. In Thailand, on the other hand, there was continued emphasis on the traditional relationship between Buddhism and the State.

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[34]One should not have the impression that anti-Chinese feelings did not exist. Even though the net productivity of the Chinese as a class may have been relatively high in the sense that they created more income than they probably remitted abroad, for various reasons, not the least of which was increasing nationalism in China, conflicts between Thai and Chinese broke out after the turn of the century (1910). See Purcell, V. op. cit., pp. 118-123. For an openly racial attack on the Chinese in Thailand, see "The Jews of the East," published in Benda, H. and Larkin, J., The World of Southeast Asia.

[35]For an excellent discussion of the effects of British colonialism, see Cady, J.F., A History of Modern Burma.

Upper Burma, however, suffered less disruption of socio-economic life as compared to the events in Lower Burma. Since Upper Burma did not experience the agrarian specialization of Lower Burma, in many ways, traditional life, as described previously, continued. There was less of a decline in religion in Upper Burma after 1890: land holding remained intact, village communities continued: Z activities did not suffer a similar fate as those in Lower Burma: and finally, there was less crime and disorder in Upper Burma reflecting the more or less continuity of a cohesive society.

Regional effects were not restricted to Burma. In Thailand, specialization in rice production, reliance on foreign imports, and decline in Z goods proceeded most rapidly in the Central Plain.[36] Perhaps the most important factor influencing the degree of regional specialization was the availability of adequate transportation facilities. Transport by inland water routes allowed the region around Bangkok to ship its rice in exchange for European goods at relatively lower costs compared to points within Thailand itself.[37] Thus internal trade was relatively more expensive both in terms of transport cost and time of shipment than was external trade. And, as previously noted, the Thai government was conservative in its expenditures on transportation (a railway did not reach Chiengmai in the

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[36] Ingram, op. cit., Chapter 6.

[37] Ingram, op. cit., p. 114.

North region until the 1920's). Rural industry, e.g., textile production, lasted in the Northeast and is probably even in evidence today.

It seems, although the data of the next section are not sufficient to prove it, that Burma experienced a higher level of economic development than did Thailand, especially after 1900. First of all, with the passing away of the Court in Burma, traditional crafts and peasant services that had supported the Kings and their bureaucracy were also swept away. This can be considered as another important claim on peasant labor time besides the production of food and Z goods. Historically, both Burma and Thailand had experienced a so-called Asiatic mode of production where the government required labor services, or a wage fund, to maintain the waterworks necessary for food production. And in Burma, relatively large armies were organized by the Court for various wars. In Thailand, slavery and corvée services were abolished in 1905 thereby reducing the supply of labor for the government. Thus in both countries, labor was freed for other tasks.

Burma, however, had an inflow of unskilled Indian labor and significant internal migration of experienced wet rice cultivators from Upper to Lower Burma. Thailand with the exception of Chinese immigration did not experience a similar inflow or internal migration of labor. Moreover, whereas the Indian in Burma often replaced the indigenous native, as in transportation, or became part of the British colonial service, the Chinese in Thailand often took up activities to which the native, at least

at that time, did not aspire. And politically, the Chinese did not displace traditional elites as did the British and Indian with direct colonial rule in Burma. Thus, the colonial government in Burma was able to draw on ample labor reserves (from India) allowing the Burman to specialize in the cultivation of rice.

The government of Thailand, however, was constrained on two accounts: first, as mentioned, was the abolition of slavery and corvée obligations and secondly was the restrictions on state revenues as described previously. Thus, the Thai government did not have the flexibility that Britain enjoyed to invest in needed social improvements. Perhaps this is best illustrated in the case of transportation. Burma probably had a better internal transport network than did Thailand and this, in turn, meant that imported manufactures could easily displace home produced goods over a wider area. In fact, one does have the impression that the production of Z goods declined relatively more in Burma than in Thailand, and specialization in rice was carried to a greater extent in the former country. If one reasonably assumes that Z goods are more labor-intensive than food production, then more labor was released for rice cultivation in Burma as compared to Thailand.

Added to this is the important effect that British and Indian sources of capital had on the agrarian economy. The Chettyar moneylender facilitated the expansion of land in Lower Burma and the British provided the needed transport and distribution facilities for the import /export

trade. As noted previously, no such complex evolved in Thailand.

In summary, then, Burma because of the particular type of colonial rule experienced was able to benefit from a more or less unlimited supply of labor (and credit) from India. With the passing away of labor services to the Court and the decline in labor intensive industrial activities, the Burman increasingly specialized in rice production. Adequate transportation systems facilitated the growth of the export economy and linked Lower Burma to the manufacturing markets of the West. However, as noted, these effects seriously disrupted the traditional life of the Burmese and, in fact, the consequences of colonial rule have had much to do with the creation of modern Burma.

The first organized anti-colonial movement in Southeast Asia occurred in the Philippines (1896). Centuries of Spanish rule had made the Philippines one of the most westernized countries in Southeast Asia. Compared to British colonialism in Burma, Spanish rule was more indirect and never destroyed the economic or social base of the indigenous upper class.[38] In fact, the type of political and economic Hispanization experienced strengthened the economic position of the native elite and produced a relatively powerful social class quite capable of mounting an intellectual and political revolt towards the end of Spanish rule.

Since, as indicated previously, there was never a Philippine King or established government prior to Spain's arrival, there was no court

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[38] Phelan, op. cit.

or organized state to demand the labor services of the natives. Nor did the Philippines develop an Asian mode of production as in Burma or Thailand. Spain did establish tribute and the colonial government did demand labor services thereby changing the economic relationships of the previous society. We have also mentioned the effects of the new religion on the native society. However, relative to colonial Burma, the Philippines had less to give up· where the pre-western history is richest is where a Z good culture is strongest and its disruption and decline causes the most stress on the society. If it is replaced by inappropriate western institutions to deal with the newly created commercial relationships as in Burma, then the result can be social unrest and hatred of those very institutions.

In the Philippines, however, there was a blending of what pre-western society existed with the new Spanish culture and, over the centuries, there evolved an indigenous class of potential entrepreneurs freed from traditional attitudes by the early responsibility of political authority and active in their search for western ideas and culture. In fact, in land holdings there has been a continuity from pre-Spanish times to the present. Various types of tenant farming and degrees of debt peonage have existed for centuries.[39] Thus, as with Thailand, and in contrast to Burma, there had been a cohesiveness to native society under Western influence.

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[39]Phelan, op. cit., Chapter VIII.

When the Americans arrived in 1898, the Philippines had not only undergone some three decades of economic expansion but a responsive class of Filipino and Mestizo (Chinese and Filipino) was willing and able to take advantage of the increased market incentive soon to be opened to the American colony. The Americans did little to change the class matrix inherited from Spain but rather encouraged the formation of a native class of merchant capitalists.

The American government, unlike the British in Burma, staffed the political bureaucracy and the educational system with Filipinos.[40] The colonial government invested heavily in social overhead capital, e.g., schools, health facilities, transport, and so forth. Furthermore, the Americans did not expropriate the surplus generated from the expansion of external trade. Rather it remained within the Philippines and was transformed by the merchant capitalists into agrarian related manufacturing enterprises, especially sugar centrals, and even indirectly related consumer and intermediate good industries. Employment in organized manufacturing was thus created for Filipinos. No alien complex of production appeared in the Philippines as was the case in Burma.

The Chinese were active in retail trade especially in the rural areas but they did not monopolize the milling of agricultural products as in Thailand. In fact, the Mestizo class (of Chinese and Filipino mixture)

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[40] Corpuz, O.D., The Bureaucracy in the Philippines.

gained in wealth and power and became a source of entrepreneurship for the growing economy.

The Philippines experienced perhaps the most rapid decline of Z goods as agrarian specialization proceeded. Some regions specialized in particular crops for export according to comparative advantage while others became rice and corn surplus areas. And, in fact, the Philippines, although a net importer of rice since 1870, became almost self-sufficient in food production under the Americans. But the rapid decline of Z goods and the increased regional specialization occurred within a favorable institutional environment. For the colonial government provided through its policies the favorable environment in which the merging bourgeois class was able to seek new ways of investing its wealth in new forms of production. Of the three countries, the Philippines probably experienced the most rapid rate of growth.

However, the social costs of this development were not negligible. Although there was a fusion rather than a conflict of interests between the ruling elite and the colonial government, the ingredients for social revolution did exist by the end of American rule. For the bulk of additional income created under United States colonialism went to the new merchant-capitalist class, the urban areas, and the government in terms of increased revenues.

The percentage of tenant farms in agriculture far from declining under favorable economic development steadily increased from 1902 to 1938.

In the 1930's unrest began to appear and a growing conflict emerged between the agrarian peasant and the ruling elite who, for most purposes, joined with the Americans in running the colonial government.

The quantitative evidence of the next section suggests that under Western rule and influence each of these countries experienced economic development. Yet, one cannot escape the impression that it was development of the economy rather than its natives for invariably the cultivator of the soil and his family were not much better off than prior to 1870. Wealth was created but the distribution favored particular ruling elites and urban centers as in the Philippines, or an alien complex as in Burma, or the ruling bureaucracy and the middlemen as in Thailand.

Empirical Evidence

Since a complete picture of the economic activity of each country cannot be given in this paper, only the salient features as suggested by our model will be emphasized. The macro evidence for the three countries indicate increased specialization in export crops along with agrarian induced manufacturing growth of rice milling and, in addition, sugar milling for the Philippines. Exports grew rapidly and imports of manufactures increased. Land under commercial crops expanded and labor flowed out of Z and into agricultural production. Where rough national output data exists for Burma and the Philippines, the growth of real output exceeded population growth.

Burma[41]

The area under paddy in Lower Burma expanded from approximately 2.1 million acres in 1871-75 to almost 10 million acres in 1936-40, representing a dramatic growth of 2.4% per year. The most rapid rate of growth occurred during the period 1871-75 to 1901-05 where land increased by 4% per year and a slower growth occurred from 1901-05 to 1936-40 where land expanded by 1% per year.

Rice production was 1.1 million tons in 1871-75 and 3.5 million tons in 1901-05, representing a growth of 3.8% per year. Rice yields therefore, declined slightly over this period. Between 1872 and 1901, population grew at 2.45% per year. The land-labor ratio increased and output per head was rising.

In the period between 1901-05 and 1936-40, rice production increased by 1.7 million tons, or a growth of 1.2% per year. Rice yields, therefore, rose slightly. Between these years, population grew at 1.3% per year. Thus, there was a slight fall in output per head. Compared to the first period, the land-labor ratio fell and a more intensive use of land was undertaken. This was partly due to the exhaustion of easily arable land in Lower Burma without costly irrigation or drainage

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[41] An invaluable source of empirical information was provided by Hlaing, "Trends of Economic Growth and Income Distribution in Burma, 1870-1949," JBRS 1964. Other sources consulted were:

Census of India, Burma, various issues.

Report on the Administration of Burma, various issues.

Furnivall, J.D., Colonial Policy and Practice, especially Chapters III and IV.

investments.[42]

Rice exports (in 1935-40 prices) grew at 3.5% per year in the former period and 1.1% per year in the latter period. The direction of this rice trade shows an interesting change: In 1871-75, only 1.2% of rice exports (in tons) went to India, by 1901-05, this had increased to 16%, and by 1936-40, it had risen to 53.3%. Correspondingly, the rice trade destined for the West declined from a high of 75% in 1871-75 to 46.1% in 1901-05, and finally 16% in 1936-40. The growth of India as a market for Burmese rice is selfevident from these statistics.

The growth of total imports (in 1938 prices) follows a similar trend as that of rice exports: in the former period of rapid growth of rice exports, imports grew at 5.6% per year and in the relatively slower growth period, this rate declined to 1.2% per year.

If we examine the balance of payments (in current prices), there was an export surplus throughout the period and this surplus increased both in absolute and relative terms. In the first period, total exports and imports (in current prices) grew at the rates 5.1% and 4.6% respectively, and in the second, 2.6% and 1.5% respectively. However, the surplus on current account was 63.4 million rupees in 1901-05 representing 30% of total exports and 298 million rupees in 1936-40 representing 58% of total exports.

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[42]See Hlaing, op. cit., p. 99, especially footnote 21.

It has been suggested, although the evidence is limited, that increased savings were flowing out of Burma especially to India towards the end of the second period.[43] Also, petroleum and mining grew during the second period and these were effectively worked and controlled by non-Burmese factors and consequently much of the derived income accrued to these foreign factors.

Decline in Z Goods

The terms of trade for Burma (computed as the ratio of the wholesale price of rice in Rangoon to the price of imported cotton textiles) shows an upward trend from 1880-84 to a peak in 1919-14; a sharp fall is experienced to 1915-19, and then a steady rise throughout the 1920's to another peak in 1925-29 and finally, a steady fall during the 1930's. Thus, with the exception of the First World War and the world depression, the Burmese farmer has had a favorable term of trade for his rice production.

According to our model, a rise in P should lead to a reallocation of resources out of Z and into F production. Such was the case in Burma. The increased specialization in rice also led to the import of manufactures and foodstuffs. The imports of consumer goods grew at 4.6% per year from 1871-75 to 1901-05 and 3.7% from 1901-05 to 1926-30. There was little growth during the depression. Cotton piece goods grew at 3.3% per year

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[43] Hlaing, op. cit., pp. 114-118; Wai, U. Tun, Burma's Currency and Credit, Chapters XI, XIII.

between 1871-75 and 1901-05 and about 2% per year to 1926-30. Consumption goods as a percent of total imports reached a peak of 70% by the turn of the century and then fell to 59% by 1936-40. Finally, in 1870 food accounted for 25% of total imports and textiles 61%; by 1900, each accounted for about 40%; and towards the end of the period, food imports varied between 45 to 52% whereas textiles remained at 40%. Thus, as mentioned previously, as the marketable surplus grows, one might expect a high income elasticity for imported processed foods.

The British Burma Administration Report in 1876-77 provides the following summary of manufacturing:[44]

> A great variety of manufacturing industries and trades are carried on throughout the province, the principal ones being rice-clearing, timber-sawing, silk and cotton weaving, boat building, and the manufacture of salt, ngapee, and other articles for native use and consumption.

In terms of hand-looms, the above Report finds them in every household worked by women. By the turn of the century, the textile industry suffered a serious decline, and was finally effectively destroyed as a home industry by the 1920's.[45] One estimate finds that about 75% of Burma's cotton textiles needs were provided by imports in the 1930's.[46] However, imports of cotton yarns rather than falling grew at about 1.8% per year from

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[44] Report on the Administration of Burma During 1876-77, p. 10.

[45] See various issues of the Census of India, Burma.

[46] Hlaing, op. cit., pp. 105-106.

1876-80 to 1936-40. The reason for this is that the industry became localized in Upper Burma where there was no such agricultural expansion as occurred in Lower Burma. An interesting example of a traditional industry that was not completely destroyed by foreign goods was that of the silk weaving industry. Evidently, this industry produced a particular sarong of design and color that catered to the tastes of the more wealthy Burmese who could afford it. Otherwise, there was a limited market for this luxury good.[47]

We mentioned previously that a salt-boiling industry existed in Lower Burma prior to 1870. As imports of salt rose from 8,000 to 65,000 tons between 1869 and 1885, domestic production fell from 70,000 to 18,000 tons. When World War I interrupted the supply of imported salt, domestic production rose once again to 70,000 tons but after the War, it fell to some 30,000 tons. However, as with our example of silk, there did exist a particular demand for home production of salt and this prevented it from being completely destroyed.[48] An important item in the Burmese diet is fish-paste and evidently local salt was better than foreign salt in preparing this food item.[49] Correspondingly, the fish-making industry, although declining as

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[47]Hlaing, Ibid., pp. 104-105.

[48]However, one should not underestimate the ability of Western enterprise to supplant domestic Z goods when a sufficient market does exist. For example, Birmingham became a center for the manufacture of images of Buddha. See Wai, op. cit., p. 81.

[49]See Hlaing, Ibid., pp. 103-104.

salted and unsalted fish were imported, did not die off due to this particular demand for one of its products. This again illustrates the complexity of taste patterns in the agrarian economy.

The expansion of rice production for export required the establishment of organized milling thus replacing the much lower productive home or village industry.[50] In this case, the new industry was on Burmese soil. The number of rice mills was 20 in 1870, 128 in 1905, 613 in 1930, and 673 in 1940.[51]

One of the most interesting developments in the decline of traditional industry was the particular division of labor that resulted. In general, the indigenous entrepreneur and worker was replaced by foreign factors: by the Indian immigrant and to a lesser extent by the Chinese, and by the British. Thus, as Burma became a mono-crop economy, the Burman became increasingly specialized in one activity. When the terms of trade went against rice in the 1930's, the plural society erupted into racial frictions.

The native Burmese cultivated the soil. Once Upper Burma was conquered (1885), there was permanent internal migration of wet-rice

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[50] "Even agriculturists no longer have paddy for their own consumption husked by the women of the family, but send it to the local mill in quantities as small as fifty gallons to be husked for them." Wai, op. cit., p. 81, as quoted from Banking Inquiry Report, Vol. I., p. 18.

[51] Report on the Administration of Burma, various issues.

cultivators from Upper to Lower Burma. Added to this inflow of labor was the immigration of Indians initially arriving in the 1870's at about 15,000 per year and reaching a peak of some 400,000 per year in the 1920's.[52] This Indian labor was used for harvesting purposes in Lower Burma and as the principle source of labor for most of the Western enterprises. For example, prior to about 1880, the transportation of rice in the Delta region was by Burmese boatmen. Steamships replaced boatmen but mostly Indian labor was used rather than the displaced Burman. A similar sequence of events was experienced in the important forestry sector where the foreign complex replaced the indigenous enterprise and its work force.

Perhaps one of the most interesting developments was the emergence of regional differences based on occupation. In Upper Burma, Burmans continued to make up much of the labor force and traditional industry did not suffer as much as was the case in Lower Burma. And, in fact, as noted previously, there was more continuity to cultural and religious life in Upper relative to Lower Burma. In the petroleum industry, which was the second most important export industry in Burma after rice, about 90% of the unskilled labor force in Lower Burma was Indian. In striking contrast, about 80% of the oilfield workers in Upper Burma were Burmans. In various other occupations, a similar regional pattern emerged.

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[52]Much of the Indian immigration was temporary in nature and the Indian population never exceeded 7% of the total population.

Conclusions

As Z declined, the Burmese became increasingly dependent on foreign imports for many of their consumption items and the cultivation of rice for their income. The growth of other industries such as rice milling, forestry, petroleum and mining was monopolized by foreign factors and effectively displaced indigenous enterprises and entrepreneurs. One of the most important relationships created was the dependency of the Burmese cultivator on the Chettyar moneylender class for loans to finance the dramatic agricultural expansion. Here is an example of foreign capital (from the Imperial Bank in Calcutta) flowing into Lower Burma.

The story of the scramble for land and speculation in land in Lower Burma is a fascinating one but the outcome was tragic. The depression of the 1930's brought a wave of foreclosures and led to a landless proletariat in Lower Burma. In 1901-05, 81% of the total occupied area was owned by the "cultivating owners;" by 1936-40 about 53% was so owned. And of the area owned by "non-cultivating owners," the percentage of the "absentee owners" rose from 64% to 82% between these two periods.[53] The relative harmony between the races that had existed for so many years was brought to an abrupt end by this deterioration of the agricultural situation.

From the opening of the Suez canal to the depression, the economy of Burma had enjoyed a long period of expansion. In 1881, 61% of her labor

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[53] Hlaing, op. cit., p. 127.

force was engaged in primary production and in 1931 about 73% was so engaged.[54] This again reflects the increased agrarian specialization in an export economy like Burma. In 1901-02, 69% of national output originated in the primary sector and by 1938-39, this had fallen only to about 63%.[55] Between 1901 and 1931, the growth of national output was 1.9% per year while the growth of population was 1.1% per year.[56] Yet, Furnivall claimed that in terms of social and economic welfare the Burman was not becoming better off.[57] And he felt that the main problem could be traced to the deterioration of the social life of the society.

Thailand[58]

From 1850 to 1935-39 land under rice cultivation increased from 2.3 million acres to 8.5 million acres, representing a growth of 1.5% per year. Exports of rice (in 1938 prices) grew at 5.9% per year between 1871-75 and 1901-05 and 1.9% per year between 1901-05 and 1936-40.

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[54]Hlaing, Ibid., p. 119.

[55]Hlaing, Ibid., p. 119.

[56]Hlaing, Ibid., p. 118.

[57]Furnivall, Colonial Policy and Practice.

[58]The two principal sources for this section were: Ingram, J.C., Economic Change in Thailand Since 1850, and Statistical Yearbook of the Kingdom of Siam, various issues.

Since data on production of rice are not available prior to 1907, we will use this date as a benchmark. In 1907-10, the production of paddy was 2.6 million tons and in 1926-30 4.4 million tons, representing an output growth of 2.6% per year. Land under rice cultivation grew at 3.5% per year and population at 1.7% per year over this period. Rice exports grew at 2.8% per year. The land-labor ratio was increasing then and output per head was rising while rice yields declined over the period.

From 1926-30 to 1936-40 output of rice actually declines. However, output increased from 4.4 million tons in 1926-30 to 4.9 million tons in 1931-35 and then fell to 4.2 million tons in 1936-40. Between 1926-30 and 1936-40 land under cultivation increased but more rapidly up to 1931-35. There is then only a relatively small expansion to 1936-40. If we take the depression period as a whole, rice yields declined.

The growth of imports follows a similar trend as that of exports. An import price index was not available for Thailand so the import rates must be reported in current prices. From 1871-75 to 1901-05 total exports in 1938 prices grew at 4.7% per year and in current prices 7.1% per year. Imports grew at 6.9% per year. Between 1901-05 and 1936-40, exports in real and current prices grew respectively at 3.2% and 2.2% per year. Import during the same period grew at 2.1% per year.

The balance of payments (in current prices) had an export surplus throughout both periods. However, as noted previously, the Thai government consistently accumulated foreign exchange reserves against notes outstanding.

In fact, "from 1902 to 1941 a reserve of nearly 100% (often more) was maintained."[59] Since most of the import trade was with Britain (averaging about 70% of imports) and much of the rice exports went to British colonies, British interests in maintaining a stable financial environment were well protected.[60] However, the opportunity cost of maintaining such large liquid balances for the Thai economy meant that needed investments in infrastructure, such as irrigation, power, and transport, were not carried out because of a lack of government funds. This paradoxical outcome reflected the continual effort of the Thai government to prevent itself from becoming a colony by catering to British interests and pressures.

Decline in Z Goods

The terms of trade (computed as the ratio of the price of rice in Bangkok to the price of imported textiles) shows an upward trend from about 1870 to a peak just before the turn of the century: a sharp fall is then experienced to about 1910, and then a rise to another peak just before the depression years of the 1930's.[61] The imports of consumer goods grew at 5.8% per year from 1870 to 1900 and 4.0% per year from 1910 to 1930. There

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[59] Ingram, op. cit., p. 173.

[60] Ingram, op. cit., Chapter 7.

[61] See Ingram, J.D., "Thailand's Rice Trade and the Allocation of Resources," in Cowan (ed.), The Economic Development of South-East Asia.

was no growth during the 1930's. Consumption goods as a percent of total imports was about 83% in 1870, 79% in 1900, and 70% in 1935.[62] Finally, imports of cotton textiles, one of the most important consumption items in Thailand, grew at 7.5% per year from 1910-11 to 1925-26 (3.5% in 1938 prices). The imports of the category food, drink, and tobacco over a similar period grew at 7.1% per year in current prices.

Therefore, the evidence suggests that as P rose, land under rice cultivation increased, exports expanded, and imports of consumer goods especially textiles and food, drink, and tobacco increased. The growth in demand for imported consumer goods again reflects the importance of the income effect and the possibilities of substitution open to the agrarian economy.

The impact of imported goods on household industry was regionally uneven depending, in most parts, on the availability of adequate internal transportation.[63] The Central region was easily accessible from Bangkok because of inland water connections, and was the major source of rice exports. The textile industry seems to have been supplanted there by imported cloth by 1910. Ingram surveys the decline as follows:[64]

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[62]Ingram, op. cit., p. 129.

[63]Ingram, op. cit., Chapter 6.

[64]Ingram, Ibid., pp. 114-115.

> In 1867 it was reported that the cloth imported was not durable enough, and that 'there is an extensive manufacture in Siam by hand-loom (which may be seen in every village) of phanimgs, or sarongs, woven of . . . cotton twists'. Two years later the British consul again noted that textile imports were not increasing. He said that 'unless a better weaving material than the cotton goods now sent can be manufactured at prices sufficiently low to tempt these people, the bulk of them, particularly the workers in the fields, will continue to manufacture their own from the cotton of the country, which is sufficiently abundant for the purpose'. . . . In his annual report for 1885 the consul said: 'The manufacture of native hand-woven cotton cloth has of later years decreased considerably, the imported goods, though not so durable, being far cheaper'. In 1910 Gerini said that 'the local [cotton] industry, which has been languishing for the past 50 years, has been more or less supplanted by the foreign one'.

The other regions of Thailand present a rather mixed picture:[65] in the Northeast, the home production of cloth continued, but prior to the construction of the railway it was probably the most self-sufficient region in Thailand, and indeed even today it is perhaps the poorest area of the country: the production of cloth in the North was not as widespread as in the Northeast, and in the South it had more or less suffered the same fate as occurred in the Central Plain.

Between 1920 and 1941, imports of cotton varns in metric terms increased from 1380 to 3795.[66] Domestic cotton production also increased during the 1930's. Much of this seemed to have been grown in the Northeast

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[65] Ingram, Ibid., Chapter 6.

[66] Ingram, Ibid., p. 120.

region. The depression of the 1930's probably had some general influence on the survival of the textile industry, but the regional specialization emerges as the most interesting explanation. In fact, one author when referring to Thailand's handicraft industry wrote:[67] "...though some branches of this suffered severely from the competition of imported manufactures after 1855, others have survived surprisingly well, so that in the regions outside the commercialized Central Plain such industry is probably more important than in any other major part of Southeast Asia."

Although this interpretation may be somewhat overstated, it does point to the fact that the home textile industry in Thailand (at least outside the Central region) has shown a surprising ability to survive foreign competition. No doubt the shift in P against rice during the 1930's, and the lack of an adequate transportation network to ship rice from areas distant from Bangkok (although the regions outside Bangkok did increase the production of rice) influenced its survival. Ingram felt "that domestic production as a percentage of total consumption first declined from 1850 to about 1920, since which time it has gradually increased."[68] There does not seem to be any evidence that home goods were superior to foreign so one is left with the overall impression that those areas which were closest to the world market (in terms of shipping Thai rice in exchange for European

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[67] Fisher, C.A., Southeast Asia, p. 503.

[68] Ingram, op. cit., p. 123. The Second World War cut off Thai imports and probably acted as an incentive to increased domestic textile production.

goods) experienced the most rapid decline in home textile production. One should also note our previous comments on the conservatism of the Thai government in improving irrigation and transport networks (especially feeder roads) and the effort to preserve traditional cultural values. Both policies probably acted to keep the foreign penetration mostly in the Central Plain or, in general, to where there existed adequate contacts with foreign markets.

Various other industries declined for a period of years some of which then expanded under the influence of the First World War, some tariff protection in the 1920's, and the attempts of the military government to encourage domestic manufacturing in the 1930's. Sugar, for example, was an export crop for some years but the industry declined sharply around 1870 and imports correspondingly grew rapidly.[69] Again for the above reasons, the industry began to slowly expand during the 1920's.

Some imported goods were more widely consumed than others:[70] canned milk, flour, sardines, textiles, kerosene, and yarns evidently were widely distributed while canned fruits, confectionery, and biscuits catered to a more limited market probably centered in Bangkok. Moreover, as in Burma, some Z goods were not displaced at all by foreign manufactures because of particular taste patterns or specific availability of local materials.[71]

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[69]Ingram, Ibid., pp. 123-127. Ingram points out that the terms of trade moved in favor of rice, e.g., the ratio of the rice to sugar price, from about 1870 to 1920.

[70]Ingram, Ibid., p. 130.

[71]See Ingram, Ibid., p. 128 for a list of such items.

Conclusions

From 1870 to the onset of the Second World War, Thailand experienced the development of an export rice economy, and increased regional fragmentation. Those areas in which the natural transportation of water favored the export of rice developed a specialized mono-culture as labor was reallocated from traditional tasks to the growing of rice. Other regions, for the various reasons given above, did not experience a similar pattern and, in fact, some such as the Northeast remained in a more or less self-sufficient economic state.[72]

In 1930, 49% of families in the Central region had loans outstanding compared to only 18% in the North.[73] In 1934-35, rural industry accounted for 26% to 32% of the peasants' money income in the North and Northeast while only 18% in the Central Plains.[74] Finally, regional income data for 1963, which probably reflects the regional distributions before the war as well, shows that the per capita income of the Central Plains was about 4000 baht; the Northeast, 1229 baht; the North, 1581 baht; and the South, 2597 baht.

As occurred in Burma, the percentage of workers in agriculture increased from 84% in 1929 to 89% in 1937. The cultivators were mainly Thai while the Chinese and the Europeans dominated respectively the rice

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[72]These outlying areas did supply other exports such as teak, rubber and tin but their production was less intensive compared to the other than rice exports of Burma.

[73]Zimmerman, C., Siam Rural Economic Survey, 1930-31, p. 199.

[74]Fisher, op. cit., p. 503.

milling and retail trade, and the external commerce of the country.

Of all the countries of Asia, only Thailand and Japan retained their freedom from direct foreign intervention. Yet by 1938 Japan was far advanced compared to Thailand. One can only speculate as to what might have occurred in Thailand if she had been truly free of British influence.[75]

Philippines[76]

Two factors tend to distinguish the Philippine experience from that of Burma or Thailand. First was the export specialization in crops other than rice which, at least in the case of sugar, implied the importation of capital equipment and, in general, a more capital intensive mode of export production than either Burma or Thailand developed.[77] Second was the establishment of a more complex industrial nexus than that of Burma or Thailand. There were two reasons for this: the type of exports required more investment in processing and servicing than did the rice trade and, therefore, agrarian induced manufacturing was more pronounced; the type of colonialism experienced by the Philippines produced a class able and willing

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[75] See Ingram, op. cit., for some interesting thoughts on why Japan and Thailand might have followed such different development paths.

[76] Data for this section were taken from Resnick, Economic Development of the Philippines (in progress).

[77] It should be remembered that Burma did develop a petroleum industry which became capital intensive under British control. Nonetheless, from the 1870's to the 1920's rice on the average accounted for 67% of total export earnings while petroleum only about 7%. By 1936, petroleum was 31% and rice 38% which reflected the influence of the depression years.

to transform a portion of the generated agrarian surplus into non-related agrarian manufacturing. Thus, to a limited extent, there was natural import substitution experienced in the Philippines in non-food manufacturing activities. This does not mean a return to Z production: it was rather the establishment of organized manufacturing in the urban areas.[78]

Between 1872-75 and 1936-38 exports (in 1936-38 prices) grew at 3.3% per year. The most rapid growth occurred from 1901-05 to 1926-30 where exports grew at about 5% per year: a slower growth of 2.3% per year was experienced from 1926-30 to 1936-38. Taking the American colonial period as a whole, exports grew at 4.3% per year (1901-05 to 1936-38). Imports (in current prices) grew at 4.3% per year from 1872-75 to 1936-38 (in current prices exports grew at 4.2%). In 1938 prices, imports grew at 5.7% per year from 1903-05 to 1926-30 and from 1926-30 to 1936-38, at 1.2% per year. During American rule imports in real terms expanded by 4.4% per year (1903-05 to 1936-38).

The balance of payments in current prices showed a persistent surplus on current account from 1872-75 to 1936-38. From 1896 to 1905 there were deficits but this period includes the war years up to 1902. A small average deficit appeared during the period 1911 to 1915. From then on the average export surplus on current account was over 40 million pesos per year.

The United States initiated partial free trade with the Philippines from about 1909 to 1913 when free trade was established. This lasted until

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[78]Interestingly enough was the rapid decline of home textile production and the continued dependence of the Philippines on imported textiles until the forced industrialization policies of the post Second World War years.

about 1934 when quotas were established on the importation of duty free goods (sugar, coconut oil, and cordage) into the United States.[79] The preferential treatment of Philippine goods stimulated export expansion but it should be noted that exports were growing at some 2.2% per year prior to the establishment of free trade (1872-75 to 1901-05). In fact, if one examines the period before the Spanish American War, then exports grew at 4.4% per year from 1875 to the middle of the 1890's.[80]

One other result of preferential treatment was that Philippine foreign trade was increasingly tied to the American market. In 1899, 7% of imports and 26% of exports were with the United States. The proportion of exports to America reached a peak of 87% in 1932 prior to the Tariff Act of 1934 and still remained at 77% by 1938. Imports reached 60% in 1920 and thereafter averaged about 65% until the War. Thus, most of the coconut oil, copra, cigars, and sugar were sent to one market, and virtually all of

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[79] In 1902, there was a reduction of 25% of the American duty on Philippine goods entering the American market. And the trade act of 1909 allowed Philippine goods into the United States market free of duty subject to quotas on sugar and tobacco which were never reached. It should also be noted that American goods entered Philippine markets free of duty. See, Abelarde, P.E., American Tariff Policy Towards the Philippines 1898-1946.

[80] The exports of sugar, abaca, leaf tobacco, and cigars make up the volume index. From 1865 to 1875, these exports grew at 7.3% per year. The period from about 1898 to 1901-02 is one of disruption for the Philippine economy due to the Spanish American War and the Philippine American War which was more or less over in 1902.

the sugar and coconut oil went to the mother country from the 1920's on.[81]

The total net agricultural output (in 1938 prices) of export crops was 26.2 million pesos in 1902 and 151 million pesos in 1938, representing a dramatic growth of 4.9% per year.[82] Land under export crop production grew from 466,000 hectares in 1902-03 to about 1,454,000 hectares in 1938, a rate of growth of 3.2% per year. Yields then increased over the whole period. Much of this growth, however, occurred during the period 1910 to about 1934. Yields in sugar, for example, rose steadily from 1910 to about 1934 and then showed no growth at all to 1938.

Between 1902 and 1918, net output of export crops grew at an annual rate of 7.5% and land at 5.4% per year. From 1918 to 1938, output expanded by 2.8% and land by 1.2%. However, from 1929 to 1938, the former declined slightly to 2.4% while the latter expanded only at .63% per year.

While almost all regions in the Philippines produce some rice, increased specialization by some regions in selected crops for export required other areas to produce surplus food. Furthermore, the growth of the urban areas also necessitated the generation of an adequate food surplus. Between 1902 and 1938 the net output of rice and corn (in 1938 prices) grew at about 4% per year. The demand for food over this period is estimated at slightly more than 4%.[83] The terms of trade between

[81] Americans had been trading with the Philippines throughout the 19th century and 25% of Philippine exports were sent to the United States as early as 1841.

[82] Production and land data is not available prior to 1902.

[83] The demand is based on the formula:

$$P^* + EY = D$$

where P* is the rate of population growth (about 2%); E is the income elasticity of demand, assumed to be .8 (an estimate which would be lower after World War II); and Y is growth of per capita income, estimated to be

agriculture and industry tend to support this balance between the demand and supply of food. The price of food (rice and corn) to manufactured goods is fairly steady from 1902 to 1938, although cyclical swings can be noted.[84]

The source of output expansion in rice comes mainly from increased land under cultivation and increased inputs of labor and animals.[85] Between 1902 and 1938, land under rice cultivation increased at 3.4% per year. Yields in rice then increased slightly. Since population grew at about 2% per year, there was an increase in the land/labor ratio and in output per head. The carabao population, however, grew at about 4% per year resulting in both an increase in the animal land ratio and animal labor ratio.

In effect, two periods can be distinguished: between 1902 and 1918, land under rice grew at 5.3% per year and output at about 6.7% per year; from 1918 to 1938, the former declined to 1.7% per year and the latter to 2.2% per year. The first period is characterized by the recovery from the Philippine American war (and the Rinderpest disease affecting the carabao population). Yields of rice increased during the first period relatively more than the slight increase experienced after 1918. In fact, yields

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about 2.6%. The year 1902 is often considered to be a bad crop year for rice. If the period 1910 to 1938 is taken instead, a similar result is obtained. As mentioned previously, imports of rice declined from 1902 to 1938. In 1902, imports of rice were 26% of the total value of imports; in 1910, they were 12%, in 1929, 4%, and by 1938 they were less than 1%.

[84] A five year moving average of the index, 1938=100, stands at 89 in 1912, 89 in 1920, 92 in 1930 and 92 in 1936.

[85] There were also some increased irrigation inputs.

actually declined somewhat from 1929 to 1938.[86]

Considering total net crop output, i.e. food plus export production, in 1938 prices, the growth was 4.1% per year during the American colonial period. Labor productivity (net output of all crops divided by labor engaged in crop production) showed an increase from 1902 to 1938 but only a slight expansion from 1918 to 1938.[87] Total land under cultivation increased by 3.3% per year from 1902 to 1938 and the land labor ratio rose over the period. The ratio actually increased from 1902 to 1918 and then declined somewhat from 1918 to 1938. The yields of crops increased from about 1902 to 1929 and then showed only a moderate increase to 1938, no doubt influenced by the decline in rice yields.[88]

Between 1902 and 1938, both the animal labor and capital labor ratio increased in agriculture.[89] There is also evidence that some irrigation improvements were undertaken with government encouragement.

Decline in Z Goods

The terms of trade (computed as the price of exports to the price of total manufactures) rose from around 1902 to a peak in 1917-1918 and then

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[86]Depending on the source of data, one derives different peak years for rice yields. The data of this section depend on some revisions of both census and time series materials for the Philippines.

[87]An index of labor productivity (1938=100) stands at 56.2 in 1902 and 93.7 in 1918.

[88]An index of land productivity (1938=100) stands at 67 in 1902, 85 in 1918, and 96 in 1929.

[89]The capital estimate is crude and based on imported agricultural machinery (in 1938 prices).

fell sharply to 1920; an increase was experienced through the 1920's until the fall during the depression years. If we examine the growth of consumer goods, they grew at 4.4% per year from 1905 to 1936 (in 1938 prices); 7.2% from 1910 to 1918 and 5.4% from 1918 to 1929. From 1929 to 1936, the annual rate was 1.3%. Consumer goods were 60% of total imports in 1905, 56% in 1918 and 55% in 1936. Capital goods, on the other hand, rose from less than 1% in 1950 to a peak of 26% in 1929 and finally fell to 17.2% in 1936. Imports of final textiles grew at 3.2% per year between 1905 and 1936, while intermediate textiles showed a negative growth over this period. And final textile products represented 31% of total imports in 1905, fell to below 30% during the 1920's,and were 21% in 1936.

The census of 1903 provided the following description of rural industry:[90]

> Outside of the city of Manila - the native residents of which have been in continuous contact with a considerable European population for several centuries - and a few other centers of population, the wants of the people for manufactured articles are supplied almost wholly through what may be termed "cottage" or "household industry." The cloth fabrics of the country are produced under this system, and household utensiles, implements, tools, and other articles of personal use, such as shoes (of which comparatively few are worn), hats, clothing, etc., are made almost exclusively in the homes of the users or of their neighbors.

The census of 1918 contains information on the nature of household industry listing a wide variety of industrial activities especially some of those in which women were primarily engaged. In fact, an inference is made that if the value of home processed foods could be estimated, this value

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[90] Census of the Philippine Islands: 1903, Volume Four, p. 460.

would be a significant portion of that of the food-manufacturing sector.[91]

The two specific activities often mentioned are rice pounding in the home for daily use and cloth production woven by hand looms. It was estimated that in 1902, over one million women were engaged in manufacturing pursuits in the home, mainly textile production.[92] Almost 70% of the total number of women engaged in occupations were in the manufacturing classification and of the total male and female labor force, 32% were engaged in manufacturing, second in importance only to agriculture.[93]

For the Philippines, some rough estimates are available to show the decline of rural industry. The levels are probably underestimated but the trend does provide evidence of the rapid decline of Z activities.[94] Household industry as a proportion of total manufacturing value added (in 1938 prices) was above 60% in 1902 and about 13% in 1938. Furthermore, organized rice, corn, and sugar milling as a proportion of total milling value added was 19.2% in 1902 and 87% in 1938. This, in turn, reflects the expansion of rice mills and especially sugar mills in the economy.

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[91] Census of the Philippine Islands: 1918, Volume Four, Part I, p. 586.

[92] Census, 1902, op. cit., Volume Two.

[93] The initial estimates were revised by the author but the corrected figures still show that about 27% of the total labor force was engaged in manufacturing in 1902.

[94] Resnick, op. cit., worksheets. One obvious reason for the underestimates is that it is impossible to quantify all the goods produced in the household even if one could impute prices to basically non-traded goods. Another reason is that the estimation is based on an arbitrary 1000 pesos criterion: those industries producing an output greater than 1000 pesos per year are counted as organized manufacturing.

If we examine the agricultural sector as a whole, (e.g., crop production, fishing, forestry, etc.), then in 1902 rural industry was 19% of the total net agricultural output which is, interestingly enough, slightly greater than the contribution of exports to the total and second in importance to food production. Fishing was another rural activity that was more unorganized than organized and taken together with other rural industries slightly exceed the contribution of food crops to total net output.[95] By 1938, however, the above relationships are completely changed. Rural industry declines to 6% of the total and is far less than either the contribution of food or export to net agricultural output even if fishing is taken into account.

We have then the common result of this paper according to the previously presented model. However, the agrarian story for the Philippines is somewhat complicated because of the evidence presented that both food and export production increased. As household industry declined, labor was released for other tasks.[96] Labor engaged in agriculture increased from about 51% in 1902 to 61% in 1918 and to 71% in 1938. Much of this increase is derived from females leaving household tasks and entering agriculture

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[95] Separate estimates are made for fishing output as existing data grossly underestimate its production.

[96] A not unreasonable assumption for Z production is that it is produced only with labor so that the production function is $Z = \frac{1}{a} L_Z$ where a is labor required per unit of Z and is constant.

per se (the male ratio increased but only slightly compared to that of the female).[97]

As noted, export production increased by 4.9% per year between 1902 and 1938 and food by about 4% per year. Imports of capital goods, however, rose steadily over this period, especially between 1905 and 1929, and much of the agricultural machinery imported was probably for the production of sugar.[98] If it is assumed in the long run that food production is, in general, more labor intensive than export production, and if the observed rate of growth of capital exceeded the assumed growth of labor flowing out of Z production and into crop production, then it is possible that the growth of export production would exceed that of food production (at unchanged commodity prices).[99] Sugar production did have a rapid growth from 1910 to 1929, growing at 14% per year up to 1918 and 7% per year from 1918 to 1929.

The terms of trade, however, between sugar and rice were not constant. Over the period 1910 to 1934, they moved in favor of sugar, and the land under sugar increased relative to rice.[100] The labor released from house-

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[97]If all agrarian and agrarian related tasks (Z) are included, then the proportions of labor in the total A sector showed a slight decline from 76% in 1902 to 74.1% in 1938.

[98]Imports of capital goods (in 1938 prices) increased at 15% per year from 1905 to 1910, 4% from 1910 to 1918 and 8% from 1918 to 1929. Imports of agricultural machinery showed even higher rates of growth over similar periods.

[99]It should be emphasized that the assumption of factor intensities refer to the long run for sugar production does have a heavy seasonal demand for labor when the crop must be harvested. Also, it was noted that the underlying inputs for rice production include animals as well as labor and land. We might, therefore, consider doses of animals and labor per unit of land.

[100]There is no lack of empirical evidence showing in general that peasants respond to price movement. For the Philippines, two econometric

hold industry, especially from unorganized rice and sugar milling, flowed into rice production as sugar (both cultivation and milling) became relatively more capital intensive. Population growing at about 2% per year reinforced this tendency. There was, then, a more labor intensive type of food production where the land labor ratio fell especially after 1918. The productivity of labor, however, did not decline because of increased inputs of animals and perhaps improved farming practices.

This reallocation of resources (and expansion of resources) was facilitated by government investment in transport, education, and health and by the indigenous entrepreneur who, as we have noted, was a product of both Spanish and American colonialism. It is possible, of course, to claim that the movement of labor into the rice sector vis-a-vis capital into the sugar sector might lead to a reinforcement of traditional peasant life, i.e., the agrarian life associated with a rice culture. This, however, was not the case because of the simultaneous fragmentation of rural industry. What resulted was increased agrarian specialization and a more widespread agrarian division of labor rather than a return to the "Z-rice" complex we have previously described.[101]

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studies indicate responsiveness: Bautista, R.M., "Supply and Demand in the Market for Philippine Sugar, 1912-34," unpublished paper. Mangahas, M., Recto, A., and Ruttan, V. "Price and Market Relationships for Rice and Corn in the Philippines," JFE, Aug. 1966.

[101]It is interesting to note that such a return or reemphasis evidently did occur in Java under Dutch colonialism. See Geerts, G., Agricultural Involution.

CONCLUSIONS

Real value added per occupied person in the total agricultural sector grew at 3.9% per year between 1902 and 1918, and .8% per year between 1918 and 1938. Real value added per occupied person in the total non-agricultural sector increased at an annual rate of 4.1% during the first period and 3.2% during the second. Total net output per capita (population) in real terms grew at 3.9% from 1902 to 1918 and 1.6% from 1918 to 1938: between 1902 and 1938, it expanded at 2.6% per year, and between 1910 and 1938, at 2.3% per year.

The total agricultural sector contributed 50% to real net output in 1902, 48% in 1918, and 34% in 1938. Agriculture as a total contributed 47% to the growth of total product between 1902 and 1918, and 23% from 1918 to 1938. Overall, it contributed 29% to the growth rate between 1902 and 1938. A rough estimate of whether there was a flow of savings out of agriculture to finance the expansion of other sectors reveals a more or less balance between the capital needs of agriculture and the savings originating in agriculture from 1902 to 1918, and a net savings flow out of agriculture into non-agriculture from 1918 to 1938.[102]

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[102]These estimates are based on an assumed incremental capital output ratio (of 3) which, given the relevant growth rates, is equivalent to an assumed savings rate for the economy. Given the shares of the A sector and the non-A sector in national output, and the growth rates for each sector, the savings originating in the two sectors can be computed. To find the sectoral capital needs, the incremental contribution of each sector to total added output is computed and assuming that the incremental capital output ratio is the same for both sectors, we compute the relevant capital need as a percentage of the total capital formation needed. These are only educated guesses as to the actual numerical values of the critical ratios and the results probably overestimate agrarian capital needs and underestimate savings originating in agriculture. Furthermore, over time the capital output ratio of the economy may have increased.

Organized manufacturing increased its relative share of the non-agricultural sector from only 12.6% in 1902 to 22% in 1938 which ranked it first in terms of contribution slightly exceeding that of the service sector (21.3%) and the commerce sector (19.2%). No doubt much of this growth was contributed by the expansion of rice and sugar milling-agrarian induced industries. However, there seemed to have been some import-substitution carried on as the import content of supplies in the organized manufacturing sector (excluding food-processing) declined from 79.4% in 1902 to 51% in 1938.[103] Much of this expansion derived from the growth of the shoe, glass, cement, printed products, non-metallic, and chemical industries. After 1929, there was a small expansion in the textile industry.

There was, then, significant agrarian and non-agrarian expansion in the Philippines related to the growth of the export economy. However, the distribution of income between the agricultural and non-agricultural sectors seemed to have widened. In 1902, the output per occupied person in the latter sector was three times that of the former whereas in 1938 it was over five times. Since much of the output of the non-agricultural sector was located in the urban areas (especially Manila), the rural sector, in general, experienced an increase in per capita income but not to the degree of the urban sector. Moreover, if one examines some other

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[103]This ratio is computed as the total value of manufacturing imports (CIF) in 1938 prices to the total supply of manufacturing goods in 1938 prices (the gross value of manufacturing excluding the processing of food, beverages and tobacco plus the value of finished manufacturing imports (CIF).

characteristics of the agricultural sector, then the question as to improved welfare of the majority of the population becomes even more suspect. The average size of tenant farms was 4.4 hectares in 1902 and 2.0 hectares in 1938; the total number of farms increased between 1902 and 1918 but fell from 1918 to 1938; and finally, the percentage of farms under different types of tenure arrangements steadily increased between 1902 and 1938, and this increase was most pronounced in those regions specializing in crops for export.[104]

During the 1930's, agrarian unrest appeared in some regions, and once the Second World War was over, a serious agrarian revolt occurred. Although there was significant development of the Philippine economy, the commercial expansion did not lead to a free class of agrarian labor (at least in most regions) nor did it modify essentially the agrarian class matrix inherited from Spanish times. The rural unrest reflected this development.

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[104]The number of farms under various forms of tenure was 19.3% in 1902, 22.3% in 1918, and 35.1% in 1938. It should be pointed out that the percentage levels for any Census year are probably underestimated, but assuming a consistent error of reporting, the trend may be reliable.