

Marketing and Social Structure in Rural China

Part II

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This article appears in three installments. Part I (Vol. XXIV, No. 1: November, 1964) essayed a synchronic analysis of marketing systems. Part II, the present installment, treats certain processes of change, both traditional and modern, on the pre-Communist Chinese mainland. Part III, to be carried in the next issue, is concerned with developments in rural marketing on the mainland since 1949 and with the fate of marketing communities under Communism.⁹²

Traditional Change

IN A.D. 1227, during the Southern Sung, the four *hsien* on the peninsula in Chekiang which is dominated by Ningpo supported twenty-six rural markets; six and a half centuries later, during the Kuang-hsü reign, there were approximately 170 rural markets in the same territory.⁹³ Chin-t'ang *hsien*, Szechwan, had four rural markets at the beginning of the K'ang-hsi reign in 1662; by 1875 the number had increased to thirteen and by 1921 to thirty-two.⁹⁴ Rural markets in Yen-shan *hsien*, Hopei, rose from twenty-three in 1868 to thirty-seven in 1916.⁹⁵ By what principles and in accordance with what patterns do markets thus proliferate on the landscape?

Marketing structures throughout a vast area surrounding Chengtu were rebuilt virtually from scratch following the holocaust set in motion by Chang Hsien-chung in the mid-seventeenth century. In the environs of the city, and to the west and south, they came to be distributed in accordance with Model B, so that the standard market town was typically dependent on *three* higher-level market towns, as illustrated in Figure 3, Part I. Farther away, to the east and northeast in particular, they were so

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⁹² I am grateful to the following scholars for having given me the benefit of their criticism: Knight Biggerstaff, Allan G. Feldt, Richard C. Howard, John W. Lewis, Ta-chung Liu, John W. Mellor, Chandler Morse, Morris E. Opler, Lauriston Sharp, Robert J. Smith, and Arthur P. Wolf, all of Cornell University; Brian J. L. Berry (Chicago), Albert Feuerwerker (Michigan), Maurice Freedman (London School of Economics), Ping-ti Ho (Chicago), Sidney Mintz (Yale), Rhoads Murphey (Michigan), Peter Schran (Yale), Denis Twitchett (School of Oriental and African Studies), Donald E. Willmott (Toronto), Mary C. Wright (Yale), C. K. Yang (Pittsburgh), and Basil S. Yamey (London School of Economics). I regret that it has not been possible at this stage of the research to implement all of the suggestions for improvement which have been received or to take up every issue raised.

⁹³ *Pao-ch'ing Su-ming chih*, Pao-ch'ing 3 (1227), ch. 13 (Yin *hsien*), ch. 15 (Feng-hua *hsien*), ch. 17 (T'z'u-ch'i *hsien*) and ch. 19 (Ting-hai, now Chen-hai, *hsien*). *Yin hsien chih*, Kuang-hsü 3 (1877), ch. 2. *Chen-hai hsien chih*, Kuang-hsü 5 (1879), ch. 4. *T'z'u-ch'i hsien chih*, Kuang-hsü 25 (1899), ch. 3. *Feng-hua hsien chih*, Kuang-hsü 34 (1908), ch. 3.

⁹⁴ *Chin-t'ang hsien chih*, Min-kuo 10 (1921), ch. 1.

⁹⁵ *Yen-shan hsien chih*, T'ung-chih 7 (1868); *Yen-shan hsien-chih*, Min-kuo 5 (1916). Data summarized in Katō, p. 5.

reconstituted that the standard market town was normally oriented to only *two* higher-level market towns, as in the Model-A distribution shown in Figure 2 (also in Part I). What accounts for the difference?

In the 1890's Chieh-yang *hsien*, Kwangtung, had 163 villages and thirteen rural markets; forty years later the number of villages had increased to 885, but the number of rural markets only to twenty.⁹⁶ During roughly the same period, in an area south of Ningpo the increase in the number of markets far outstripped the growth in the number of villages. Why does the ratio of villages to markets increase in some cases and decrease in others?

It is questions of this kind which led me to seek a theory which could account for peculiar patterning in the growth of settlements in traditional times. The theory presented here is applicable, in any particular region, only to periods during which major catastrophies were avoided. Throughout China's long history, villages and market towns were repeatedly destroyed in many areas of the country, particularly in end-of-dynasty rebellions. However, during the course of modern history—whether we reckon from the beginning of Sung, of Ming, or of Ch'ing—the inexorable trend has been toward intensification of the rural landscape.⁹⁷ My theory assumes, then, that during periods unmarred by the wholesale devastation of rural areas, spatial development may be analyzed as a simple process of addition—the continual establishment of new households, new villages and new markets—and that the amount of settlement extinction may be dismissed as negligible. It is doubtless true that “through the course of years, periodic markets rise and fall”—as C. K. Yang asserts—and that even in times of relative peace, markets die from time to time in consequence of floods, of bandit attacks, and of disputes.⁹⁸ But in general these subtractions from the landscape are, I argue, idiosyncratic in character, insignificant in number by comparison with the inexorable increments, and offset in any case by new additions. I am concerned here not with *ad hoc* extinctions, which are to be explained in terms of specific local histories, but with the general growth patterns which have yielded the market distributions and marketing structures obtaining in any region after an era of rural peace.

The rate at which market extinction occurs in rural China in the absence of catastrophe is suggested by the case of the four *hsien* in Chekiang cited above. Of the twenty-six rural markets already established in 1227, twenty were still extant and operating as rural markets in 1877—along with some 150 new markets added to the landscape during the intervening centuries.

The intensification model begins with a simple distribution of dispersed village clusters, each surrounding a small rural market, as shown in Figure 5.1. This diagram represents in schematic form the situation in an area where settlement (or resettlement following rural devastation) is recent. Marketing systems are small—their hubs may be thought of as minor markets rather than standard market towns—and marketing areas tend to be circular since they have not yet expanded to the point of potential overlap. In Figure 5.2, new villages have been established, filling out the

⁹⁶ Chang Jen-chün, *Kuang-tung yü-ti ch'üan-t'u* [Comprehensive Atlas of Kwangtung] (Canton, 1897), Vol. I, p. 41. Chieh-yang *hsien cheng-hsiü chih*, Min-kuo 25 (1936), ch. 1.

⁹⁷ It is, of course, a direct reflection of inexorable growth in the rural population.

⁹⁸ The rise and fall of individual markets is treated by C. K. Yang in *A North China Local Market Economy*, 1944, Ch. VI, and by Kuramochi Tokuchirō in “Shisen no jōshi” [“The Local Markets of Szechwan”], Section 5.

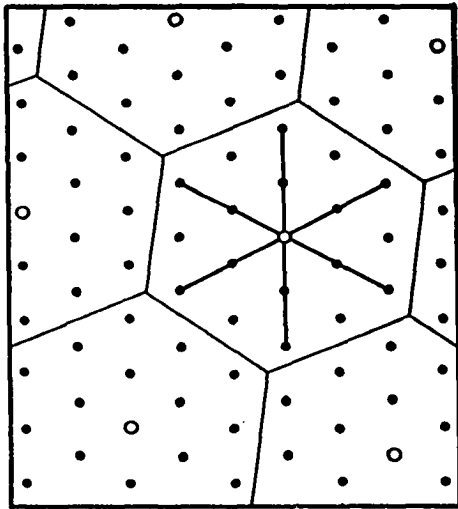
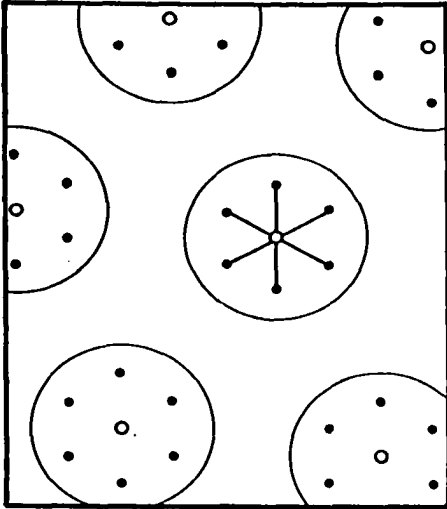


FIGURE 5.1. One ring of villages surrounds each dispersed market town.

FIGURE 5.2. The landscape fills out with villages; two rings surround each market town.

KEY:

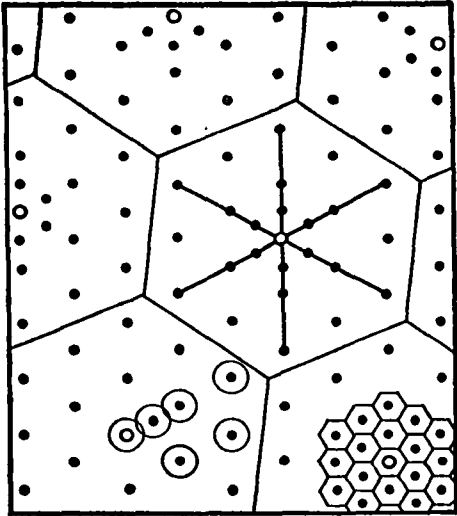
- Solid dots : Villages
- Small open circles : Standard market towns
- Solid-lined hexagons : Standard marketing areas
- Lines connecting settlements : Original system of paths

landscape on the module set by the older villages. The six paths radiating from the market town are extended to the outer ring of villages. Marketing areas have expanded and been pressed into hexagonal shape.⁹⁹ The landscape is in stable equilibrium with the space filled.

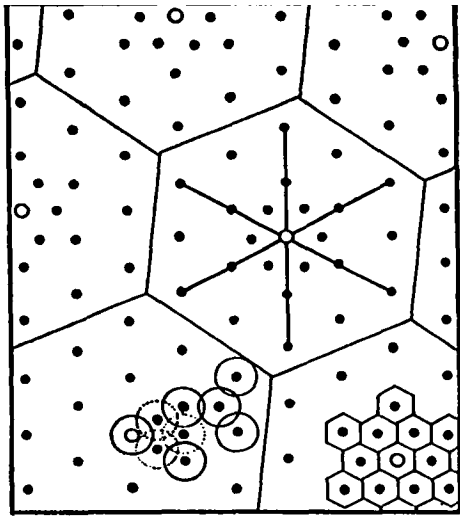
At this stage, further intensification normally occurs through the segmentation of the older villages, i.e., those depicted in Figure 5.1. In what general part of the marketing area the new settlements are established is inconsequential for this model, although in Figure 5.3 it is assumed that the first new settlements will be made in the advantageously situated area between the original villages and the market. Two patterns of siting are possible (see Figure 5.3). In Model A, each new settlement is established on one of the main paths connecting an old village to the market. In Model B, each new settlement is established equidistant from the market and two old villages, at a site not served by the original paths. Each new village is equidistant from *two* of the original settlements in Model A and from *three* in Model B.

On the face of it, one would expect the first pattern of village siting (Model A) to be followed in circumstances where laying out new paths is difficult and where the proportion of the total marketing area needed to support one village is relatively

⁹⁹ Figures 5.1 and 5.2 present the sequence with considerable ellipsis. The circular marketing areas first expand until they meet, and then, as Lösch puts it, "The corners [i.e., interstices between the circles] can be utilized by pressing the circles together until a honeycomb results." *The Economics of Location*, p. 109; see also Fig. 23 on p. 110.



Model A



Model B

FIGURE 5.3. An inner ring of villages forms around each market. (Small circles relate to the problem of village siting; see text.) Small hexagons represent the extent of village lands after the formation of the new inner ring.

small. By contrast, new settlements are likely to be established in accordance with Model B where the proportion of the total marketing area needed to provide agricultural land for one village is relatively large, so that villages established on the already existent paths are not viable, and where the layout of new paths (to connect the new villages to market) is not an arduous task. If the circles at the lower left of the two diagrammed models (Fig. 5.3) represent the amount of land, expressed as a proportion of the marketing area, needed to support a village of optimal size, then it is clear that the larger circles of Model B inhibit village growth on the path between an old village and the market (note the dotted circles) and encourage the growth of new villages equidistant from three already existing settlements. The small hexagons at the lower right of the two diagrams represent the proportion of the total marketing area which is optimal for village lands in each situation.

In fact, though it may seem paradoxical on first glance at Figure 5.3, Model-A distributions are fostered by relatively unfavorable terrain, in particular where hilly or mountainous topography limits arable land to a low proportion of the total area. By contrast, villages tend to be sited in accordance with Model B in landscapes where a high proportion of the land is arable, most notably on alluvial and coastal plains.¹⁰⁰

The reason for the difference in settlement patterning must be sought, I believe, in the interrelation between transport cost and agricultural productivity. Let us compare two recently established villages, one on a plain where virtually all the land is

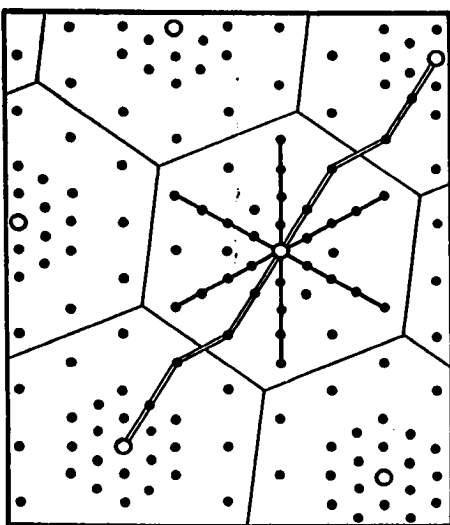
¹⁰⁰ The assumptions on which distribution models are normally based—namely, that topographical disturbances are minimal and that relevant resources are uniformly distributed—become manifestly unreal in the case of Model A. Nonetheless, even for mountainous landscapes a geometric model retains utility as an abstract schematization—*vide* Figure 2—and as a means of laying bare certain principles of change.

suitable for cultivation, the other in a hilly area with limited arable land.¹⁰¹ The input of transport necessary to bring under cultivation that amount of additional outlying land which will increase the village's total agricultural output by, say, 50 per cent will be far less costly for the plains village than for the mountain village, both because the area which must be added to the village lands is smaller and hence requires shorter extensions of paths, not to mention shorter trips from village to fields, and because paths and roads are easier to build and trips easier to make on a plain than in the mountains. As a result the village on the plain will grow quite large before economic pressures encourage pioneer families to move out and establish a new village. By that time, however, a site on the path between two already existing settlements is likely to be ruled out by the inadequacy of arable land not already cultivated by the two older villages. Sites providing more abundant land—namely those equidistant from three already existing settlements—tend therefore to be favored, even though it means breaking a new path.

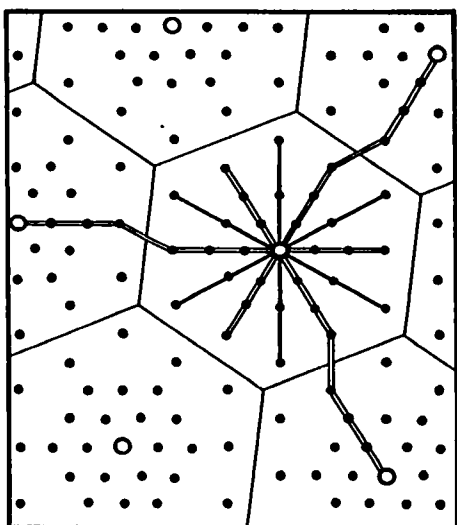
The mountain village, on the other hand, will be brought to the point of segmentation much sooner (i.e., at a lower level of population) than its counterpart on a plain, for continued extension of village lands involves a much steeper increase in transport costs. Since the original villages are still small at the time of segmentation, a site near the midpoint of the path between two of the original settlements is likely to provide sufficient agricultural land for the new village without encroachment on the cultivated lands of the original settlements. In any case, settlement on an already existing path is not only economical but—in cases, for instance, where the original path runs along a narrow valley—often essential.

This differential in outcome will be seen as even more likely when it is realized that in a mountainous terrain settlements tend to be farther apart in the first place; that is, the absolute distances between the *original* settlements are normally greater in mountainous areas than in the plains. This is likely to be the case both because in an underdeveloped area of the former type new villages will each tend to seek out a different mountain valley, and because the limited amount of arable land per unit of territory means that a large area is needed to support each settlement. Thus an additional reason why new settlements need not seek sites off the already existing paths in the case of a mountainous landscape is that the original settlements were relatively far apart in the first place; and an additional reason why the second wave of villages must, in the typical case on a plain, settle for sites equidistant from three existing villages is that the latter were close together to begin with.

¹⁰¹ The argument as stated assumes that the arable lands available to the village in a mountain valley are no less productive than those found in the plains. In some empirical cases, there is indeed little to choose between the arable land on the *floor* of mountain valleys and that in the plains below them; that is, a compensatory balance may obtain among the various factors which affect the cash value of output (or, if different in the case of food crops, the energy yield) per unit of cultivated land: soil fertility, soil structure, microclimate, suitability for crops of lower or higher cash value (or energy yield), and so forth. Where the factors are not in balance, however, the differential typically favors the plains. In particular, while the culture of high-energy food crops such as rice may be feasible in a given plain, it is often precluded in nearby mountain valleys because of inadequate water supply and/or a shorter growing season stemming from the higher altitude. Moreover, the slopes of mountain valleys are generally less fertile than the valley floors. In consequence, the arable lands available to the mountain village tend to be less productive than those available to the plains village. Thus the contrast noted in the text—that the ratio of arable land to total land area is lower in mountainous landscapes than on the plains—is normally sharpened by the additional fact that such arable land as is available to mountainous villages tends to be less productive than that cultivated by villagers on the plains.



Model A



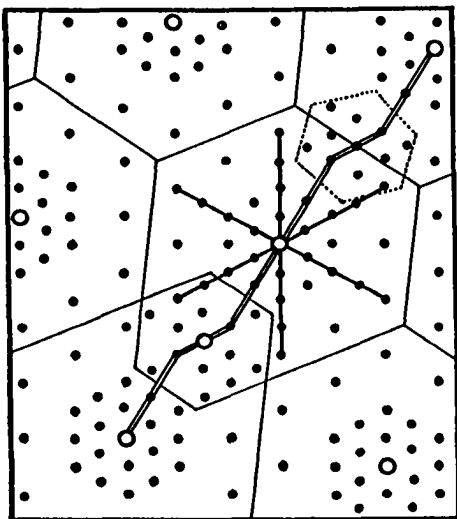
Model B

FIGURE 5.4. Additional villages are established and intermarket roads are built. KEY to lines connecting settlements:
 Solid : Original system of paths and the roads developed therefrom
 Double : Second system of roads

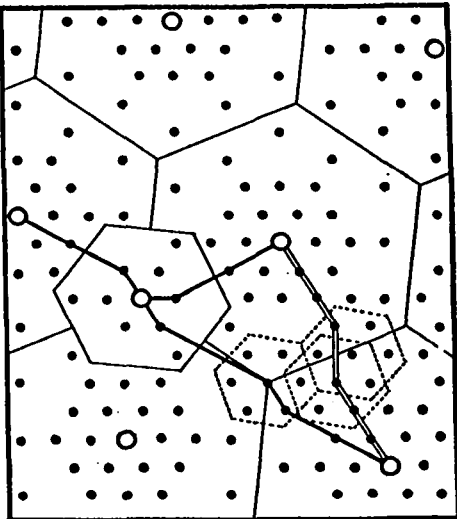
It is important to recognize, therefore, that the actual distances which must be read into Model A are much greater than those which characterize environments of the type which lead to Model-B distributions. While the contrastive models begin with exactly the same *pattern* of settlement distribution (Figures 5.1 and 5.2)—that is, while *relative* distances are the same—*absolute* distances between settlements are greater in the case of Model A. In Figure 5.3, the little circles which represent the amount of land needed by villages of optimal size are shown smaller in Model A than in Model B—and properly so, for they *are* smaller when expressed as proportions of the total marketing area. But in terms of absolute area, the circles of Model A represent a larger territory than do those of Model B.¹⁰²

To summarize the argument: In the plains which induce Model-B distributions, villages are originally situated close to the markets and to one another, and because of a favorable transport-productivity equation, they grow large before new satellite villages are formed. The latter must therefore be sited so as to maximize the potential village lands of the new settlement—namely at the point equidistant from three original settlements, even though this means breaking a new path. In the hilly or mountainous landscapes which induce Model-A distributions, however, villages are originally situated relatively far from the market and from one another, and because of an unfavorable transport-productivity equation, new satellite villages are formed before the original villages grow large. Consequently, sites on the paths connecting the

¹⁰² In other words, the Model-A sequence is drawn at a smaller scale than is the Model-B sequence in order to bring out the similarity of *pattern* in settlement distribution at the beginning of the intensification cycle and the difference in pattern at the end.



Model A



Model B

FIGURE 5.5. The distribution of villages becomes still more dense and new markets begin to be founded. One viable minor market and one new standard market town are shown on each diagram. The original system of roads is extended in Model B. (Only parts of the road systems are shown.) **KEY:** Dotted hexagons : Minor marketing areas.

original settlements are viable for new villages—with respect to available agricultural lands—and preferable because they minimize the transport problem which stems from the unfavorable terrain.

To return to the sequence of intensification, in Figure 5.4 new villages continue to be established on the two different modules already set in Figure 5.3. In Model A, settlements are established on the original paths until they resemble strands of pearls, and when intermarket roads are eventually built they pass through relatively few settlements. In Model B, by contrast, the continued establishment of villages equidistant from three already existing settlements soon means that the second set of paths surpasses the first in importance, and it is these which are developed and extended to become intermarket roads. Both Models now show two complete rings of closely spaced villages surrounding each market.

When settlement is further intensified on the landscape, as in Figure 5.5, minor markets are established to serve villages near the rim of the original standard marketing areas. In Model A these will be situated on the intermarket road at the point equidistant from two of the original market towns. Not only does the module of intensification call for a settlement at precisely that point; not only does situating the new market on the already existing intermarket road obviate a second set of intermarket roads in an area where one of the givens is difficulty with transport; but also, and above all, a minor market so sited can grow into a standard market with a full complement of eighteen dependent villages without encroaching on the full two rings of villages required to support the original standard market. By contrast, the intensification module of Model B provides for no settlement site on the intermarket

road at the point equidistant between the two markets, and any minor market which might be established near that road (note two of the dotted hexagons) could grow into a viable standard market only if inroads were made on the outer ring of villages which one of the original markets requires for its own standard marketing area.¹⁰³ However, minor markets established at the corners of the original marketing areas (note the third dotted hexagon) equidistant from *three* of the original markets, at sites provided for by the Model-B intensification module—and only those minor markets—are able to grow into viable standard markets, each with a potentially full complement of eighteen dependent villages. Markets established at these points are served by extensions of the first set of paths to have been laid down within the original standard marketing areas. When these are further extended (and road building is relatively simple in the Model-B situation) they become an important new set of intermarket roads. New standard markets, of which one each is shown for Model A and Model B in Figure 5.5, are eventually established at other potential sites around each of the original markets.

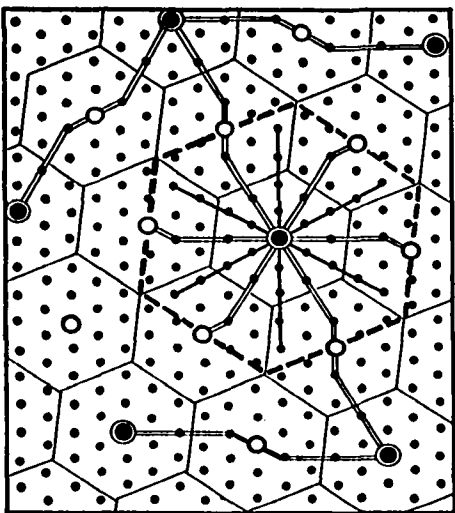
Meanwhile, the original markets begin to assume central service functions for the newly emerging standard markets; that is, they become intermediate or still higher-level markets to which the new standard markets are oriented. Figure 5.6 shows both models fully fleshed out, once again in a state of stable equilibrium.

It should perhaps be made explicit that each of the factors relevant to the difference in village siting at the stage depicted in Figure 5.3 is also relevant to the difference in market siting at the stage depicted in Figure 5.5. Just as a new village in Model B must seek out a site equidistant from *three* already existing settlements in order to have sufficient agricultural lands not already cultivated by the older villages, so a new market in Model B must seek out a site equidistant from three already

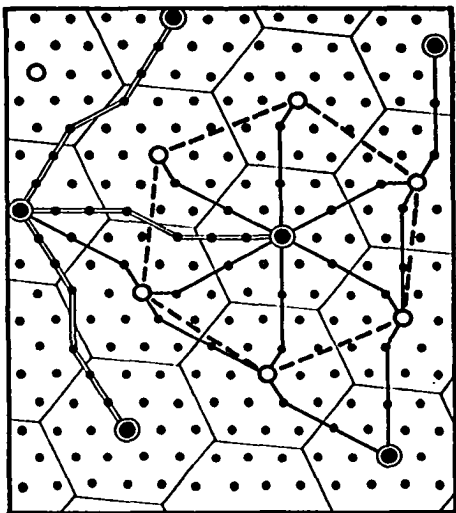
¹⁰³ Under certain circumstances a group of villages may found a new market with deliberate intent to encroach on the area supporting an already existing market. A case in point is described by C. K. Yang, p. 24: "The Tuanchiachuang market [Tsou-p'ing *hien*] was first organized about 1900 by eighteen villages surrounding it, as a measure of combatting the excessively heavy taxes levied by tax farmers in Tungchiachuang market, about two miles to the south. . . . The market in Tungchiachuang . . . declined considerably after the emergence of . . . its rival . . ." A second case is provided by Tai Po in the New Territories of Hong Kong. In the 1880's the Tai Po market was controlled by a localized lineage of the Tang people who, as masters of the market, permitted themselves to claim excessive privileges and to harass marketers from other lineages. Tang control of the market was repeatedly challenged by the Man people of another village, and on suffering a decisive setback in their campaign to force a relaxation, the latter organized a league of already existing intervillage units in order jointly to establish, in 1893, a new market in the close vicinity of the old. It is from the new market, which quickly gained supremacy, that the present town of Tai Po developed. I am grateful to Dr. Maurice Freedman for details of the case. Also see Sung Hok-p'ang, "Legends and Stories of the New Territories: I Tai Po," *Hong Kong Naturalist*, VI (May 1935).

In the more usual circumstances in which the older market enjoys the good will of its dependent villages, it has a competitive advantage over a new market established unduly near to it. C. K. Yang (p. 24) cites several cases of minor markets which, through unwise siting, were short-lived.

While it is probable that new markets are not normally established at locations which bring on their founders the ire of neighboring settlements, benevolent intent is not assumed by the model here being presented. A new minor market established on a site where it can succeed only at the expense of a neighbor's demise will either succumb to the competition or replace the original market. If the site is a patent threat to an existing market, the latter may fight back with political as well as economic weapons. "A market was set up in the village Shiliu in the northern part of . . . [Tsou-p'ing] county in 1914. Only half a mile from an old market in the neighboring county, it was abolished within a few days of its establishment by . . . order of . . . [the Tsou-p'ing] County Government upon a protest lodged by the old market." C. K. Yang, p. 24.



Model A



Model B

FIGURE 5.6. New standard market towns are established at all potential sites, and villages completely fill in the landscape on the intensified module. The original market towns become higher-level market towns, and what had been standard marketing areas become intermediate marketing areas (of which only one is shown on each diagram).

KEY: Heavy circled dots : Higher-level market towns
Heavy dashed hexagons : Intermediate marketing areas

existing markets in order to have a sufficient complement of dependent villages not needed for support of the older markets. Just as a new village in Model A favors a site on the original intervillage paths, so a new market in Model A favors a site on the original intermarket roads. These locations are viable in the case of Model-A villages because the necessary complement of agricultural land is available without encroaching on the lands cultivated by the original villages; and they are viable in the case of Model-A markets because the more extreme pattern of village intensification permits a full complement of eighteen villages for the standard marketing systems of all markets, new and old.

It should now be clear why it is that markets approach Model B in their distribution 1) the more closely the terrain resembles a flat isotropic plain, and 2) the greater the productivity of the land per unit of total area. In the case of China one must also add a third circumstance which favors Model-B distributions: propinquity to urban centers. This factor affects the transport-productivity equation in two ways. In the first place, each city in China enhances land fertility in its immediate environs through its lavish production of nightsoil, which is contributed daily to the surrounding farmland. And secondly, road systems tend to be better developed in the vicinity of cities, partly out of commercial necessity—they are the hub of great trading areas—and partly because cities are likely to be prefectural or provincial capitals and hence well served by imperial roads (or, in post-imperial times, by *kung-lu*, “public highways”).

Thus it is that Model B occurs most generally in the plains around local and regional cities while Model A appears to be nearly universal in areas of mountainous terrain remote from urban centers. The area of Figure 3 (which illustrates Model B) is typical of the entire Chengtu Plain, which is reasonably isotropic, extraordinarily productive, and dominated by a regional city. The area of Figure 2 (which illustrates Model A) is typical of those parts of the Szechwan Basin which are hilly, less productive, and relatively remote from cities. To mention a few other areas which I have partially analyzed in this regard, distributions similar to Model B occur in the plains around Canton, Nanking, and Ningpo, while distributions fitting Model A prevail in Tsun-i *hsien*, Kweichow, in Ta-pu *hsien* and Mei *hsien*, northeastern Kwangtung, in the central marketing system centered on the seat of Li-ling *hsien*, Hunan, and in the westernmost strip of Yin *hsien* and Feng-hua *hsien*, Chekiang. All of these areas are hilly to mountainous in topography, relatively deficient in arable land, and removed from large urban centers.

For evidence that marketing systems do actually develop in the sequence called for by these models, let us refer once again to the two empirical cases in the Szechwan Basin diagramed in Figures 2 and 3. In the former case, it will be noted that standard market towns are, as called for by Model A, all situated on the roads connecting higher-level markets. But what about the temporal sequence? Were the standard markets in fact established in each case at a time when what later became higher-level market towns were already there and connected by roads—as called for by the intensification model? Was there a time when the road connecting each pair of what are now higher-level market towns passed through no standard market town? For fourteen of the towns shown—those in Chin-t'ang *hsien*—the reign period when each was established is recorded in the district gazetteer. The oldest of the central places shown, Huai-chou *chen*, established in the seventeenth century, is today an important junk port on the T'o river and a central market town. By the end of the Ch'ien-lung reign (1796), Chao-chia-tu, Liao-chia-ch'ang, Hsing-lung-ch'ang, and Wu-feng-ch'i had all been established; each of these is today an intermediate market town. The only town already founded by that date which today does not support a higher-level market is Pai-kuo-ch'ang, a lesser port on the T'o river between Wu-feng-ch'i and Huai-chou *chen*. At the end of the eighteenth century, therefore, it would appear that the landscape supported one intermediate market town (Huai-chou *chen*) and six standard market towns (the five intermediate markets of the present day plus Pai-kuo-ch'ang). The area was, then, approximately at the stage when only the first of the new level of markets has been established—as depicted in Figure 5.5 (Model A). All the remaining towns on the landscape are more recent additions: Chao-chia-ch'ang and Kao-pan-ch'iao, founded in the Chia-ch'ing reign; Fu-hsing-ch'ang in the T'ung-chih reign; Niu-shih-tjen, San-huang-miao, and San-ho-ch'ang in the Kuang-hsü reign; Mao-tien-tzu during Hsüan-t'ung; and Ts'ai-tzu-pa in the early years of the Republic. Furthermore, each was established on the road connecting two already existing markets, and each supports a market which is only standard. Thus, the developmental sequence as well as the contemporary distribution of markets conform to our model. It will be noted that the area in question took approximately 125 years to pass through the climactic phase of the intensification cycle—from Figure 5.5 to Figure 5.6.

A similar analysis of the landscape depicted in Figure 3 (Part I) is not possible

because the dates at which the various markets were established are unfortunately not recorded in the relevant district gazetteers. However, a situation which I was able to observe in 1949 lends support to the developmental sequence called for by Model B. Although roads are not shown in Figure 3, those connecting higher-level markets did indeed pass through no standard markets, as called for by Model B. The most important road in the area depicted in Figure 3.1 is that which leaves the East Gate of Chengtu and passes from Niu-shih-k'ou to Ta-mien-p'u and on to Lung-ch'üan-i, all higher-level markets. A reference to Figure 3.3 will make it clear that the highway in question would in one stretch presumably follow the boundary between the marketing areas of Kao-tien-tzu and Lai-chia-tien, as indeed it did. The relevant finding is that the two largest *yao-tien* in the whole area—Sha-ho-p'u and Hung-men-p'u—were situated on the highway at precisely the places where an intensified Model B would call for new markets—Sha-ho-p'u at the point equidistant from Kao-tien-tzu, Lai-chia-tien, and Niu-shih-k'ou; and Hung-men-p'u at the point equidistant from Kao-tien-tzu, Lai-chia-tien, and Ta-mien-p'u. Each of these *yao-tien* already in 1949 included several dozen shops, and it was clear to my informants as well as to me that if new markets were established along the highway outside the East Gate they would be established at those sites. Another case of relevance here is reported by Spencer for Chien-wei *hsien*, most of which lies in the fertile Min river valley to the southwest of Chengtu: the site of San-chiao-ssu, a new market established there in the 1930's, was "chosen on a drainage divide midway between three other [market towns]."¹⁰⁴

Let me now summarize the essential differences between the final intensified version (see Figure 5.6) of the two spatial models. Each standard market is dependent on *two* higher-level markets in distributions of the Model-A type but on *three* in Model-B distributions. Each intermediate marketing area is equivalent to *four* standard marketing areas in the case of Model A (the higher-level market's own standard marketing area plus one-half of the marketing area of each of the six dependent standard markets), but to only *three* standard marketing areas in the case of Model B (the higher-level market's own standard marketing area plus one-third of the marketing area of each of the six dependent standard markets).

It follows that an intermediate marketing area is more inclusive of villages in the case of Model A than of Model B: in the former case ideally seventy-two villages are incorporated, in the latter only fifty-four. Since settlements tend to be more sparsely distributed in mountainous environments of the Model-A type, the size of Model-A intermediate marketing areas is also greater in terms of absolute units of area. For instance, the two complete intermediate marketing systems depicted in Figure 2 (Model A) average 235 square kilometers in area, while the two complete intermediate marketing systems shown in Figure 3 (Model B) average 105 square kilometers. The contrastive models also lead us to expect that the disparity in absolute size between the two types of intermediate marketing systems will be greater in terms of area than of population, for while the number of villages per intermediate marketing system is smaller in Model B than in Model A, each village is on the average more populous in the former case.

Finally, as might be expected in the mountains, Model-A development results in a

¹⁰⁴ J. E. Spencer, "The Szechwan Village Fair," 1940, caption to Figure 3, p. 51.

comparatively simple network of roads (see Figure 5.6). Roads connecting intermediate markets pass through one standard market, and this same system of roads serves to connect intermediate markets to all higher-level central places. In the case of Model B, however, there are two sets of roads which connect higher-level markets; one set passes through no standard markets, the other through two. The first set serves the standard marketing system and the central marketing system; the second set serves the intermediate marketing system and the city trading system.

It will be noted that both models show eighteen villages per *standard* marketing system at the conclusion of the intensification cycle, as at its onset. However, in absolute area and in population, standard marketing systems differ consistently in the two models: those in Model-A structures tend to be larger in area and smaller in population than are those in Model-B structures.¹⁰⁵

Let us now put aside the differences between the two models and consider the general features of the intensification cycle predicted by both. Village-to-market ratios begin low (six in Figure 5.1), increase gradually to eighteen (Figure 5.2), then on to the 24-30 range (Figure 5.3), and to the 30-36 range (Figure 5.4), at which point minor markets begin to form. Ratios may rise to the 40's, or even 50's in the case of Model A, before the first of the new *standard* markets emerge (Figure 5.5).¹⁰⁶ As new standard markets are established, the village-to-market ratio drops—precipitously when most of the new markets are founded within a short time of one another. When the whole set of new markets is established before new villages have completely filled out the landscape, the ratio drops below eighteen and then gradually increases to the average of the equilibrium model.

Can an empirical test of the theory be devised? One can cite many cases like that of Chieh-yang *hsien*, noted above, whose village-to-market ratio moved from somewhat over twelve to nearly forty in the forty years from c. 1895 to 1935. But were new markets being established in Chieh-yang *hsien* during the 1930's and 1940's, as the theory predicts? Was there a drop in the ratio as new standard markets were formed?

¹⁰⁵ To cite an example from southern Szechwan, one may contrast Nan-ch'uan *hsien*, whose terrain is almost wholly mountainous, with its immediate neighbor, Pa *hsien*, which incorporates some sizeable alluvial plains along the Yangtze and Chia-ling rivers. Marketing structures in the former approximate Model A almost exclusively, whereas those in the latter approximate Model B in considerable number. Accordingly, standard marketing systems (in their manifestation as townships—see below) are in Nan-ch'uan larger in average area (76 sq. km. vs. 41) but smaller in population (7,659 vs. 11, 558) than in Pa *hsien*. The contrast between standard marketing systems included in Model-A structures as against those distributed in accordance with Model B is more consistent with respect to area than to population. For, as shown in Table 1 (Part I) and in Table 5 below, at very high levels of population density—which, of course, tend to be associated with fertile plains—the population of standard marketing systems may be seen to vary inversely with density and hence *directly* with area.

¹⁰⁶ One expects the ratios to rise higher in the case of Model A than of Model B because intensification is proceeding toward the point where the 18 villages of the original standard marketing area will have increased to 72 in the former case but only to 54 in the latter. If it be assumed for purposes of comparison that the first of the new set of standard markets will be established only when the potential area of each has come to include 12 villages, then the critical point is 54 villages for Model A as against 42 villages for Model B. Furthermore, since the villages in Model-A landscapes normally consist of fewer households, the minimum number required to support a new standard market may be higher than is the case with the larger villages on Model-B landscapes. It is noteworthy that the only village-to-market ratios in excess of 50 which are well authenticated in the literature have been reported for a hilly region on the Shantung peninsula: In the British territory of Wei-hai-wei there were at the turn of the century, 315 villages but only 6 market towns. Reginald F. Johnston, *Lion and Dragon in Northern China* (New York, 1910), p. 129.

I do not have the answers. Ideally, we should have the number of markets *and* villages for a given *hsien* at several points in a time span which covers the entire intensification cycle, and I have yet to discover such a series of data for any one *hsien*.

But there are several kinds of available data which can be analyzed in an attempt to disprove or support the theory. A remarkable official report on Kwangtung province, revised during the 1890's, provides for every *hsien* the number of both markets and villages.¹⁰⁷ I have computed ratios for nine regions of the province, as defined in Figure 6. When these regions are ordered according to the destiny of rural population (with correlates closely in an agrarian society with agricultural productivity per unit of total land area), they array themselves in the following order:

<i>Region</i>	<i>Rural Population Densities: Persons per sq. km.¹⁰⁸</i>	<i>Average Village-to-Market Ratios¹⁰⁹</i>
Hainan	63	13.6
North Hakka	64	14.9
Northeast Hakka	90	19.0
West Peripheral	116	17.5
Northwest	123	19.1
West Central	187	23.1
East Central	213	23.4
Teochiu	261	31.2
Central	356	17.9

If we assume that intensive settlement was earlier and/or that development proceeded more rapidly in the regions with more productive and hence more densely populated land, then this ordering of the regions should be related to stage in the intensification cycle. When village-to-market ratios are supplied for these regions in the same order (see above), the evidence is wholly compatible with my hypotheses concerning the intensification cycle. Hainan and the North Hakka region, the two most remote, underdeveloped, and underurbanized¹¹⁰ portions of the province in the 1890's, have low ratios, suggesting that in these two regions rural settlement patterns had for the most part not yet reached the first stage of stable equilibrium; at that time, these regions appear to have been at a point part way between those depicted in Figures 5.1 and 5.2. In the next three regions shown—more intensely settled but little urbanized

¹⁰⁷ Chang Jen-chün (see Footnote 96 above). The number of markets is for some reason omitted in the cases of Kao-yao *hsien* and *Ch'ih-ch'i t'ing*. For purposes of computation, the former was assumed to have 34 and the latter 2, in accordance with the ratios of their contiguous neighbors.

¹⁰⁸ The regional population figures which were used in computing population densities are estimates based on a number of more recent *hsien* enumerations. They assume a total population for the province in 1897 of approximately 26 million and a rural population of 23.4 million.

¹⁰⁹ These ratios are the number of villages per rural market. I have estimated, on the basis of data supplied by gazetteers for the *hsien* in which the various cities are located, that of the putative total of 1691 markets for Kwangtung as a whole some 73 were strictly urban. These have in each case been excluded from the regional total of markets prior to computing ratios.

¹¹⁰ The growth of Hai-k'ou and Shao-kuan into something approaching cities is a 20th-century development.

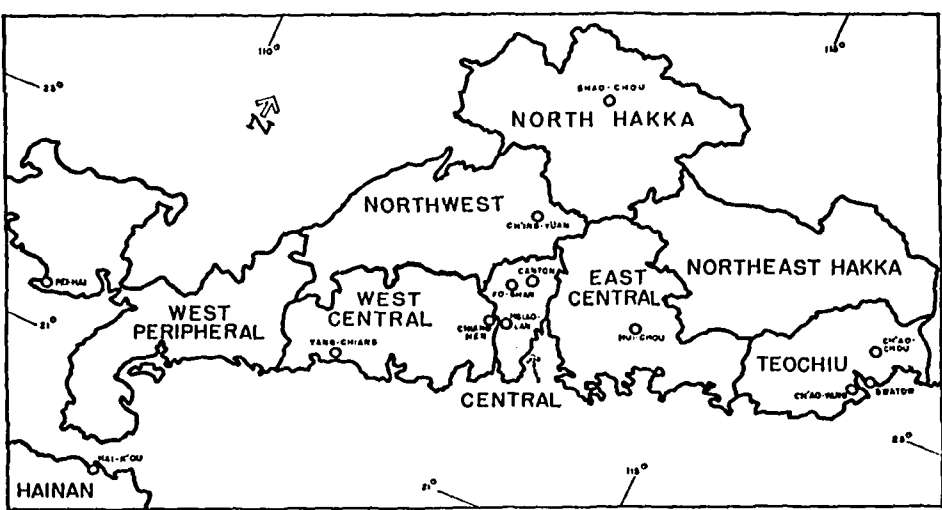


FIGURE 6. Kwangtung, 1890's, defining regions for which village-to-market ratios have been computed and showing the major urban centers.

—rural settlement appears on the average to have reached the stage of the first equilibrium (Figure 5.2). The two regions next in line in the above list, those east and west of the Canton delta, were fairly densely populated, and each boasted a number of moderately large cities; they appear, in the 1890's, to have moved well into the intensification cycle (see Figure 5.3). The Teochiu region, which includes the Han river delta, a densely populated area which was highly urbanized even before Swatow was opened as a treaty port in 1858, appears in the 1890's to have been at the more advanced stage shown in Figure 5.4. Finally we come to the Central region, which includes most of the Pearl river delta, Canton (a regional city, the greatest metropolis of the province, and a treaty port since 1842) together with other important cities—unquestionably the most highly urbanized region of the province and the one with the most densely settled rural population—and at this point in the ordered listing of regions the village-to-market ratio drops to a figure just below eighteen. This strongly suggests that throughout most of the Central region a new set of standard markets had already appeared by the end of the century, bringing the intensification cycle nearly to completion.

Before a second relevant case can be cited, a refinement of the theory as heretofore presented is desirable. The pressures which lead to intensification of the landscape can, quite simply, be summarized under two headings: 1) an increase in the density of households on the land, and 2) an increase in the degree of household participation in the marketing process.¹¹¹ It would be generally agreed, I believe, that in premodern

¹¹¹ The two factors are interdependent, at least in certain circumstances. For instance, once a given landscape has been fully occupied and all of its arable land brought under efficient cultivation, further population growth may eventually precipitate a decline in the average amount of marketing per household. When the addition of another person to the labor pool working a given farm increases production by an amount which is less than he consumes, then the household in question will net a smaller surplus with which to enter the market. In theory, the point may be reached where increases in the number of

times the second factor was by comparison very secondary as a determinant of the expansion in marketing facilities.

In any case, whether the increment of marketing activity stems from an increase in the number of households or from a decline in the self-sufficiency of households, it is simplistic to imagine that the establishment of new markets is the *only* mechanism for absorbing it. Two other responses are obviously possible—the volume of trade on the average market day at already existing markets may be increased, and/or the number of market days per unit of time may be increased. That is, population growth and/or a decline in average household self-sufficiency may stimulate any or all of three contingent responses: an increase in the size of markets (i.e., the number of participants at market on the average market day), the addition of new market days to the traditional schedules, and an increase in the number of markets. It may be assumed that the first response is the most sensitive and virtually automatic. The addition of market days to the traditional schedule occurs through the conscious decision of market authorities,¹¹² who may act simply to relieve congestion of the market town's facilities or who may be motivated to stave off the establishment of new competing markets. Thus increases in market-day scheduling may be expected to occur ever more frequently in areas approaching the climax of the intensification cycle and to continue even after new markets are being established.

It will now be useful to recapitulate the cyclical theory of marketing intensification with all three factors in mind. In the first stage (from Figure 5.1 to Figure 5.2), as new villages are established, the only expected responses would be an increase in the size of the markets. During the second stage (Figures 5.2 through 5.4), not only will market size continue to increase, but markets will begin to add new dates to their schedules. During the stage of climax (Figure 5.5), the third and most drastic response—the establishment of new markets—occurs, accompanied by further increases in the frequency of markets as the old standard markets add new intermediate-market functions, and by a temporary decline in the size of markets. At the end of the cycle, as at the beginning, the only expected response to continued pressures would be an increase in the size of markets.

Let us now turn to a case which allows more sophisticated analysis. Data are drawn from the 1877 and 1937 gazetteers¹¹⁸ of Yin *hsien*, a large and varied district including the city of Ningpo. The data are such that the fate of each market operating in 1877 can be traced to 1937, and market schedules are provided for all extant

households through population growth could, by forcing households to consume an ever larger proportion of their product, so decrease the amount of marketing per household that the *total* amount of marketing done in the area would begin to decline. While change in this direction has surely occurred in China—it may, for instance, underlie a part of the economic stagnation which has been considered characteristic of the final stages of the dynastic cycle—it must only rarely have progressed to the point of decline in the total volume of market transactions. For one thing, households do not passively watch their surplus dwindle, but rather are stimulated to increase their marketable product by developing cottage industry, say, or by adding value to their agricultural produce through labor-intensive processing. Furthermore, declines in per capita income which stem from growing population pressure on the land are likely to increase marketing activity in staples as households begin selling their crops of higher quality grain (rice or wheat) in order to buy cheaper staples (kaoliang, millet, maize or sweet potatoes) of inferior quality. Cf. J. Lossing Buck, *Chinese Farm Economy* (Chicago, 1930), pp. 356-365.

¹¹² Cf. Spencer, p. 52: "Since the fair pattern [i.e., market-day schedule] is determined by the village [i.e., market-town] elders in their own way, one cannot lay down any simple limits of business volume or patronage which produce certain frequencies."

¹¹⁸ *Yin hsien chih*, Kuang-hsü 3, ch. 2. *Yin hsien tung-chih*, Min-kuo 26, *Yü-ti chih*, ts'e 3 and 7.

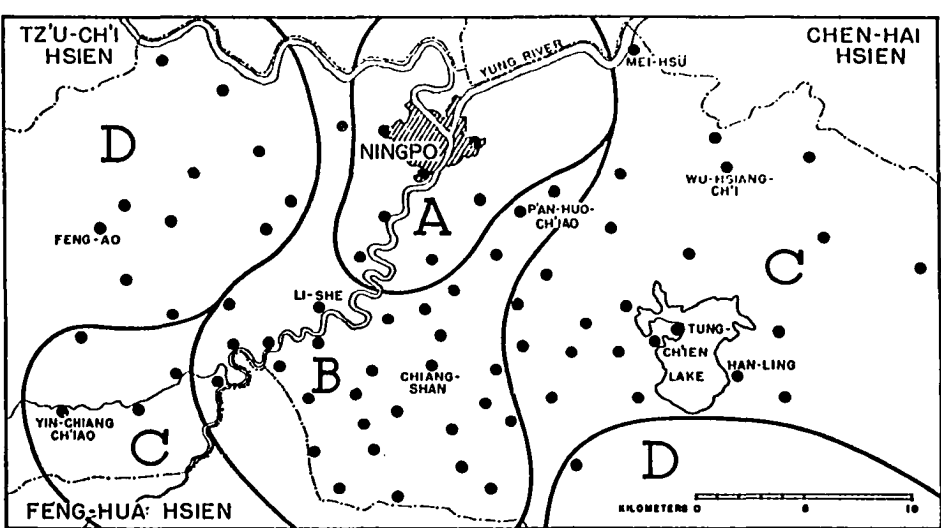


FIGURE 7. Yin *hsien*, Chekiang, showing four zones of differential development, 1877–1937, and market towns as of 1937. Five of Yin *hsien*'s market towns are off the map, three to the east in Zone C and two to the southeast in Zone D. (Market towns outside the boundaries of Yin *hsien* are not mapped.)

markets on both dates. In addition, the 1937 gazetteer provides a complete listing of all villages, so that village-to-market ratios can be computed as of that year. Figure 7, which includes most of the *hsien* and maps the distribution of markets as of 1937, shows a division of the area into four more or less concentric zones. Zone A completely surrounds the city in the heart of the Ningpo Plain; Zone B includes most of the remainder of the alluvial plain south of the city; Zone C is more varied in topography, including hills and river valleys to the east, south and southwest; while Zone D consists of hilly or mountainous areas which, in Yin *hsien*, occur in the west and the southeast. My theory predicts that Zone D should be least advanced and Zone A most advanced in the intensification cycle.

For Zone D the facts are as follows: Each of the fourteen markets extant in 1877 was still functioning in 1937, and no new markets had been established. The only change in market-day scheduling during the sixty years in question had been the reduction of one market's schedule from three times to twice per *hsün*. The number of villages per market in 1937 was somewhat over eighteen.¹¹⁴ These three sets of facts all fit perfectly with the assumption that in 1877 Zone D had been in the first stage of the cycle (i.e., in between the situation depicted in Figures 5.1 and 5.2) and that during the next sixty years intensification was limited to the addition of new villages to the landscape—filling out the village complement of already established markets—and to an increase in the size of markets.

¹¹⁴ Village-to-market ratios were computed for the various *ch'ü* into which the *hsien* was divided in 1937. Since *ch'ü* boundaries do not correspond closely to either zonal or marketing-area boundaries, the ratios within each zone cannot be precisely cited.

For Zone C, the facts add up to a rather different picture. During the sixty years in question, the number of markets rose from twenty-three to thirty. This increase in the number of markets was accompanied by a still greater rise in the frequency of market schedules, resulting in a 120 per cent increase in the number of market days per *hsün* (from 54 to 119) within the zone. The village-to-market ratio for Zone C in 1937 was similar to that for Zone D—somewhat over eighteen. All of these facts accord with the assumption that as of 1877 Zone C had already moved well into the intensification cycle (about as shown in Figure 5.4), that the sixty years in question included precisely that part of the cycle during which market schedules are most likely to be increased, and that in 1937 it had almost but not quite finished the climactic stage of new market formation. These interpretations imply that whereas in 1937 village-to-market ratios were rising in Zone D, they were falling in Zone C.

The facts concerning Zone B include a still higher percentage increase in the number of markets (from twenty-one to thirty-one) during the sixty years in question, accompanied by a less staggering rise in market-day frequency, yielding a 92 per cent increase in the number of market days per *hsün*. It should be noted that the average frequency of Zone-B markets in 1877 had been higher than that of Zone-C markets (2.9 vs. 2.4 per *hsün*). The number of villages per market in 1937 was significantly lower in Zone C than in any other parts of the *hsien*—approximately fifteen. These various facts fit well together and accord with the assumption that in 1877 Zone B had been still more advanced than Zone C, that even then it had been approaching the climax of the cycle (approximately as shown in Figure 5.5), some increases in scheduling having already occurred, and that during the sixty years in question the new set of standard markets had been completely formed, but without, as yet, a fully fleshed-out complement of villages for each.

In moving on to Zone A, we come to a situation which I believe to have been anomalous in traditional China. It will serve nicely to illuminate the nature of modern change.

Modern Change

In asking how traditional Chinese marketing changed during the first half of the twentieth century, we meet something of a paradox: Despite signs of economic modernization on all sides, periodic marketing flourished. According to C. K. Yang (p. 6):

The building of railways and the impact of modern industrialism are rapidly changing the status of towns and the economic organization of the entire region. . . . But, in this changing setting, the system of periodic markets is still going strong.

And indeed, in most parts of China the apparent state of the periodic marketing system in the pre-Communist era was one of robust health. In the course of the Republican period, most of the established markets grew larger, and many added new market days to their schedule. New standard markets were being founded right up to the 1940's, and at mid-century the countryside of mainland China supported more periodic markets than ever before. Modern elements introduced into the marketing system served—or so it seemed—only to fan traditional fires.

This paradox is resolved by the fact—predicted by general theory and empirically

verified in the case of China—that true modernization of periodic marketing in a restricted area inevitably gives new life to the *traditional* marketing system throughout a more extensive surrounding area. To understand just why this is so, however, requires a brief analysis of the transition from traditional to modern change.

That transition is, of course, a gradual process. Many ingredients of modern development are present in traditional patterns of change, and the initial stages of modernization may amount to little more than a recombination of familiar factors. This becomes readily apparent when we consider the metamorphosis from a traditional Chinese market town to a modern trading center. Among the interrelated ingredients of this transformation are increases 1) in the total volume of trade carried on in the town, 2) in the number of "marketing hours" per week, 3) in the proportion of permanent to mobile firms, and 4) in the degree and scope of economic specialization.

Let us note an important fact at the onset: as one moved up the hierarchical scale of central places in wholly traditional times, increases in precisely the same set of factors characterized each jump. The total amount of trade was greater in the intermediate market town than in any of its dependent standard market towns, and so on up the scale. Market-day schedules tended to increase as one moved from lower-level to higher-level markets, daily schedules being common in central markets of the nineteenth century. The proportion of permanent to mobile firms on the supply side of market transactions likewise steadily increased, as did the absolute number of shops and firms in the town. Finally, as one moved up the scale of central-place types, an ever increasing proportion of participants in trade played economic roles which were functionally specific, i.e., more restricted and more precisely delimited in scope. Producers who were also their own salesmen, common in the standard market, were exceptional in the central market. The "general store" of the standard market gave way to specialized shops in the central market; the dealer in "local products" became the dealer in peanuts or rice. Greater differentiation in economic function characterized each step up the traditional central-place hierarchy as well as the transformation of traditional markets to modern towns.

In a sense, then, the evolution of the traditional Chinese market town into a modern trading center recapitulates the slower evolution of intermediate to higher-level market towns in the wholly traditional context. Of the four factors cited, increases in the total volume of a town's trade appear to be prior, in the sense that change toward more frequent market schedules, toward permanent as against mobile firms, and toward greater specialization and differentiation are all dependent on increases in demand. In the case of modern as well as traditional change, that increment may be derived in part from an increase in the number of households participating in the marketing process and in part from an increase in the amount of marketing done by each household. In the case of traditional "growth," the former contributes by far the greater part: declines in household self-sufficiency are in the aggregate minor and sporadic. Modernization, however, is characterized by a gradual commercialization of the agrarian economy such that increases in the amount of marketing done by the average household contributes to rising demand in ever more significant degree.¹¹⁵

¹¹⁵ J. Lossing Buck's study of the rural economy in selected Chinese provinces, 1922-25, gives some indication of the levels of self-sufficiency attained by peasant households under more or less commercialized conditions. Some 1,389 households in eight North China localities were found on the average to furnish

It should also be specified that increases in the number of households participating in the marketing process—stemming in the case of traditional “growth” almost entirely from the steady intensification of households on the landscape—are in the case of modernization achieved primarily through enlargement of the area served by the marketing center. The modernization of marketing systems, then, proceeds on two legs: an extension of marketing areas and a comparatively rapid contraction of household self-sufficiency.

The term “modern” is used in this connection because dramatic changes in both regards stem in the last analysis from power-driven mechanization. Modernization of a traditional marketing system can commence only when it is linked by economically efficient transport to outside systems of production which are likewise economically efficient. The level of efficiency needed to set *modern* changes in train was achieved in China only when cities were linked by steamer, railroad, or improved roads to centers of industrial production, whether the latter were external or—after 1895—internal to China itself.

The introduction of modern transportation in China was, in the early decades, almost entirely limited to the routes linking major urban centers. Steamships plied between Hankow and Nanking, or between Amoy and Swatow. Railroads were built from Nanking to Shanghai or from Tsingtao to Tsinan. Improved roads suitable for trucks and buses linked Ch'ang-shou to Shanghai, or Tientsin to Peking. The costs of transport were thereby drastically reduced as between the hubs of various trading systems.¹¹⁶

What happens to the agrarian economy within a city trading system thus linked to exotic supply and demand structures? Let us assume that the city in question has been connected by a new rail line to a metropolis with a major textile industry, prior to which the high cost of transport had prevented the sale of any raw cotton by city merchants to the metropolitan industry and had, within the city's trading system, limited the sale of imported machine-loomed textiles to the markets of the city itself. In consequence of the new link, the buying price of raw cotton will rise not only in the city but also in every market of the city's trading system. Sharp differentials in the buying price of cotton within the system—highest in the city, markedly lower in the first ring of market towns around it, lower still in towns of the third ring, and so forth—still obtain, for there has been no change in the high cost of local transport. However, since the price level has risen right down the line, as far out as the second or even third ring of rural markets the price offered for cotton may have risen suffi-

from their farms nearly three-quarters of the goods and services consumed annually. By contrast, some 981 households in five localities of East Central China were shown to furnish from the farm less than three-fifths of their annual consumption on the average. “This is indicative [notes the investigator] of the greater commercialization of agriculture in East Central China, where the large city population of the nation is centered.” The selected rural households of East Central China purchased 98 per cent of their clothing, as against 60 per cent for the North China households; they purchased 24 per cent of their food, as against only 12 per cent for the North China households. *China's Farm Economy* (Chicago, 1930), pp. 391-93.

¹¹⁶ Buck's monumental study of China's rural economy, 1929-33, provides data on the average cost, in silver dollars per ton-mile, of transporting agricultural products to market. The most commonly reported traditional forms of transport averaged, for both short- and medium-distance hauls, as follows: junk 21¢ per ton mile, animal-drawn cart 40¢, wheelbarrow 63¢, pack donkey 71¢, and runner using a carrying pole \$1.39. By contrast, the costs per ton-mile were, for medium-distance hauls, 8¢ by steamboat and 9¢ by railroad. Data computed from J. Lossing Buck, *Land Utilization in China, Statistics* (Nanking, 1937), Tables 4 and 5, pp. 346-47.

cently to stimulate cotton culture. Similarly, the potential selling price of machine-loomed textiles will fall not only in the city but also in all markets within its trading system, with the result that imported textiles, formerly priced out of even the first ring of market towns around the city, may now achieve ready sale as far out as the second. In the case of manufactured items less bulky than textiles, the reduction in selling price brought about by the new rail line may suffice to give them a sale in even the most distant part of the system. The degree, then, to which agriculture is commercialized, cottage industry suffers, and consumption patterns alter decreases as one moves from marketing subsystems close to the city to those farther away; some degree of commercialization is possible even in subsystems at the farthest reaches of the trading area of a city which is linked to the outside world by modern transport.

As roads are improved and mechanized transport introduced *within* the city's trading area, these facilities radiate out from the city, extending eventually to the intermediate and central markets dependent on it. When modern transport connects a central market town to the city at the hub, commercialization spreads within *its* marketing system to dependent intermediate marketing systems theretofore little affected.

In this manner, marketing systems at the rim of the city's trading area are partially commercialized before modern transport has even extended to them much less developed within them, and they are further commercialized when the system has been penetrated only by the single modernized route which links its hub to a higher-level central place. Thus it is that agrarian modernization within a city trading system normally begins with successive waves of commercialization whose advancing rim is always well ahead of the area served by modern transport.

At the point in this process where improved roads have been built from the city to most of the central and intermediate market towns immediately surrounding it, it is apparent that the half dozen standard marketing systems nearest to the city will be well served by modern roads. The roads will, of course, not have been built for the special benefit of the peasantry within this area, and in this early phase the peasants will not themselves use any modern means of transport. But they *will* use the roads, and it should be noted that a marked increase in economic efficiency occurs when a rickshaw, a wheelbarrow, an animal-drawn cart, or even a runner with a carrying pole shifts to a straight and smooth all-weather road from a winding path or track which is mud half the year and marred with ruts the other half. At this stage, the death knell is sounded for the ring of standard markets immediately surrounding the city. At a later stage, when roads between the central markets and each of their dependent intermediate markets have been improved, standard markets in the next ring of market towns out from the city will have been obviated and die.

Let us be clear just why marketing activity is shifted from standard to higher-level markets in the course of modernization. To begin with, commercialization alone will induce peasant households to market more often in their intermediate market long before their standard market town is served by any modern transport. In traditional times, their needs for imported items had been so limited and sporadic that the price advantage at their intermediate market did not normally warrant trips there. Once peasant requirements in the way of imported goods have multiplied, however, more frequent trips to the higher-level markets are obviously advantageous. Moreover, the intermediate market, by virtue of its modern link to a higher-level central place, now

offers a greater variety of goods at lower prices than had previously been possible. In addition, the improved roads which connect higher-level markets to the city necessarily pass through a number of standard marketing areas and thereby reduce the friction of distance between certain villages and their intermediate market; villagers situated near the improved roads may find it feasible to market their produce directly at the intermediate market, thereby taking advantage of the higher buying prices offered there. In the meantime, the larger volume of trade enjoyed at the higher-level markets, as peasant marketing shifts away from standard markets, makes possible a greater degree of specialization and differentiation, and the consequent rise in business efficiency enables firms in the higher-level markets to quote still more favorable prices *vis-à-vis* neighboring standard markets. The *coup de grace* for standard markets comes when transport facilities begin to be improved within the intermediate marketing system itself. Not only does the peasant need to attend his intermediate market more often, not only is it increasingly beneficial for him to do so, but it now becomes possible for even the least advantageously situated peasant to make the trip regularly in a reasonable amount of time.

Thus it is that the transformation of higher-level market towns into modern trading centers is achieved only at the cost of declining demand in neighboring markets. As the number of participants decreases in one of these smaller markets, schedules are likely to be reduced, and finally the market in the disadvantaged town is closed. These responses, it will be noted, are just the reverse of those which follow rising demand within traditional marketing systems. And here, of course, we encounter a sharp reversal of traditional processes. The intensification process, whereby marketing systems "developed" in traditional times, led to a steady *reduction* in the size of marketing areas as new market towns were continually added to the landscape. The process whereby market towns are transformed into modern trading centers, however, involves a steady *increase* in the size of marketing areas as old markets are closed.

The immediate vicinity of Ningpo, Zone A on Figure 7, was well into the early stage of this process as of 1937. At the time of our baseline sixty years earlier, Zone A had supported, outside the city proper, altogether eleven periodic markets. Those situated at the distant edge of the built-up area beyond the south and west gates of the city followed 1-per-*hsün* schedules: 3 and 8, respectively. Six of the other markets, including the suburban market outside the east gate of the city, followed 2-per-*hsün* schedules, while the remaining three markets had 3-per-*hsün* schedules. By 1937, four of the six 2-per-*hsün* markets had died. Of the 3-per-*hsün* markets, one had died, while the remaining two had reduced their market schedules to twice per *hsün*. During the sixty years in question, the schedules of the suburban markets were not changed. At some point after 1877, presumably in the years prior to the onset of modernization, one new market was founded in Zone A—on the road leading to the south gate; it opened with a 2-per-*hsün* schedule, which was not subsequently increased. Thus in 1937, apart from the three suburban markets, Zone A had altogether only four market towns, each on a 2-per-*hsün* schedule. One of these, listed in 1937 as having only four or five shops, appeared to be on the verge of extinction.

Zone A, then, contrasts most sharply with the immediately adjacent Zone B. While the latter experienced a 30 per cent increase in the number of markets and passed through a veritable paroxysm of schedule increases, the former witnessed a decline in

both the number of markets and the frequency of market schedules. During the very years which saw the number of market days per *hsün* in Zone B increase from 6x to 117, their number in Zone A decreased from 23 to 12.

It is only in Zone A, then, that the periodic marketing economy has been transformed into a modern town economy. True modernization occurs only when a modern transport network is developed *within* an already commercialized central marketing system to the point where the standard markets of the system are obviated and die.¹¹⁷ By contrast, commercialization without intrasystemic transport improvement amounts to a kind of false modernization. It means an increase in the total volume of trade at each market, with results in no way different from those predicted by the theory of traditional change already presented: existing markets increase their frequency and new markets are formed. And the *traditional* periodic marketing system flourishes as never before. As in Zones B and C on the map of Yin *hsien*, commercialization in advance of transport modernization has the effect of speeding up the traditional intensification cycle.¹¹⁸

¹¹⁷ As of the early 1930's, all the rivers shown in Figure 7 were well served by steam launches operating out of Ningpo. Surfaced roads had been completed from the city south to Feng-hua, northwest to Tz'u-ch'i and to Kuan-hai-wei, and northeast to Chen-hai. Motor-bus service connected Ningpo with Feng-hua, Chen-hai and Tz'u-ch'i. *China Industrial Handbooks: Chekiang* (Shanghai, 1935), pp. 115-122, 847, 872.

¹¹⁸ The markets of Zones B and C exhibit more irregular than regular market-day schedules, and in this regard Ningpo's hinterland is typical of fertile plains around other modernizing cities. This situation arises because the strong commercialization to which such areas are subjected quickly brings them to the climax of the intensification cycle. As new markets are founded and old markets increase the frequency of their schedules, it becomes increasingly difficult for a standard market to achieve or maintain scheduling compatibility with all the intermediate markets on which it is dependent. In many cases, the only way to avoid conflict altogether is to alter the original schedule somewhat from its regular pattern.

As an example, we may take a Model-A distribution in which a standard market with a regular 2-7 schedule is dependent on intermediate markets with 3-8 and 5-10 schedules. If the intermediate markets increase their market-day frequency by adopting regular 3-per-*hsün* schedules as shown, then the standard market is likely to alter its schedule to an irregular 1-7, so as to remain entirely compatible with both intermediate markets. The same change would be advantageous if both intermediate markets adopted *even* 5-per-*hsün* schedules. But if both intermediate markets adopted *odd* schedules, then one would expect the standard market to change to an irregular 2-8 schedule—a change which also maintains the continuity of one market day. (In the case where one intermediate market adopts an odd schedule and the other an even schedule, the standard market would naturally persist in its regular 2-7 schedule so as to avoid complete conflict with either.)

This kind of situation gives rise to several new sets of irregular schedules, namely:

1-7	1-3-7	1-3-5-7	1-4-7-9
2-8	2-4-8	2-4-6-8	2-5-8-10
3-9	3-5-9	3-5-7-9	1-3-6-9
4-10	4-6-10	4-6-8-10	2-4-7-10
1-5	1-5-7	1-5-7-9	1-3-5-8
2-6	2-6-8	2-6-8-10	2-4-6-9
3-7	3-7-9	1-3-7-9	3-5-7-10
4-8	4-8-10	2-4-8-10	1-4-6-8
5-9	1-5-9	1-3-1-9	2-5-7-9
6-10	2-6-10	2-4-6-10	3-6-8-10
[1-7]	[1-3-7]	[1-3-5-7]	[1-4-7-9]

The 2-per-*hsün* schedules of the first column arise in the situations already illustrated. The 3-per-*hsün* schedules of the second column and the 4-per-*hsün* schedules of the third column are favored by markets dependent on higher-level markets all of which adopt odd, or all of which adopt even, every-other-day schedules. The 4-per-*hsün* schedules in the fourth column are favored by markets in interdependent systems with regular 3-per-*hsün* schedules.

False modernization is nowhere better illustrated than by marketing in the vicinity of Tsou-p'ing, Shantung, as studied in 1932-33 by C. K. Yang. Chou-ts'un, the central market nearest to Tsou-p'ing, had since 1904 been linked by rail to Tsingtao, an ocean port to the east, and to Tsinan, a city to the west which, by 1912, also had rail connections with Tientsin and Pukow (across the Yangtze from Nanking). By 1933, commercialization was marked throughout the central marketing area centered on Chou-ts'un. To cite only the most salient example, a majority of the cloth sold in two of the system's intermediate markets and in several of its standard markets was machine-loomed, and cotton was grown as a cash crop wherever conditions were suitable. Both the raw cotton leaving the system for the spinning mills of Tsinan, Tsingtao, and Tientsin, and the cloth entering the system traveled by rail and passed through Chou-ts'un. Yet the internal transport network which served the central marketing system consisted solely of dirt roads too narrow in many sections for carts to pass one another. The cotton grown in the region was collected in the following manner: "Farmers carry big packages of cotton on their backs, streaming to [standard] markets, where collectors pick out the good portions, pay a price for it by bargaining, take it to a storage house in [the intermediate market] town to be ginned and baled, and then ship it by pack animals or carts to . . . Chowtsun . . ." ¹¹⁹ C. K. Yang's study thus provides a classic case of a marketing system commercialized by virtue of the central market's long-standing modern transport ties with major cities but essentially unmodernized by virtue of the persistent traditionalism of the internal road system. More goods were carried in more carts to more shops in more markets more frequently convened¹²⁰—but there was no systemic change.

Not all of Shantung was so backward as Tsou-p'ing, however. Even before the dawn of the Republican era, signs of true agrarian modernization were apparent in a few districts. Here I draw on data provided by the 1911 provincial gazetteer.¹²¹ This compendium records for each of the 107 *hsien* in the province the number of rural markets. With the addition of data concerning the area and population of the various *hsien*, it has been possible to construct an informative table showing the classification of each district as of 1911 according to two variables—the number of square kilometers per market (i.e., the average size of marketing areas) and the density of population.¹²² It is apparent from Table 2 that the two variables are correlated in the following manner: *hsien* which are sparsely settled tend to have marketing areas of great size, while at the other extreme, *hsien* which are densely settled tend to have small

Scheduling compatibility is, of course, more difficult to manage in the case of Model-B distributions, in which each standard market is dependent on three higher-level markets, than in the case of Model-A distributions. This factor, too, fosters scheduling irregularity in the plains near modernizing cities.

¹¹⁹ C. K. Yang, p. 34. The transport system as a whole is graphically described on pp. 27-29; commercialization is analyzed on pp. 34-37.

¹²⁰ The schedules of all intermediate markets in the *hsien* had been doubled since the turn of the century. Tsou-p'ing *hsien* is credited with 14 markets by the 1911 provincial gazetteer, as against 26 found by Yang in 1932-33.

¹²¹ *Shan-tung t'ung-chih*, Hsüan-t'ung 3 (1911), ch. 1-2.

¹²² The population data used, however, are far from satisfactory. The volume published in 1916 by the Ministry of Interior on the population of Shantung in 1912 appears to be unavailable. Consequently the Chinese Post Office estimates for 1919 (*The China Year Book*, 1921-22, pp. 14-15) were used subject to correction on the basis of more reliable 1948 data. (The 1919 figure was adjusted in the case of *hsien* for which the 1919-1948 comparison indicated either a population increase of over 70%, or a net population loss.) The distribution of Table 2 would doubtless be less scattered if reliable population statistics were available for the computation of 1911 densities.

marketing areas. That the size of marketing areas should vary inversely with density of population is, as pointed out in Part I, only to be expected in a traditional context.

It will be noted, however, that several cases found in the lower-right portion of the table markedly weakened the correlation which it shows. A strong inverse association between two variables should show a concentration of cases in the "cells" which

TABLE 2—AVERAGE AREA PER RURAL MARKET, BY DENSITY CLASS OF *hsien*, SHANTUNG, 1911

No. of sq. km. per rural market	Population Density								Total
	— 119	120— 159	160— 189	190— 209	210— 229	230— 249	250— 299	300—	
20-39			1	1	2	3	9	7	23
40-59			1	3	2	2	5	5	18
60-79		1	1	3	3	4	8	2	22
80-119	2	3	1	4	2	2	3	3	14(20)
120-	5	2	4	2	2	2	6	1	15(24)
Total	7	6	8	13	11	11 (13)	22 (31)	14 (18)	92 (107)
Average area per market excluding 15 deviant cases	158	104	93	81	63	57	46	39	
Average area per market, 15 devi- ant cases only						173	140	110	

Source: *Shan-tung t'ung chih*, Hsüan-t'ung 3 (1911), ch. 1-2.

range from lower-left diagonally to upper-right, while cells at the upper-left and at the lower-right should contain few or no cases. In this particular table, the cells at the upper-left are indeed unfilled—that is, there were in 1911 no sparsely settled *hsien* in Shantung with small marketing areas—but in the cells at the lower-right are found a number of *hsien* with both high population densities and large marketing areas. These *hsien*, on the face of it, are anomalies, deviant cases which contradict the hypothesis that marketing-area size and population density are inversely related.

That hypothesis, however, is based on the premises of traditional change, and it will be remembered that true modernization leads to an increase in the size of marketing areas as smaller markets die. The more modernized the marketing systems within a *hsien*, therefore, the more likely it is that the average marketing-area size for that *hsien* will be abnormally large for its density class. Accordingly, the analysis offered here predicts that the fifteen deviant cases shown in the lower right-hand cells of Table 1—within the dark frame—will prove to have been modernized in 1911 to the point where some of the traditional standard markets had been closed.

When the "deviant" *hsien* are identified and located, it is notable that thirteen of the fifteen cases constitute three contiguous areas: one in western Shantung where the Grand Canal crosses the Yellow river; one, in the center of the province, through

which Shantung's first railroad was built in 1902 and within which internal transport was developed in connection with coal fields opened in the late nineteenth century; and one around Chiao-chou (Kiaochow) Bay. Let me illustrate early modernization with the last case.

The area in question includes three of the "deviant" *hsien*: Chi-mo on the east shore of the Bay, Chiao-chou on the west shore, and Kao-mi, inland to the northwest. In November, 1897, the peninsula at the southern end of Chi-mo *hsien* and all of the bayshore were occupied by German naval forces. The Kiaochow Leased Territory, subsequently acquired by Germany along with development rights in a larger region of Shantung, was quickly developed. The city of Tsingtao was founded on the site of a fishing village, and a modern harbor was completed by 1904.¹²³ A railroad, begun in 1899, was built through the three *hsien* in question, extending to the capital of Chiao-chou in 1901, to the seat of Kao-mi *hsien* in 1902, and on to Tsinan in 1904.¹²⁴ The line was described in 1912 as "a mighty artery full of blood and life . . . flowing through the Province" with the result that "the innumerable sleeping villages on either hand . . . are waking to fresh vitality and energy."¹²⁵ By 1911 the value of trade passing through Tsingtao had risen to 23.8 million taels.¹²⁶ Modern roads were extended throughout the leased territory and, in more modest dimensions, from railway stations in the three *hsien* most directly influenced by German enterprise.¹²⁷

In this restricted area, then, both commercialization and transport modernization proceeded at a rapid clip during the first decade of the century. And in consequence, markets died. Kao-mi *hsien* is reported in its gazetteer of 1896 to have twenty-four rural markets, whereas the provincial gazetteer of 1911 credits it with only twelve. Chi-mo *hsien*, with twenty-four rural markets in 1873—the number was probably larger by 1900—had only fifteen markets in 1911.¹²⁸ The anomalous combination of a densely settled population with large marketing areas is thus accounted for in these cases by modernization: A portion of the "marketing areas" in question were in fact enlarged modern trading areas.

It will be useful at this point to inquire into the spatial features of a modern trading system, in particular its relationship to the traditional marketing structure out of which it develops. The shape of the modern system is, of course, a function of *which* traditional markets die and *which* are transformed into modern trading centers. In this respect, the fate of particular markets on a modernizing landscape is essentially dependent on the spatial patterning and temporal sequence of transport modernization. A market town which is bypassed by a modern road is unlikely to develop into a modern town. In general, however, transport modernization within a city market-

¹²³ Robert C. Forsyth, ed., *Shantung, the Sacred Province of China* (Shanghai, 1912), pp. 113-137.

¹²⁴ P. H. Kent, *Railroad Enterprise in China* (London, 1908), pp. 140-148.

¹²⁵ C. J. Voskamp, in Forsyth (1912), p. 135.

¹²⁶ C. Yang, H. B. Hau, et al., *Statistics of China's Foreign Trade during the Last Sixty-five Years* (Shanghai, 1931), p. 91.

¹²⁷ Somewhat later the following was written by J. E. Baker, after a survey of communications in China: "It may be said that Tsingtau and the leased territory of Kiaochow is better supplied with modern roads than any other part of China. These fine motor roads wind . . . out thirty miles into the country . . . a constant reminder of what other parts of China could be under efficient government." In Milton T. Stauffer, ed., *The Christian Occupation of China* (Shanghai, 1922), p. 18.

¹²⁸ The number of rural markets was compiled from gazetteers by Yamane Yukio: "Min Shin jidai kahoku ni okeru teiki ichi" ["Periodic Markets in North China during the Ming and Ch'ing Periods"], 1960, p. 495.

ing system proceeds in accordance with rational principles whereby the routes connecting each city to its dependent central market towns are the first to be modernized, followed by the routes connecting each central market town to its dependent intermediate market towns, and so forth. When this is the case, standard market towns are at each point in the modernization process less likely than higher-level markets to be served by modern roads, and at no point in that process does a standard market town come to be served by modern roads which do not also connect it to higher-level market towns in both directions. Under these circumstances, it is precisely the standard markets which are most likely to be obviated in the modernization process. As we have noted in discussing the intensification of traditional marketing structures, standard markets are normally younger than the higher-level markets on which they are dependent. Thus, the first to perish in the course of modernization tend to be the markets which were last formed. One of the ironies of marketing modernization is that markets born during the first stage as a result of commercialization are for the most part fated to die during the second.

When marketing structures in a given area have been completely modernized, in the ideal case all traditional standard markets will have died while all traditional higher-level market towns will have been transformed into modern trading centers. At this point, the basic economic unit may be designated a modern trading system as opposed to a traditional marketing system. It is, in effect, a transformed intermediate marketing system, and a reference back to Figure 5.6 will indicate its spatial characteristics. If the six standard market towns shown are degraded to the status of villages and the limits of standard marketing areas expunged, then the remaining larger hexagons shown in Figure 5.6 may be taken to represent two versions of modern trading systems (of the lowest-level, most basic type). In the ideal case, a Model A system will be seen to include four complete rings of villages (sixty in all), plus part of a fifth ring, whereas the typical Model-B system includes three complete rings of villages (thirty-six in all) plus most of a fourth.

It will be noted that modern trading systems are by definition indiscrete. In the case of Model A, the entire fifth ring of villages is either on the theoretic boundary between systems or perilously close to it. In the case of Model B, the six former standard market towns are on the theoretic boundary, while twelve villages in the fourth ring are just inside or just outside it. Thus village overlap is far more pronounced in the case of modern trading systems than in the case of standard marketing systems. Figure 5.6 reminds us once again that the stable equilibrium model of the standard marketing system shows all eighteen villages unambiguously in one and only one marketing area. By contrast, the stable equilibrium model of the modern trading system shows in one case, Model A, sixty villages unambiguously in, plus an additional thirty of ambiguous orientation (in theory, twelve in, twelve out, and six shared); and in the other case, Model B, forty-eight villages unambiguously in, plus an additional eighteen of ambiguous orientation (in theory, six in, six out, and six shared).

Thanks to the pioneering research of Ch'iao Ch'i-ming, we have a description in the literature of at least one Chinese trading system of this kind: that centered on Yao-hua-men in Chiang-ning *hsien*, Kiangsu. Ch'iao's study was made in 1925, some seventeen years after the Shanghai-Nanking railroad, which serves the town, was opened to traffic, and at least a few years after the two roads which intersect in the

town were improved to all-weather standards. The town and its dependent area is situated on a fertile plain only a few kilometers to the northeast of Nanking—in an area where traditional markets must have been distributed in accordance with Model B. Ch'iao's map of the town's trading area¹²⁹ shows forty-nine villages dependent on Yao-hua-men alone and another nineteen villages dependent on Yao-hua-men and one or another of the neighboring towns—a very close approximation of the figures predicted by our Model B for a modern trading system. Other circumstantial details support this interpretation of the "rural community" described by Ch'iao: marketing in the town was daily; permanent shops of all kinds were found there; and the population of the trading area—17,400—was more than twice the average for standard marketing communities in comparable areas elsewhere. .

The demise of standard markets on the economic landscape has important social repercussions. Cultural lag and social inertia enable the standard marketing community to persist for a time after the periodic gatherings at the standard market town have come to an end. But inevitably the social horizons of the peasant—now in process of becoming a farmer—are extended toward the limits of the larger modern trading area. The range of his acquaintances expands to include initially townspeople and eventually residents of villages elsewhere in the trading system. The marriage area of his village is likely to grow accordingly. This extension of the limits to his social world is, however, accompanied by a breakdown of community. Intimate knowledge of, and effective concert within, a system embodying 50-75 villages is simply infeasible, and in time the cooperation which had been embedded in the natural system centered on the standard market becomes pointless or at best anomalous.

Hence the paradox: While the modernization of marketing systems leads to an expansion of social horizons, it is likely to involve a *contraction* of social community. And it gives new importance to the village. As standard marketing communities fade away, much of their communal significance devolves on the component villages, and a gradual change in emphasis places the self-interest of each little community above intervillage cooperation. In the traditional context—and here I refer to the Chengtu Plain as of 1949—children were permitted to choose playmates from neighboring villages, gangs were organized on an intervillage basis, people thought of themselves as going "outside" only when they crossed the boundary of the standard marketing community, and once in the outside world they were prepared to be identified by reference to their standard market town. But in a modernized rural economy—and here I draw on a recent description of the countryside in the Taipei Basin¹³⁰—children are allowed to play only with others from their own village, gangs are normally organized within the village unit, to leave the village is to go "outside," and in society at large "the average person's primary identification . . . remains with his own home village."

What can be said about the degree of marketing modernization in China as a whole? How typical was Yao-hua-men of rural China in 1949? What proportion of China's standard markets had died during the first half of the century, and what proportion of higher-level traditional towns and cities had modernized? Precise answers are of course elusive, but the general picture is reasonably clear. Agrarian moderni-

¹²⁹ Ch'iao Ch'i-ming, *Hsiang-t'sun she-hui-ch'ü hua ti fang-fa* (*Methods for Mapping the Rural Community*), 1926, facing p. 6.

¹³⁰ Arthur P. Wolf, personal communication of 20 August 1964.

ization had by 1949 proceeded to the point where standard markets were extinct in the environs of most of the cities served by steamer or railroad—often only to the extent of the city's own intermediate marketing system (as with Ningpo in 1937), sometimes to the extent of the city's own central marketing system (as was apparently already the case with Nanking by 1925), only infrequently to the extent of the city's entire trading system (as was presumably the case with Shanghai quite early on). But modern towns like Yao-hua-men were for the most part found only near the heart of regional and city trading systems, and only a small minority of all intermediate marketing systems were modernized. Even in East China, for every central trading system whose agrarian economy had been truly modernized, there were scores of others which, like Chou-ts'un's, had been merely commercialized. In short, the Republican period saw enough industrialization and transport modernization to commercialize much of the agrarian economy. But of true modernization there was pitifully little.

This conclusion is reinforced by reference to the Szechwan Basin as of 1948. The special value of the Szechwan case stems from the close and persistent correspondence between sub-*hsien* administrative units and standard marketing areas. The bewildering variety and protean character of administrative organization below the level of the *hsien* during the late Ch'ing period have been well documented by Hsiao Kung-chuan.¹⁸¹ Under the Republic, the system of administration was gradually standardized: units immediately below the *hsien* eventually came to be designated consistently as *ch'ü* ("subdistricts"), and these in turn were everywhere subdivided into townships, either *hsiang* ("rural townships") or *chen* ("urban townships"). Nonetheless, the size and significance of what were everywhere called *hsiang* or *chen* varied tremendously in both space and time. To cite a random example, the 20,850 townships into which the countryside of Honan was divided in 1935 were by 1948 consolidated into 1,240 units of the same name.¹⁸² In neither year did the township correspond to any natural social or economic system; the 1935 township was larger than the natural village, while the 1948 township was larger than the standard marketing area.

Against this general picture of administrative artificiality and ferment, the Szechwan Basin stands in sharp contrast. Local gazetteers throughout the last century during which they were produced consistently show a close correspondence between the township and the standard marketing area. Many Szechwan gazetteers provide information about sub-*hsien* administrative units *and* markets in a single table, with the name of each *hsiang* or *chen* followed by the name and location of its *ch'ang* (market town). The 1921 gazetteer of Chin-t'ang *hsien* in 1921 listed 34 townships and 32 market towns, each of the latter serving as the administrative seat of one of the former. The 1934 gazetteer of Hua-yang *hsien* listed 39 townships and 38 *ch'ang*; in 1949, the same *hsien* had 40 townships and 40 rural market towns. In the words of A. Doak Barnett, who investigated rural social organization in the vicinity of Chungking in 1948: "Each [*hsiang* or *chen*] is an integrated economic region the center of

¹⁸¹ *Rural China: Imperial Control in the Nineteenth Century* (Seattle, 1960), Ch. 2.

¹⁸² 1935 figure cited in *Nei-cheng nien-chien* [Yearbook of Internal Administration] (Shanghai, 1936), Sect. B., p. 645. 1948 figures cited in Kuan Wei-lan, ed., *Chung-hua min-kuo hsing-cheng ch'ü-hua chi t'u-ti jen-k'ou t'ung-chi piao*. [Statistical Tables of Administrative Subdivisions together with Land Area and Population] (Taipei, 1956), p. 81.

TABLE 3—AVERAGE AREA PER TOWNSHIP BY DENSITY CLASS OF *hsien*,
CENTRAL RIVERINE ZONE, SZECHWAN BASIN, 1948

Ave. area of township in sq. km.	Population Density									Total	
	40- -39	80- 79	120- 119	170- 169	220- 219	280- 279	360- 359	460- 459	560- 559		
10-19										0	
20-29			1				3	5		9	
30-39				1	1	8	7			17	
40-49				5	2	8	1			16	
50-69			2	2	3	1				8	
70-89		1	3							4	
90-139		5	3							8	
140-199	1	3								4	
200-	2									2	
Total	3	9	9	8	6	17	11	5	0	0	68

which is a market village. Occasionally a *Hsiang* or *Chen* contains two market villages, and in rare cases they have none, but these are exceptions.¹⁸³ Thus it would appear that in Szechwan the number and distribution of townships have faithfully reflected such changes as have occurred in the number and distribution of rural markets.

I attribute this remarkably close and persistent correspondence throughout the greater part of the Szechwan Basin to the absence of nucleated villages and the consequent prominence of market towns on the landscape. In Szechwan no administrator could fail to note the significance of market towns, which in any case offered the only possible sites for the township seats. In the case of the Szechwan Basin, then, given the number of townships, people, and square kilometers in each *hsien*, a reliable analysis of the size and distribution of standard marketing systems becomes feasible.

When 1948 data¹⁸⁴ for 156 *hsien* in the Szechwan Basin¹⁸⁵ are ordered in the manner followed above for Shantung districts in 1911, it becomes immediately clear that in terms of the relation between population density and township size the Basin divides into two regions. One, a group of sixty-eight *hsien* lying on either side of the Yangtze river and the lower reaches of its major tributaries, shows a distribution

¹⁸³ *China on the Eve of Communist Takeover* (New York, 1963), p. 122.

¹⁸⁴ Kuan Wei-lan, ed., pp. 24, 30-36, 57-58, 64-67, 95, 100-01.

¹⁸⁵ For purposes of this analysis, the Szechwan Basin is defined as shown in Figure 8. No *hsien* is included which is not wholly or largely contained in the drainage basin of the Yangtze river from just west of P'ing-shan (on the Szechwan-Yunnan border) to just downriver from Yün-yang (in the Yangtze Gorges). In the west and northwest of the drainage basin so defined, large areas which are essentially non-agricultural have been excluded; the *hsien* in question lie in Szechwan, Sikang and Kansu provinces. In the south, only the northern portion of the drainage basin of the Wu river has been included, the remainder being considered to fall in the geographic region often designated the Yunnan-Kweichow Plateau. (While geographers are not in agreement concerning the southern boundary of the Szechwan Basin, all draw it through the drainage basin of the Wu river rather than at its southern limits.) As delimited here, then, the Szechwan Basin encompasses 3 *hsien* in Yunnan, 18 in Kweichow, 2 each in Hupeh and Shensi, and 4 in Kansu, in addition to 127 *hsien* in Szechwan.

TABLE 4—AVERAGE AREA PER TOWNSHIP BY DENSITY CLASS OF *hsien*,
SZECHWAN BASIN OTHER THAN CENTRAL RIVERINE ZONE, 1948

Ave. area of township in sq. km.	Population Density										
	-39	40-79	80-119	120-169	170-219	220-279	280-359	360-459	460-559	560-	Total
10-19									3	5	8
20-29							1	2	1		4
30-39							6	6	1		13
40-49					1	4	5				10
50-69				2	5	2	2				11
70-89			2	4	2	1					9
90-139		3	8	1							12
140-199		9	1								10
200-	10	1									11
Total	10	13	11	7	8	7	14	8	5	5	88

(Table 3) which is distinctly different from that of the remaining 88 *hsien* (Table 4). The former group of *hsien*, which may be termed the Central Riverine Zone, is shown on Figure 8 in darker shading, while the remainder of the Basin is shown in light shading. Apart from the extraordinary fertility of the Chengtu Plain, not matched by any comparable area in the Central Riverine Zone, there is no reason of local topography, land productivity, or climate for predicting any difference in distribution between the two zones as a whole. When density of population is held constant, local variations in these natural features are to all intents and purposes controlled, and the ten exceptional *hsien* of the Chengtu Plain (those with densities in excess of 460 persons per square kilometer) can thereby, for purposes of comparison,

TABLE 5—AVERAGE AREA AND POPULATION PER TOWNSHIP BY DENSITY CLASS OF *hsien*,
SZECHWAN BASIN, 1948: THE CENTRAL RIVERINE ZONE OF *hsien*
COMPARED WITH THE REMAINDER OF THE BASIN

Density class	Average township area in square kilometers		Average township population	
	Central Riverine Zone	Other <i>hsien</i>	Central Riverine Zone	Other <i>hsien</i>
-39	227	303	5,925	8,562
40-79	124	168	6,867	9,652
80-119	68	103	6,930	10,052
120-169	49	75	7,441	10,681
170-219	47	55	8,487	11,087
220-279	41	52	10,053	12,720
280-359	34	41	10,587	13,538
360-459	26	33	10,125	13,343
460-559	—	23	—	11,858
560-	—	15	—	9,928

be isolated from the others. Nonetheless, as summarized in Table 5, townships in the Central Riverine Zone are for each comparable density class smaller in both area and population than are townships elsewhere in the Szechwan Basin. Why?

It will be noted to begin with that *no* significant modernization of the rural economy had occurred in either zone of the Basin. The lower right-hand cells of both Table 3 and Table 4 are occupied by not so much as one deviant case, which is to say that there was in the Szechwan Basin as of 1948 not a single *hsien* whose agrarian

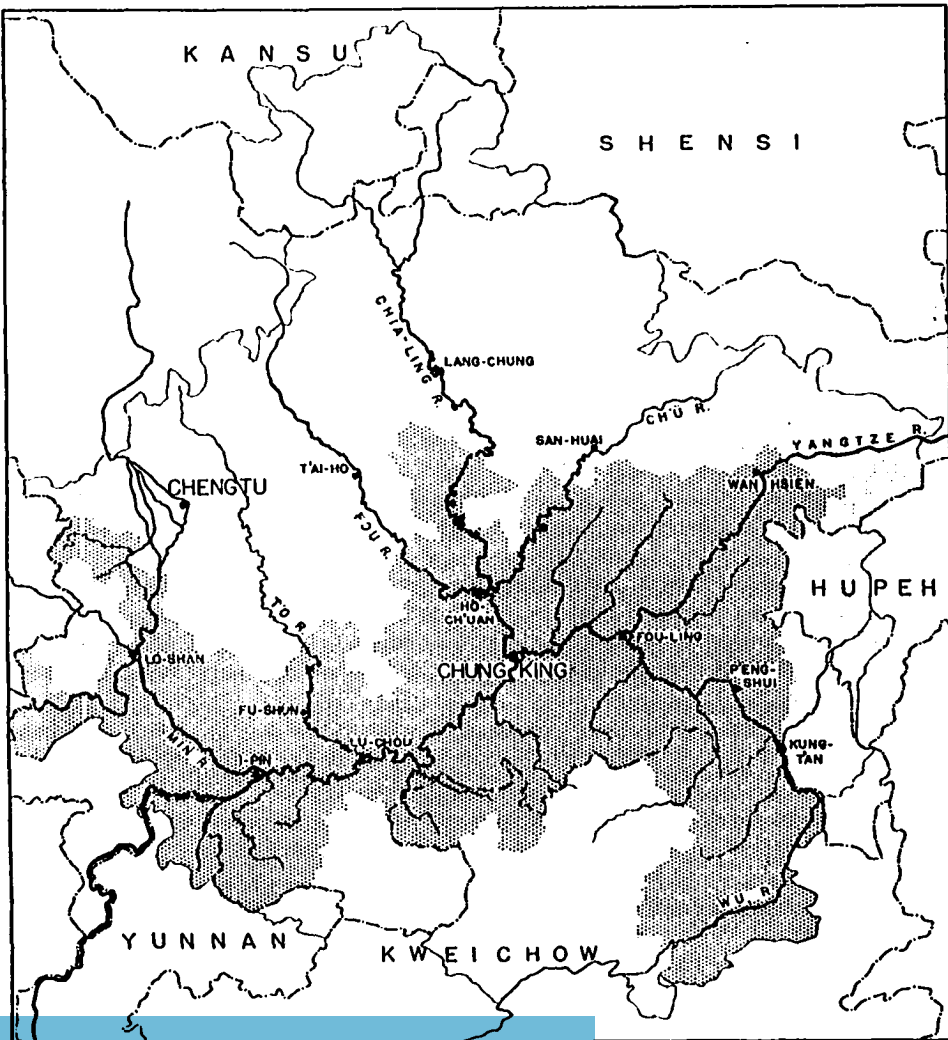


FIGURE 8. The Szechwan Basin, 1948, showing major river ports and Chengtu. The Basin is defined as the areas shown in either light or dark shading; the latter defines that part of the Basin referred to as the Central Riverine Zone.

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economy had modernized to the point where the average size of its marketing areas was significantly larger than predicted by its density class. The Szechwan countryside of 1948 was in this regard far behind rural Shantung in 1911, and there is consequently no reason for even considering the possibility that the larger marketing systems in those parts of the Basin which lie outside the Central Riverine Zone might be due to the demise of market towns through modernization.

When we turn to our theory of *traditional* change, only one explanation is possible: marketing structures in the Central Riverine Zone must, by comparison with the remainder of the Basin, be at a more advanced stage in the intensification cycle. I believe this to be the case and attribute the difference primarily to differential commercialization. The Yangtze is navigable for small steamers as far upriver as I-pin, in the far west of the Szechwan Basin. (See Figure 8.) All of the major ports on the Yangtze plus several more on its major tributaries—Lo-shan on the Min, Fu-shun on the T'o, Ho-ch'uan on the Chia-ling, and P'eng-shui on the Wu—had, as of 1948, been served by steamers for decades, whereas the Chengtu Plain and upriver ports elsewhere to the north of the Central Riverine Zone could at best be reached by junk. It is significant, therefore, that the line separating *hsien* with comparatively small standard marketing systems from those with comparatively large systems—i.e., the line which distinguishes our Central Riverine Zone from *hsien* farther north—crosses each of the northern tributaries of the Yangtze farther upriver than the point beyond which steamers cannot pass—just how far upstream, furthermore, being roughly proportional to the distance beyond that point served by *large* junks.¹⁸⁶ In the absence of any appreciable modernization of overland transport in the Szechwan Basin, significant commercialization appears to have occurred only in those marketing systems whose hub was served by river steamers. As in Ningpo's Zone B, therefore, we may hypothesize for areas throughout the Central Riverine Zone a speed-up in the intensification cycle which, in the case of many systems at the appropriate stage, entailed a spate of new markets.

If this analysis is correct, then marketing systems throughout the lightly shaded portions shown on Figure 8 must in 1948 have been very close to their traditional form,¹⁸⁷ and the regression curve which fits the data summarized in Table 4¹⁸⁸ may be taken to approximate the association between size of standard marketing system and

¹⁸⁶ Large junks navigate the Chia-ling river as far upstream as Lang-chung; and as far upstream on its two tributaries, the Ch'ü and Fou rivers, as San-huai *chen* and T'ai-ho *chen*, respectively. Large junks navigate the Wu river as far upstream as Kung-t'an. In the case of the T'o and the Min rivers, large junks can penetrate little or no farther upstream than can steamers, i.e., not much beyond Fu-shun and Lo-shan, respectively. Data on the navigable waterways of Szechwan are taken from:

Chang Hsiao-mei, *Ssu-ch'uan ching-chi ts'an-k'ao tsu-liao* [Economic Reference Materials on Szechwan] (Shanghai, 1939), pp. H1-4.

E. A. Afanas'evskii, *Sychuan'*: *Ekonomiko-Geograficheskii Ocherk* [Szechwan: An Economic-geographical Essay] (Moscow, 1962), pp. 194-208. Tr. in *Joint Publications Research Service*, No. 15308.

The Chinese Yearbook, 1944-45 (Shanghai, 1946), pp. 728-729.

T'ang Chen-hsu, "Water Resources Development of Post War China," *National Reconstruction Journal*, VI (1945), 88.

¹⁸⁷ From data which I gathered in 1949-50, it appears that virtually no change in the number and distribution of markets immediately surrounding Chengtu had occurred during the entire Republican period. In the whole area mapped in Figure 3, for instance, only one new market had been founded since 1911. In other words, Chengtu's "Zone A" must in 1948 have been considerably less commercialized than Ningpo's Zone C as of 1937.

¹⁸⁸ The regression equation of average township area (y) on average density of population (x) is approximately $y = .04x + 29 + 7790/x$.

population density which was obtained throughout China in premodern times. By the same token the regression curve for the Central Riverine Zone, i.e., that which fits the data summarized in Table 3,¹³⁹ may be taken as a function of the relationship between size of marketing system and population density in a rural economy which has been commercialized but not modernized. Since marketing systems are consistently smaller in this zone, the curve lies closer to the axes of ordinates and abscissas than does that for the rest of the Basin, and since in 1948 the Central Riverine Zone of the Szechwan Basin was still *less* commercialized than was most of China proper, we must place the regression curve for agricultural China as a whole still closer to the axes.

In order to obtain a baseline for assessing modernization, I have plotted a regression curve designed to represent the relationship between size of standard marketing area and population density in the hypothetical situation of an agrarian economy commercialized to the extent that all of agricultural China was in 1948 but none of whose markets had died. This curve was *shaped* in accordance with the data for the Central Riverine Zone in the Szechwan Basin as of 1948, but *positioned* in reference to points on the graph provided by known cases of *hsien* more commercialized than any in that zone as of 1948.¹⁴⁰ I then grouped all *hsien* in agricultural China, approximately 1,790 in all, into density classes according to 1948 data¹⁴¹ and, using readings from the curve, computed for each density class of *hsien* the estimated number of standard marketing systems, together with their average area and average population. These calculations yielded an estimate of 63,000 rural standard marketing systems—a figure which may be taken to approximate the total number of rural markets in existence prior to the beginnings of modernization in the 1890's plus those founded between the 1890's and 1948. It makes no allowance for market deaths.

In other words, a model was devised on the deliberately erroneous assumption that no markets had been extinguished through modernization. This was done 1) in order to derive 1948 estimates for the size and distribution of partly commercialized standard marketing systems—the kind which were typical of China at the end of the Republican period, and 2) in order that empirical cases which are known to have been modernized can be compared with the model to get some idea of *how much* modernization has occurred. The estimates sought in the first objective were set out in Table 1 (Part I); it is the comparisons to which the second objective is directed that concern us here and in Part III to follow.

In the absence of hard data for any province outside Szechwan, I shall be so bold as to estimate on the basis of all relevant available data that modernization of the agrarian economy had by 1948 barely progressed to the point where 10 per cent of intermediate marketing systems in agricultural China as a whole had been converted to modern trading systems. What this level of modernization implies can be seen if we set out (Table 6) the number of markets and central places which our various models—spatial as well as numerical—predict on the assumptions of no modernization and of 10 per cent modernization. In the first column are given 1948 estimates for the number of markets and central places in all of agricultural China, assuming no mar-

¹³⁹ For the Central Riverine Zone, the regression equation of y on x is approximately $y = .04x + 29 + 4900/x$.

¹⁴⁰ That is, the third term of the regression equation was lowered.

¹⁴¹ All data from Kuan Wei-lan, ed.

TABLE 6—AN ESTIMATE OF THE CUMULATIVE NUMBER OF MARKETS AND CENTRAL PLACES OF VARIOUS TYPES IN AGRICULTURAL CHINA, 1900–1948, TOGETHER WITH AN ESTIMATE OF THEIR NUMBER IN 1948 ASSUMING MARKET DEATHS AS REQUIRED BY THE MODERNIZATION OF ONE-TENTH OF ALL INTERMEDIATE MARKETING SYSTEMS

	Proportion of intermediate marketing systems assumed to have modernized	
	None	10 per cent
No. of traditional markets¹		
Standard: rural	47,000	42,938
Standard: suburban ²	2,200	924
Intermediate	12,660	12,121
Central	3,340	2,572
Total	65,200³	58,555
No. of traditional central places		
Standard market towns	47,000	42,938
Intermediate market towns	12,660	12,121
Central market towns	3,340	2,572
Local and regional cities	733	308
Total	63,733⁴	57,939
No. of modern central places		
Intermediate trading centers		534
Central trading centers		768
Local and regional cities		425
Total	0	1,727

¹ Exclusive of markets inside local and regional cities.

² Estimated at three per city. The larger traditional cities typically had four markets serving the suburban population, one near each of the four main gates. Smaller cities, however, usually lacked a full complement of such markets.

³ The total shown for traditional markets is equal to 63,000 (the number of rural markets yielded by the density marketing-area curve for agricultural China in 1948) plus 2,200 (the estimated number of suburban markets).

⁴ The total shown for traditional central places is equal to 63,000 plus 733 (the estimated number of central places above the level of central market towns).

ket deaths. The level of modernization which I estimate to have been reached in 1948 implies that approximately 1700 central places had been modernized, including most cities and a sizable proportion of central market towns, and that during the entire course of rural modernization since the beginning of the century approximately 5300 traditional standard markets—suburban and rural—had died, their sites no longer being economic central places.

When the Communists assumed control of the entire mainland in late 1949, there remained, according to this estimate, approximately 58,000 standard marketing systems throughout the vast countryside of agricultural China.