

Cities and the Hierarchy of Local Systems

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This paper considers the place of cities in imperial China's spatial structure.¹ Two hierarchies of central places and of associated territorial systems are distinguished, one created and regulated by the imperial bureaucracy for purposes of field administration, the other given shape in the first instance by economic transactions. The first reflected the bureaucratic structure of "official" China—a world of yamens and ranked officials arrayed in a formal hierarchy of graded administrative posts. The second reflected the "natural" structure of Chinese society—a world of marketing and trading systems, informal politics, and nested subcultures dominated by officials-out-of-office, nonofficial gentry, and important merchants.

In this paper I attempt to model these two structures and their interaction. It should be noted at the outset that administrative capitals were but a subset of economic central places, for all capitals performed significant economic functions for their hinterlands. In the eighteen provinces of China proper in the 1890's, there were some 39,000 economic central places, only 1,546 of which served as capitals in the imperial field administration.²

Despite the role of capitals as both administrative and economic central places, the distinction drawn between the two hierarchies is by no means simply a heuristic device. The boundaries of administrative units seldom coincided with those of marketing or trading systems. Thus, a given capital city fitted into two empirically distinct spatial structures. It is this feature that enables us to view low-level capitals as the locus of articulation between the official structure of field administration and the nonofficial structure of societal management.

My approach here gives some analytical precedence to commercial

as against other central functions. In taking this stance I mean neither to imply that commercial functions outweighed all others nor to suggest that all or even most cities and towns originated as primarily economic centers.³ But there are three senses in which economic central functions may be seen as basic. First, market towns and commercial cities were central nodes in the flow of goods and services, money and credit, and persons pursuing their livelihood and other economic interests. This meant that trading centers at all levels were logical sites for such public institutions as communal temples, schools, and benevolent institutions as well as for headquarters of the nonofficial structures exercising political, administrative, and even military control. In this sense, commercial centers attracted other types of central functions; thus there was a distinct tendency for religious “parishes,” the catchment areas of schools, and the jurisdictions of parapolitical structures to coincide at local levels with the economic hinterlands of trade centers and to reflect their nodal structure.⁴ Second, since the extraction of economic surplus is everywhere a critical enabling mechanism of politics, it was efficient for political institutions to focus on commercial centers in their efforts to control and regulate the means of exchange and (indirectly) production, and to tap the wealth of any given local system. Thus the headquarters of secret-society lodges and of other parapolitical institutions were normally located in market towns and cities in part because control of markets and of other key economic institutions figured prominently among the prizes of political competition.⁵ Thus, too, a regular feature of the periodic adjustments and reorganizations of the imperial field administration was the incorporation as capitals of newly prominent trading centers.⁶ Third, trade appears to have been far more potent than administrative transactions—or, for that matter, any other form of interurban linkages—in shaping *systems* of cities within China. This followed in part from the low intensity of bureaucratic field administration but more importantly from the fact that commerce, ever sensitive to cost distance, was more sharply constrained by physiographic givens than administration was. Thus, geographic constraints and trading patterns tended to reinforce one another in shaping urban systems.

For reasons implicit in these remarks, I begin with an analysis of China’s cities and towns as commercial centers and take up field administration only after placing economic central places in the context of physiographic regions.

Modeling the Economic Hierarchy

The general economic importance of a settlement in late imperial China, as in most traditional agrarian societies, was in large part a func-

tion of three factors: (1) its role in providing retail goods and services for a surrounding tributary area or hinterland; (2) its position in the structure of distribution channels connecting economic centers; and (3) its place in the transport network.* In what follows I start with a theoretical discussion of the first factor, presenting an idealized model that I subsequently modify to incorporate elements of the other two factors.

Central-place theory in the strict sense is concerned solely with retailing.⁷ The basic notion is that higher-level centers purvey more specialized goods and consequently have more extensive maximal hinterlands than lower-level centers do. The two key concepts here are the *demand threshold* of the supplier and the *range* of a good. Demand threshold may be defined as the area containing sufficient consumer demand to enable the supplier to earn normal profits. It reflects economies of scale in the provision of certain services and agglomeration advantages accruing from locating centralized retailers near to one another. The chief determinant of threshold is purchasing power per unit of area, itself a function of population density and the extent to which household economies are dependent on the market. Range may be defined as the circumscribed area beyond which buyers would not be willing to travel to purchase the good in question. The main determinants of the range of central goods are economic distance (i.e., geographic distance converted into transport costs) and production costs. If transport costs and demand density do not vary by direction from the central place, then the areas of both demand threshold and range will be roughly circular, with the radius of the circle varying for different goods and services.

Using the concepts of threshold and range and hewing to a number of stringent assumptions,[†] central-place theory predicts hierarchical patterns of trading centers on the landscape. Common goods in heavy demand are available in all centers at whatever level, whereas more specialized goods are available only at higher-order centers in accordance with the extent of their range. Thus, the set of goods supplied by a more complex center includes all goods supplied by simpler centers plus an increment of different higher-order goods. The result is a system in

* In a traditional agrarian society, industrial production tends to be relatively atomized and dispersed, and the location of handicraft industry closely reflects the three factors specified. Thus industrial location has not been incorporated in the models developed here.

† Most notably, full knowledge of market conditions on the part of both suppliers and consumers, full rationality on the part of suppliers in seeking to maximize profits and on the part of consumers in seeking to minimize costs, perfect competition, and a sufficient number of suppliers to meet all "threshold" demand.

which marketing centrality is discretely stratified, yielding functionally distinct levels of centers. A consequent feature of every regular central-place system is that the number of centers steadily decreases and the average size of hinterlands steadily increases as one moves up the hierarchy.

On the assumption of uniform demand density, centers at any given level will be spaced according to an isometric grid, as if at the apexes of space-filling equilateral triangles; since the size of threshold areas is affected by distance from competing suppliers in neighboring centers, hinterlands tend to be hexagonal rather than circular in shape. Thus, a honeycomb of hexagonal hinterlands develops, each in contact with six others at the same level. Finally, centers at one level are interdependent with their neighbors at adjacent levels in the sense that increased development of one higher-order town will result in the lesser development of the low-order centers in its immediate hinterland. The tributary nature of the system means that larger centers draw trade from nearby smaller centers and thus restrict their commercial growth.

One of the more common central-place patterns is diagramed in Figure 1, where four levels of centers are shown. Although this kind of model is derived from a theoretical analysis of the behavior of retailers and consumers, the geography of wholesale trade is at least as important as that of retailing in accounting for the location of cities and the structure of urban systems.* I shall argue briefly that, in a preindustrial economy lacking mechanized transport and communication, regular central-place hierarchies of the kind modeled in Figure 1 are optimal not only for retail marketing but also for the collection and export of local products, for the import and distribution of exogenous products, and for the wholesaling, transport, and credit functions essential for these activities.

Let us assume that the major transport routes on the hypothetical landscape of Figure 1 are those connecting A centers (each route passing through one B center and two C centers), that the next most important routes are those connecting B centers (each passing through one C center and two D centers), and so on. Efficiency alone dictates that the importance of particular centers as transport nodes should decline as the number and variety of suppliers and the size of the market decline. Given this pattern of nodes and links, and assuming uniform transport costs (i.e., that the fraction of distance does not vary), the collection

* The convention within location theory is to define "central place" narrowly as a retail center. In this paper, however, the term has reference to all kinds of central functions, including but not limited to retailing.

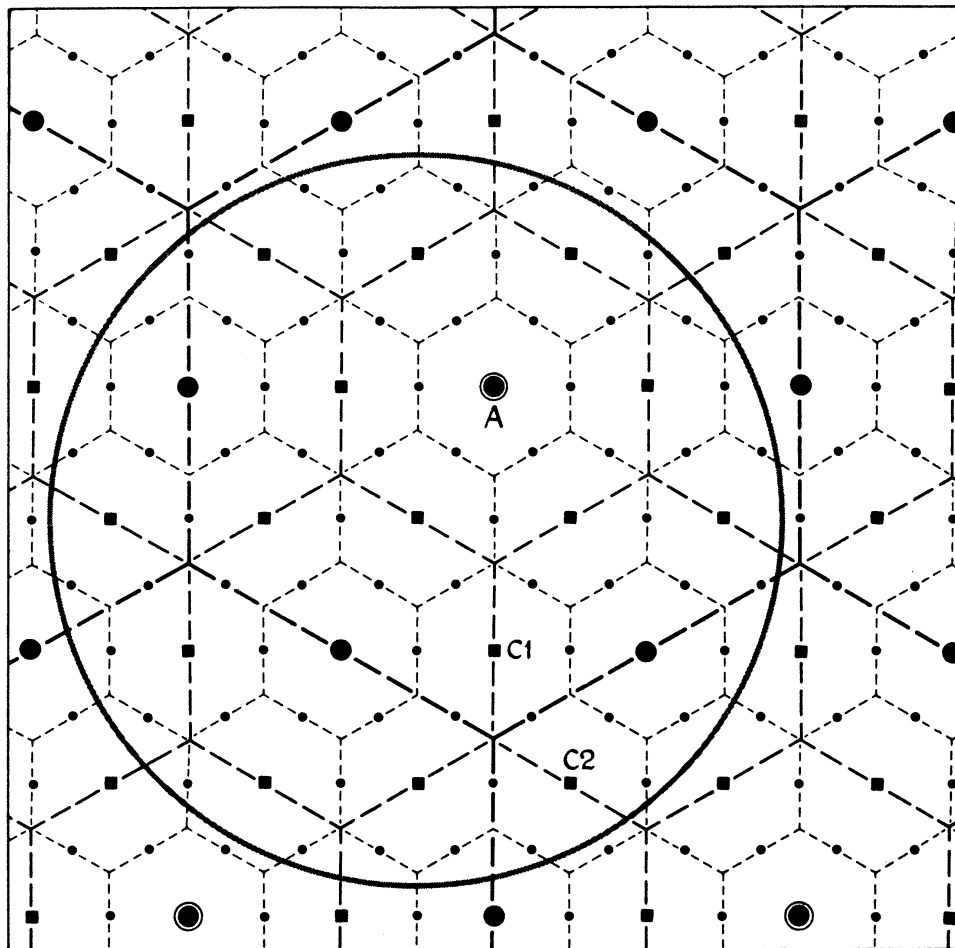


FIG. 1. A REGULAR CENTRAL-PLACE HIERARCHY, BOUNDLESS AND BOUNDED. The limits of D-level hinterlands are not shown.

● A centers ● B centers ■ C centers • D centers

points for rural goods would normally be the nodes of the lowest-level (i.e., D-level) systems. How far up the hierarchy goods move is a function not only of such factors as their range (in the case of consumer goods) and of the location of processing and manufacturing industry (in the case of commercial crops and other raw materials), but also of the level of the nodes of systems that are themselves at the same level. For instance, the nodes of some D-level systems are C and B centers, and in these cases collection and bulking of goods of relatively high demand might cease at the center of first collection; there goods would be processed and distributed to lower-level centers throughout the C-level or B-level system whose node was the original collection point. In accor-

dance with these variable factors, local products might pass through few or many nodes (here seen as collection and bulking centers), but in any case the movement of goods would recapitulate the hierarchy of retail centers.

Similar reasoning applies to distribution. The products of enterprises in or near an A center, or exogenous goods imported by firms located in an A center (which, of course, might be expected to participate more heavily than lower-level centers in long-distance trade), would be most efficiently distributed to retail suppliers in remote D centers by moving down the hierarchy through B centers and C centers. We are concerned here with the demand of retail firms and productive enterprises (rather than of households), but, as with retailing, demand threshold reflects economies of scale and agglomeration advantages. Range in this case refers to the area within which retailers find it economically feasible to seek wholesale supplies, credit, and transport services. Hierarchical patterns are predicted by a logic analogous to that applied to retailing in central-place theory. Small-scale simple services in general demand by petty retailers would be available, say, in all C centers and higher, whereas large-scale or specialized higher-order services would be available, in accordance with the extent of their range, only in B or A centers. Thus, the number and variety of wholesaling, credit, and transport facilities would be greatest in A centers, declining steadily as one descends the hierarchy.

Three points should be made about this ideal model of spatial distribution before introducing the more realistic assumptions needed to apply it to the Chinese case. First, it is clear that centers at the same level in the hierarchy are differently favored in terms of location in relation to higher-level centers. Suppliers in the ring of D centers immediately surrounding an A center are better off in terms of transport, credit facilities, wholesale prices, and goods selection than suppliers in the D centers immediately surrounding a B center; D centers lying on the roads connecting C centers are still less favorably situated. Even in a regular central-place hierarchy, then, the selling prices of retail goods and the purchase prices for local products at a D center may be expected to vary systematically according to that center's position in the overall structure. Second, the regular model ensures spatial competition because a center at any level is oriented to two (in the particular system modeled in Figure 1) or more higher-level centers. Thus, in Figure 1, retailers in every D center may choose between wholesalers in two higher-level centers; this means that wholesalers in a given higher-level center are competing with wholesalers in another higher-level center to

supply each intervening D center. Third, the two-way trade and transport linking higher-level towns with their dependent lower-level centers strongly reinforce the systemic integrity of central-place subsystems. This is another facet of the interdependence described above in terms of the diversion of trade from lower-order centers to their higher-order neighbors.

The model developed so far assumes an idealized landscape characterized by (1) a flat and featureless topography, (2) an even distribution of demand or purchasing power, (3) equal transport facility in all directions, and (4) an indefinite extension of the same invariant pattern in all directions. In order to proceed to an analysis of the Chinese landscape, we must deal systematically with departures from these unrealistic assumptions.

The Structure of Regional Systems

In conceptualizing regional systems in agrarian China, I have drawn on four different approaches. The first equates regions with the maximal hinterlands of high-level central places.⁸ As applied to nineteenth-century China, this approach would distinguish as first-order regions the trade areas of the highest-order goods and services supplied by such major metropolises as Sian, Wuhan, and Canton. Alternatively, a region might be defined as the maximal extent of the network of wholesale credit transactions centered on a given metropolis. One difficulty with this "metropolitan-dominance" approach is that the outer limits of the metropolitan region may give way to rural areas that consume none of the diagnostic higher-order goods or services. And in fact, China in the nineteenth century provided several instances of rural borderland areas that were not linked with any nodal region we could define using the above approach.

A closely related approach focuses on functionally integrated urban systems.⁹ If we connected all the central places on a landscape by lines whose thicknesses were proportional to the magnitude of the trade between any given points, then the cores of economic regions would appear as a concentration of heavy lines connecting clusters of higher-level cities. The network of lines would thin toward the peripheries, and small market towns on regional frontiers would be assigned to one region or another on the basis of the direction of the greater trade flow.

The third approach is concerned with the differential distribution of economic resources. The concentration of critical resources may be indexed by such data as per capita income, demand density (purchasing power per unit of area), and (in an agrarian society) the value of agri-

cultural production per unit of land or even the proportion of land that is arable or cultivated. In following this approach, I take population density as the major indicator of resource concentration on the grounds that it is a major component of demand density and correlates strongly with agricultural productivity both as cause (labor inputs) and as effect (the carrying capacity of the land).¹⁰ As applied to China, this involves plotting county-level population densities, from which contours are derived showing density gradients. Extensive pockets of high population density are taken as the cores of economic regions, and regional boundaries are assumed to pass through the areas of lowest density between cores.

The fourth approach of concern here begins with physiographic features. The particular tradition on which I draw dates back to the eighteenth century, when Philippe Buache visualized the earth's land surface as consisting of river basins separated by mountain chains that provided convenient boundaries.¹¹ Taking the river basin as the essential regional determinant is particularly appropriate in the case of agrarian China, where crop inventories and productive techniques were specifically adapted to a plains-and-valley ecology and where water transport was of the greatest importance. In most Chinese physiographic regions, the river system provided the skeleton of the transport network that underlay the region's functional integration.¹² Although the definition of river-basin units involves a number of operational problems (see p. 212 above for their resolution in the Chinese case), watersheds are readily identified and taking them as regional boundaries leaves no areas unaccounted for.

When these four approaches are followed in regionalizing nineteenth-century China, the results are in large part mutually reinforcing and/or complementary. Nine major "islands" of relatively dense population were identified, each surrounded by concentric gradients of declining densities. Each high-density "core" was wholly contained within one of the nine physiographic macroregions as defined in my Part One paper above (see Map 1, p. 214),* and with minor exceptions the watersheds that constituted regional boundaries passed through areas that were sparsely populated, at least in relation to the populations of the cores.

With the exception of Yun-Kwei and Manchuria, the maximal commercial hinterland of each region's major metropolis was wholly contained in, but did not exhaust, that physiographic region. (As of 1893,

* The map on p. 214 shows a single undifferentiated core within each macroregion; obviously, the distribution of population densities within most of these cores would permit further delimitation of concentric density zones.

the metropolises and their regions were Peking in North China, Sian in Northwest China, Chungking in the Upper Yangtze, Wuhan in the Middle Yangtze, Shanghai in the Lower Yangtze, Foochow in the Southeast Coast, and Canton in Lingnan.) In each case, the major commercial cities of the region had stronger economic links with one another than any had with cities outside the region,¹³ and the densest interurban trade was almost wholly contained within the regional core. Moreover, the densely populated and urbanized core areas were closely associated with riverine lowlands.

Since it is virtually axiomatic that in a traditional agrarian society population density is a close function of agricultural productivity per unit of area, I will not document the assertions that a higher proportion of land was arable in the cores of regions than in the peripheries, that arable land in the former was generally more fertile than it was in the latter, and that the proportion of irrigated acreage in the cores was generally greater than that in the peripheries. The level of capital investment in drainage, reclamation, irrigation, and flood control was far higher per unit of arable land (and in some cases per capita) in cores than in peripheries, and in fact the very extent of a core was in many instances shaped by decisions to invest or not to invest in such waterworks. For reasons suggested earlier, investment in transport—roads and bridges, canals and locks—was also comparatively heavy in core areas. Finally, because of the relatively low cost of transport in cores and their denser transport net, the local economies of core areas were consistently more commercialized than those of peripheral areas, both in the sense that more commercial crops and handicrafts were produced for the market and in the sense that households were more dependent on the market for consumer goods.

We are now in a position to modify the idealized model of central-place systems discussed in the previous section to accord with the structure of China's major regional systems. We may begin by abandoning the assumption that the same invariant pattern extends indefinitely in all directions. Suppose a landscape is bounded by high mountains along the circumference of the shaded circle in Figure 1. The system of central places within the circle now includes one A center, three B centers, fifteen C centers, and 62 D centers. All four of the B-level hinterlands (three whose nodes are B centers and one whose node is A) are contained in A's hinterland and dependent on the A center. All 19 of the C-level hinterlands (15 whose nodes are C centers, three whose nodes are B centers, and one whose node is A) are contained in one or more B-level hinterlands and dependent on one or more of the higher-level

centers. And all 81 of the D-level hinterlands (62 whose nodes are D centers, 15 whose nodes are C centers, etc.) are contained in one or more C-level hinterlands and dependent on one or more of the higher-level centers. Thus the whole constitutes a single system of centers whose hinterlands form nested subsystems at four levels.

Adding boundedness to the model has two other consequences that deserve mention. First, spatial competition is generally reduced, and for many centers near the newly introduced system-limits it is eliminated entirely. Note that the three B centers are now oriented to only one A center, that several of the C centers near the periphery are now oriented to a single B center, and that many D centers around the rim are oriented to only one C center. Second, an additional element of differentiation among centers at the same level is introduced through truncation of the transport network around the rim of the system. For instance, in the unbounded model the locations of centers C₁ and C₂ were equally favorable in terms of transport to the nearest B and A centers, but in the bounded model C₂ is doubly disadvantaged: it is no longer on a road connecting B centers, and it is more distant than C₁ from the sole A center. Thus, boundedness alone creates a core-periphery structure within the central-place system.

If we now equate the bounded model just delimited with the upper reaches of the central-place system of one of the seven major macro-regions in agrarian China, we are constrained to modify the three other major assumptions of classical central-place theory. The notion of a uniformly flat and featureless topography must be replaced by one of systematic variation ranging from a productive level plain in the vicinity of the central metropolis (the A center) to relatively nonproductive and impenetrable terrain at the regional periphery. (In most of China, the rim of regional peripheries was marked by rugged mountains; by swampy saline marshes, as along much of the littoral of North China; or by desert, as along most of the Inner Asian peripheries of North and Northwest China.) The assumption of uniform demand density must be replaced by one of variable distribution whereby population density and the degree of market dependency both diminish toward the periphery. And finally, the notion of uniform transport facility must be replaced by one of systematic variation in transport costs from low values in the generally low-lying and well-watered core areas to high values in the relatively rugged periphery.

Given these modifications of the central-place model, we can postulate, first, that the average distance between centers at each level will be smaller in the core than in peripheral areas. Thus, moving from the

core toward the periphery, the average area of trading systems increases. (One can imagine Figure 1 printed on a rubber sheet and then stretched so that distortion increases with distance from center A.) The rationale for this expectation is less simple than might appear at first glance, for transport efficiency has an effect on the spacing of centers (and hence on the size of hinterlands) that countervails the effect of demand density. Regional cores tend to couple high demand density with efficient transport; the former favors a close spacing of centers (small trading systems), whereas the latter favors a dispersed spacing of centers (large trading systems). The reverse is true in regional peripheries, where low demand density has the effect of increasing the distance between centers and inefficient transport has the effect of decreasing it. In practice, however, the effects of transport efficiency were strong enough to counteract those of demand density in only a few areas, such as the core of the Lower Yangtze region, characterized by a dense network of navigable waterways.

Second, we can postulate that within each class of central places the size of the market (that is, the volume of business transacted per unit of time) will be relatively large for centers near metropolis A and will decline steadily as we approach the periphery. At any given level of the central-place hierarchy, then, peripheral cities will be likely to have fewer firms in the same line of business than core cities, and thus less competition.

Third, within each class of central places, peripheral cities will tend to have fewer *types* of firms purveying high-order goods and services than will their counterparts in regional cores. We have seen that a center's level (A, B, C, or D in Figure 1) is determined by the availability in it of specialized goods not obtainable at a lower level. But certain of the goods that are diagnostic of C centers in the core may be available in the periphery not in C centers but only in B centers. This upward displacement may occur at any and all levels of a central-place system, and it has the important consequence that subsystems occurring at the same level but differently situated with respect to the structure of the region may be characterized by somewhat different schedules of diagnostic incremental goods.¹⁴

Let me now characterize economic central places and their hinterlands in China with respect to the expectations derived from central-place and regional-systems models. On my analysis the economic hierarchy in the late nineteenth century consisted of eight levels.* In ac-

* See the appendix (pp. 347–51) for an account of the procedures followed and criteria used in classifying central places by level in the economic hierarchy.

cordance with the expectations of central-place theory, the number of centers decreased sharply with each step up the hierarchy. In ascending order, I have classified the economic centers of agrarian China in 1893 as follows: standard market towns (27,000–28,000), intermediate market towns (ca. 8,000), central market towns (ca. 2,300), local cities (669), greater cities (200), regional cities (63), regional metropolises (20), and central metropolises (6).*

The standard market town, which typically serviced a hinterland of fifteen to 30 villages, met the week-to-week marketing needs of peasant households. (I have discussed elsewhere the essential characteristics of this basic town-plus-hinterland as an economic system: transport, trade, industry, and credit were all structured within it spatially according to the principle of centrality and temporally by the periodicity of its market days.¹⁵) Standard marketing systems were nested within intermediate systems, and so on in the manner suggested by central-place models, but always subject to the constraints of topography and the distorting effects of the transport grid. According to my analysis, this structure ultimately culminated in 26 metropolitan trading systems, which in turn formed eight great economic systems, each essentially coterminous with one of the physiographic macroregions described in my Part One paper. The spatial characteristics of the full hierarchy will be illustrated below by reference to the Upper Yangtze region.

Macroregional cores were, of course, more urbanized than their surrounding peripheries, but the models now before us make it possible to specify two distinct ways in which this was true. Table 1 shows that at each ascending level of the economic hierarchy a higher proportion of central places were situated in cores as against peripheries, the difference being greatest at the two highest levels. The table also shows that for each level in the hierarchy city size was significantly larger in regional cores than in peripheries. It would be wrong, however, to interpret these population differentials as a simple consequence of the primordial physiographic aspects of regional structure. On the contrary, it was Chinese patterns of occupance that transformed physiographic regions into city-centered functional systems whose very “natural” features were to a considerable degree man-made. Urbanization itself contributed to core-periphery differentiation, and large cities have had the effect of intensifying the core-like character of their environs. The ecological consequences of Chinese urbanization may be illustrated with respect to deforestation and the disposal of human waste.

* The shift in terminology from market “town” to “city” between the third and fourth orders is not meant to imply a critical distinction; it appears to me that the orders constituted an integrated and evenly graded hierarchy.

TABLE 1. LOCATION OF CENTRAL PLACES IN REGIONAL CORES OR PERIPHERIES BY LEVEL IN THE ECONOMIC HIERARCHY, SHOWING MEAN POPULATIONS, 1893

Level in the economic hierarchy	Cores		Peripheries	Total	Mean population of cities/towns in class	
	No.	Pct.			Cores	Peripheries
Central metropolis	6	100 %		6	667,000	
Regional metropolis	18	90.0	2	20	217,000	80,000
Regional city	38	60.3	25	63	73,500	39,400
Greater city	108	54.0	92	200	25,500	17,200
Local city	360	53.8	309	669	7,800	5,800
CMT ^a	1,163	50.2	1,156	2,319	2,330	1,800
IMT ^a	3,905	48.7	4,106	8,011	690	450
SMT ^a	13,242	47.8	14,470	27,712	210	100
Total	18,840	48.3%	20,160	39,000		

^a CMT, IMT, and SMT stand for central, intermediate, and standard market towns, respectively.

From time immemorial Chinese architecture has relied on timber as the basic structural material. Wooden pillars and beams provided the framework not only of houses and shops but also of urban public buildings: palaces and yamens, academies and examination sheds, gate houses and drum towers, guildhalls and covered markets. Thus, an enormous amount of timber was required for the construction of a Chinese city, more than was needed for urban construction in most other civilizations, which placed a greater emphasis on stone and brick. These cities of wood with their narrow streets were subject to continual fires that were difficult to contain. Between the burning of cities in wars or rebellions and the burning of them in accidental conflagrations, much timber was reduced to ashes. Additional inroads on China's forest cover were made to supply charcoal for urban industry (including the firing of roof tiles), fuel for urban residences, and paper and black ink (made of soot from burnt pine) for administrative records, scholarly essays, and merchant account books.¹⁶ Since the forest cover of regional cores was depleted fairly early, by late imperial times forest products for urban consumption came largely from mountainous areas in the peripheries. These developments had two important consequences: there was a direct transfer of fertility through the conversion of peripheral timber to peri-urban ash, and there was an indirect fertility "migration" as a result of erosion caused by deforestation in peripheral highlands. The river systems that formed the skeletal structure of most Chinese macroregions removed a great deal of soil by erosion from the peripheral highlands and deposited it as silt in the lowlands of the core. Part of this silt was further

redistributed in the alluvial plains by the canal systems, irrigation works, and dikes that were also concentrated in lowland cores.¹⁷ The mud that collected in canals, ditches, and other lowland waterways was, of course, periodically removed, if only to avoid obstruction; if the sludge was not applied directly to adjacent fields, it was dried for transport and sale to enrich the soil of nearby farms.¹⁸ In the process, ash and silt whose ultimate origin was in the regional periphery enhanced the fertility of peri-urban agricultural areas in lowland cores.

The zones of high soil fertility that surrounded all of the larger cities in China's regional cores owed even more to the characteristically Chinese practice of husbanding night soil for use as fertilizer. Buchanan refers to the relevant process as the "continuous transfer of fertility from often distant hinterlands to supply urban populations with food."¹⁹

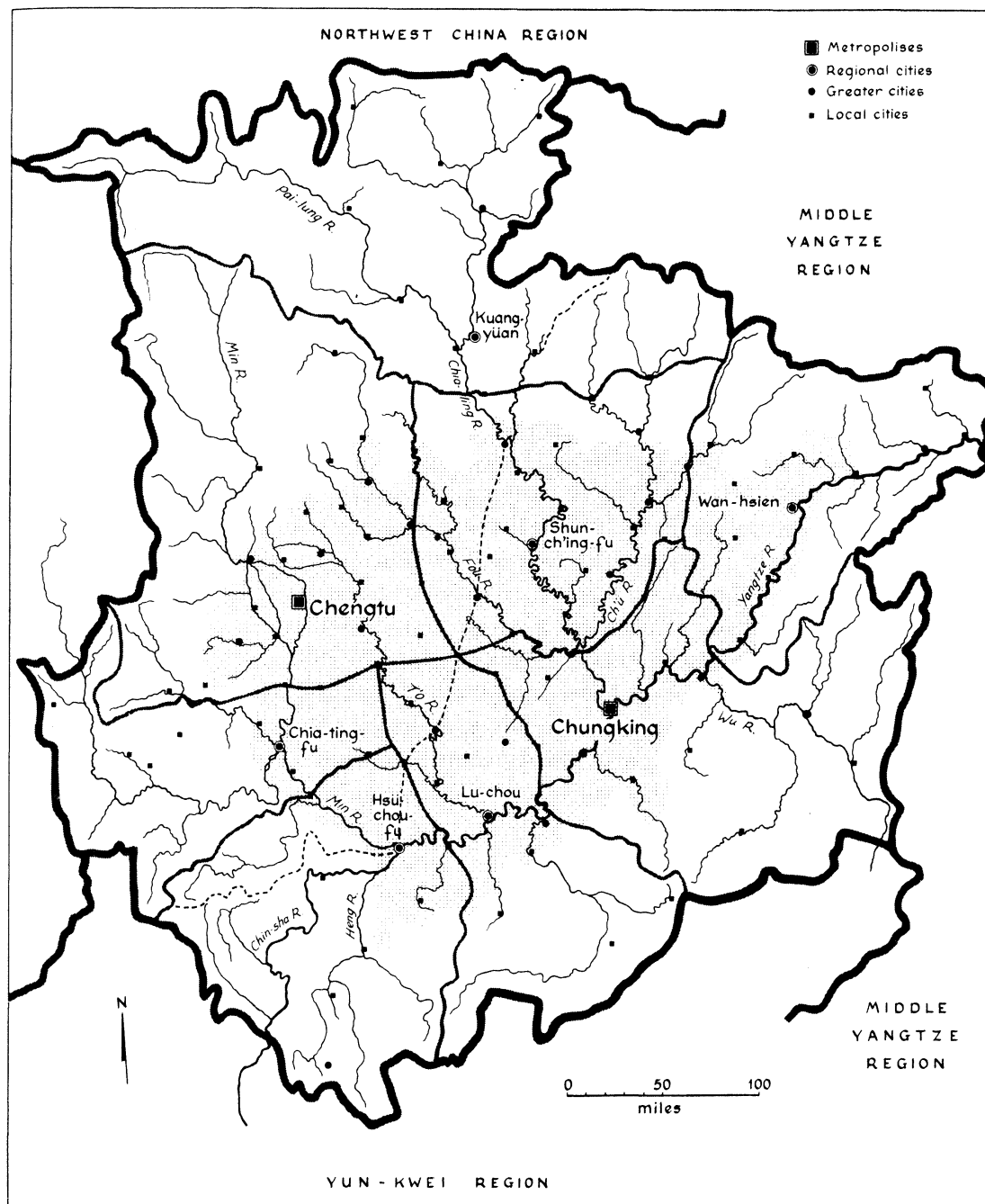
The organic and nutrient content of this food, in the form of human excreta, is eventually returned to the soils of the peri-urban area and these soils show a high humus, nitrogen, and base content which makes possible very high and stable yields. This use of night soil diminishes sharply with increasing distance from the cities, [which are consequently] surrounded by concentric zones of diminishing fertility; as a corollary . . . it is evident that the remoter food-supplying regions must be undergoing a continuous depletion of fertility as a result of this outflow of nutrients (including the phosphorus loss due to export of animal products).

Thus, urbanization in lowland areas helped bring about the higher fertility and dense rural populations characteristic of regional cores. And the very process of urbanization in regional cores proceeded at the expense of urbanization potential in the surrounding peripheries. In this sense, urban development in the core areas caused urban underdevelopment in the peripheries.

The Economic Hierarchy in the Upper Yangtze Region

I want now to focus on a single macroregion, the Upper Yangtze, in order to analyze the structure of its regional urban system. This section aims to present the contextual significance of cities at each level and to suggest the ways in which level in the hierarchy of economic central places necessarily implies position in a regional urban system.²⁰

Map 1 presents an overview of the upper levels of the regional economy of the Upper Yangtze. The regional core, defined in terms of population density, included the major navigable stretches of the region's river system and, as one might expect, coincided rather closely with the Red Basin. As of 1893, the population density of the core was approximately 294 persons per sq. km., and that of the periphery about 47. Note



MAP 1. THE UPPER YANGTZE REGION, 1893, showing the extent of the regional core, rivers, central places down to the level of local cities, and the approximate extent of regional-city trading systems. The dotted line bisecting the region separates the economic sphere of Chengtu from that of Chungking.

that most of the region's high-ranking economic centers were situated in the core: both metropolises, five of the six regional cities, and sixteen of the 21 greater cities.

In the 1890's, the relative economic centrality of the region's two metropolises, Chengtu and Chungking, was in transition. In the early nineteenth century, Chengtu had been unequivocally the central metropolis and Chungking merely a regional metropolis; by the 1920's, however, the roles of the two cities would be decisively reversed.* Even in the 1890's, however, Chungking had become the chief center of both intra- and extraregional trade, and in this sense the region as a whole may be taken as the maximal hinterland of Chungking. The dotted line on Map 1 separates the economic sphere of Chengtu from that of Chungking and defines the limits of the region's two metropolitan trading systems.

Map 1 also shows the approximate boundaries of the Upper Yangtze's eight regional trading systems. Three points are worthy of notice here. First, around the periphery of the region, the limits of trading systems almost without exception followed the mountain ridges separating basins of tributary river systems. Second, whereas in peripheral areas local and greater cities were oriented to single higher-level centers, in the more central areas a number of cities were oriented to two or more regional-city trading systems; no fewer than four greater cities and 21 local cities are shown at the boundaries of trading systems, reflecting their economic dependence on two or more of the eight nodes of regional-city trading systems. Third, with the exception of Kuang-yüan's trading system, which lay entirely in the regional periphery, each of the regional-city trading systems included core as well as peripheral areas. The general structure, then, was one in which regional-city trading systems tended to be discrete around the periphery and interdigitated within the core.

It is apparent that economic centers were sited on navigable waterways whenever possible, a preference that was general throughout China. An inspection of Map 1 reveals that of the 29 greater and higher-

* The chief explanations for this reversal of roles are all ultimately related (1) to the steady growth of extraregional trade via the downriver Yangtze route (both absolutely and as a proportion of the Upper Yangtze's total extraregional trade) and (2) to the fact that transport modernization within the region was limited almost entirely to waterways prior to the 1950's. Long before 1896, when the first steamship successfully breached the gorges between I-ch'ang-fu and Wan-hsien, Chungking had benefited from the increased economic activity in the Lower and Middle Yangtze regions that had followed the opening of Shanghai and Hankow as treaty ports and the introduction of mechanized transport in those regions. As of 1893, Chengtu was still the more populous of the two cities, although Chungking probably surpassed it in the number of shopkeeper households.

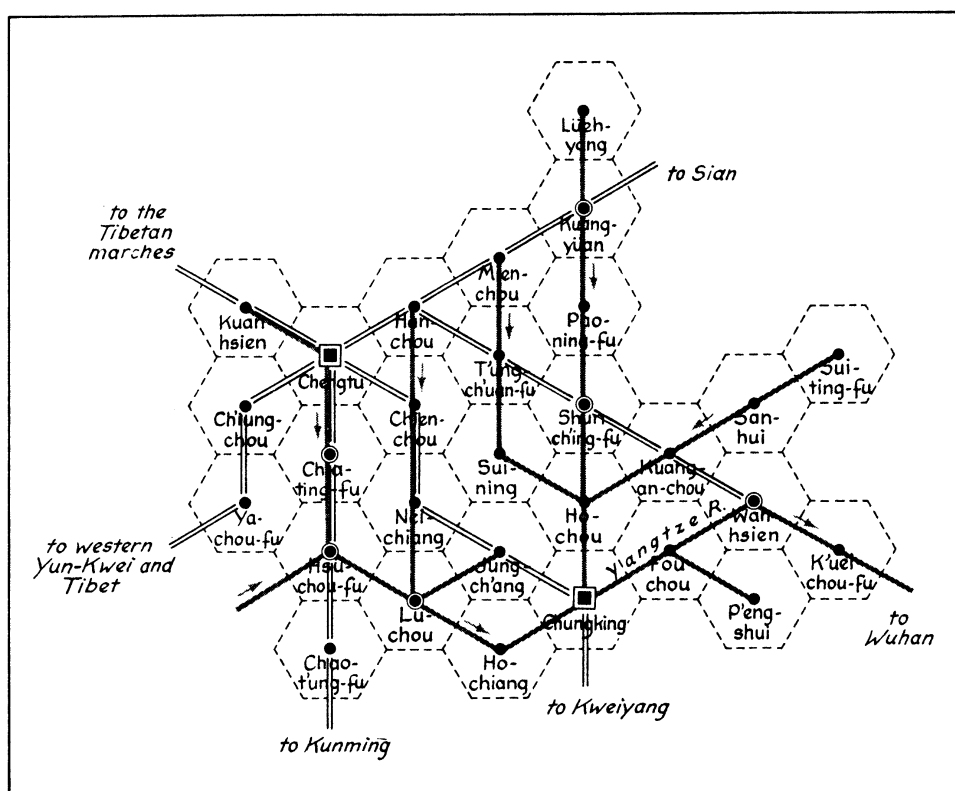
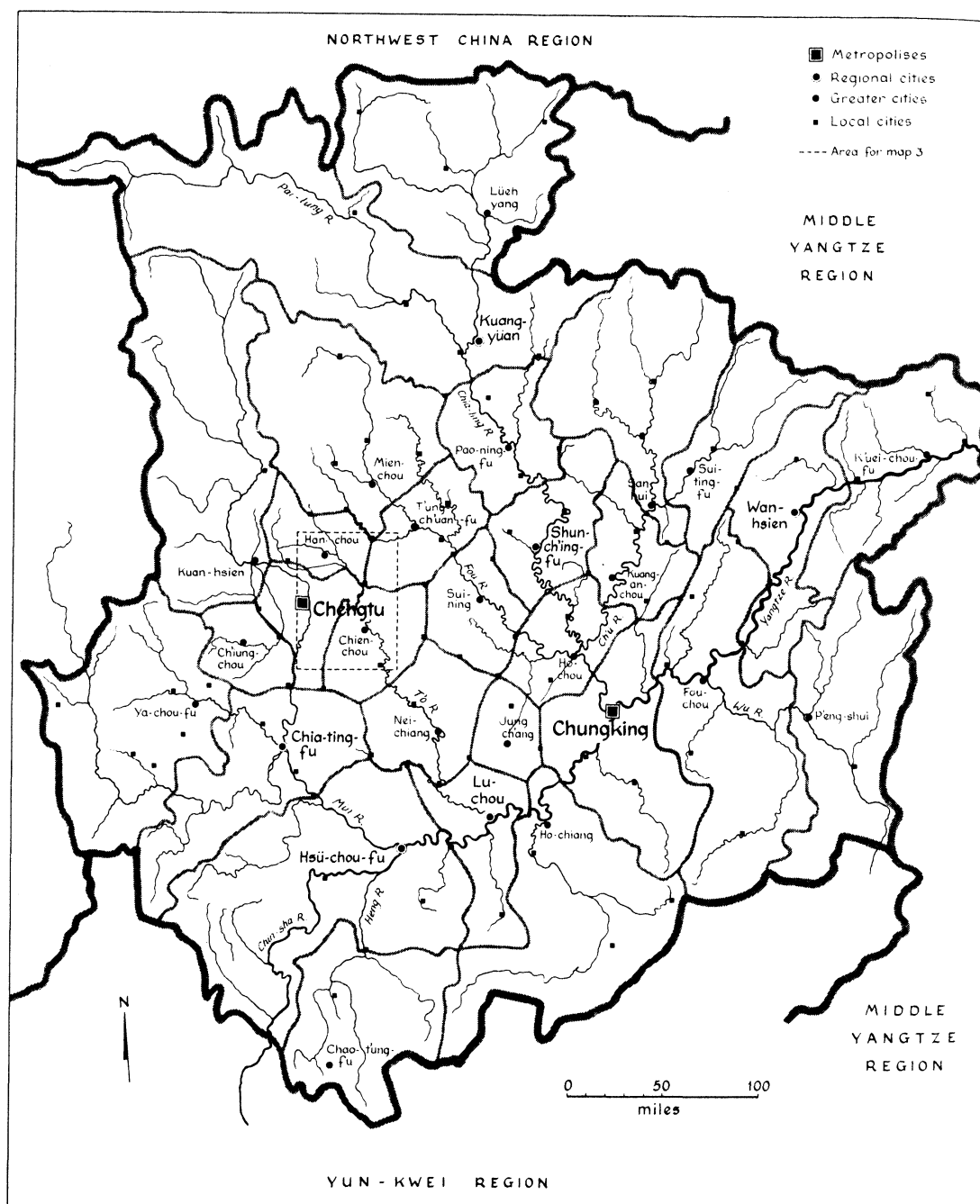


FIG. 2. GREATER-CITY TRADING SYSTEMS IN RELATION TO RIVERS AND MAJOR ROADS (SCHEMATIZED), UPPER YANGTZE REGION, 1893. Arrows show direction of flow of rivers.

level cities in the Upper Yangtze region, only one (Chao-t'ung-fu) was not sited on a river. (The Ch'ing-i River, on which Ya-chou-fu was situated, was unnavigable for certain downstream stretches.) This means that 27 cities of this class were served for at least part of the year by at least small craft.²¹

The essential structure of the region's transport network is schematized in Figure 2. It shows not only those portions of the Yangtze River and its tributaries that linked higher-level cities, but also the most important of the official roads (*kung-lu*), all of which radiated from Chengtu, the provincial capital of Szechwan.²² In many respects, the highway that ran from Ya-chou-fu through Chengtu to Kuang-yüan (continuing on to Sian and eventually to Peking) was the functional equivalent in Chengtu's metropolitan trading system of the Yangtze River in Chungking's metropolitan trading system. It is apparent that the structure of the river system virtually determined the siting of the region's higher-level economic centers and that major roads had the



MAP 2. THE UPPER YANGTZE REGION, 1893, showing rivers, central places down to the level of local cities, and the approximate extent of greater-city trading systems.

effect of compensating for deficiencies of the river system in linking those cities.*

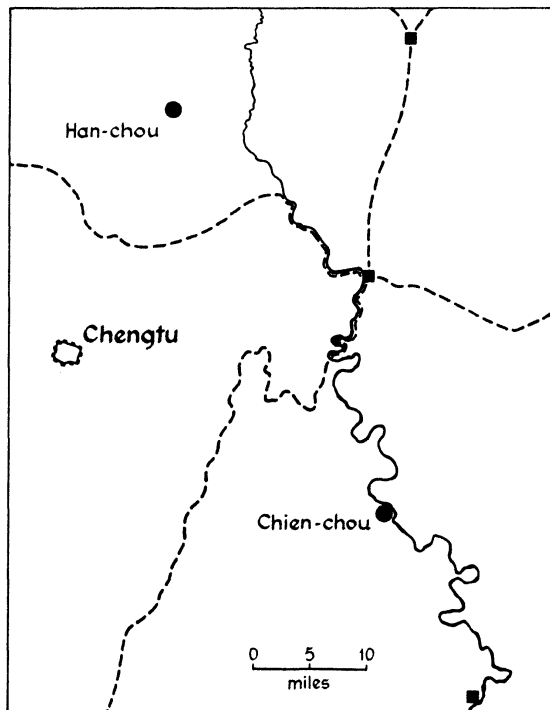
Map 2 shows greater-city trading systems, the next level below the regional-city trading systems shown in Map 1. In general, the pattern noted in Map 1 is recapitulated for the hinterlands of greater cities. System boundaries in the periphery were relatively impermeable, following mountain ridges that limited intercourse between cities in the various drainage basins, whereas those in the core passed through numerous local cities that were members of two or more greater-city trading systems.

Two of the most important ways in which transport systematically distorts the regularity of the central-place hierarchy were apparent in the Upper Yangtze, as in most other regions of late imperial China. First, major transport routes of all types foster linearity by attracting (as it were) central places that would otherwise be sited on a triangular lattice. This effect is evident in the siting of two local cities (rather than one) between higher-level cities along major rivers. On Map 2, note the placement of local cities between Wan-hsien and Fou-chou on the Yangtze, between Pao-ning-fu and Shun-ch'ing-fu on the Chia-ling River, between T'ung-ch'uan-fu and Sui-ning on the Fou River, between Chien-chou and Nei-chiang on the T'o River, and between Chia-ting-fu and Hsü-chou-fu on the Min River. A second distorting effect, wholly expectable in a regional system whose basic transport network is a river system, is the tendency for cities to be situated within their hinterlands off-center in the downstream direction. Examples apparent on Map 2 are the greater-city trading systems of Lüeh-yang, Kuang-yüan, Mien-chou and Kuan-hsien in the northwest, of Ho-chiang and P'eng-shui in the southeast, and of Sui-ting-fu and San-hui in the northeast.

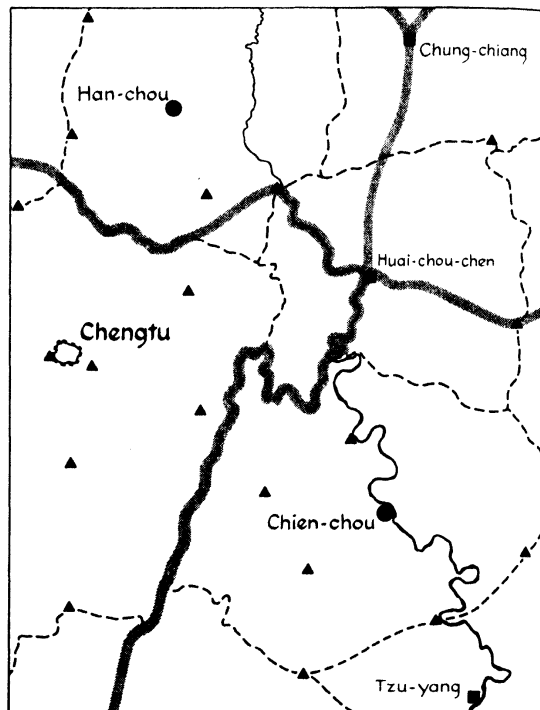
It is dramatically evident in Map 2 that the areas of greater-city trading systems at or near the periphery were larger than those in the regional core. This pattern illustrates the expected effect of sparse population and low commercialization in fostering large trading systems. Another feature of the Upper Yangtze system that has general significance is the contrast between relative irregularity in the spatial patterning of regional cities (and higher-level centers) vis-à-vis greater cities,

* In general the importance of navigable waterways in structuring regional urban systems was comparable in four other macroregions—the Middle Yangtze, the Lower Yangtze, the Southeast Coast, and Lingnan—to what we have seen for the Upper Yangtze. The importance of roads and overland transport was relatively greater in North China, absolutely greater in Northwest China, and overwhelmingly greater in Yun-Kwei.

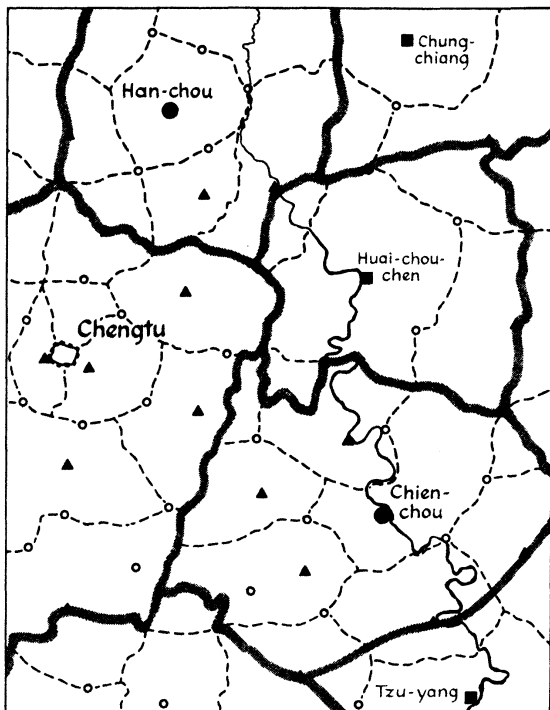
GREATER-CITY TRADING SYSTEMS



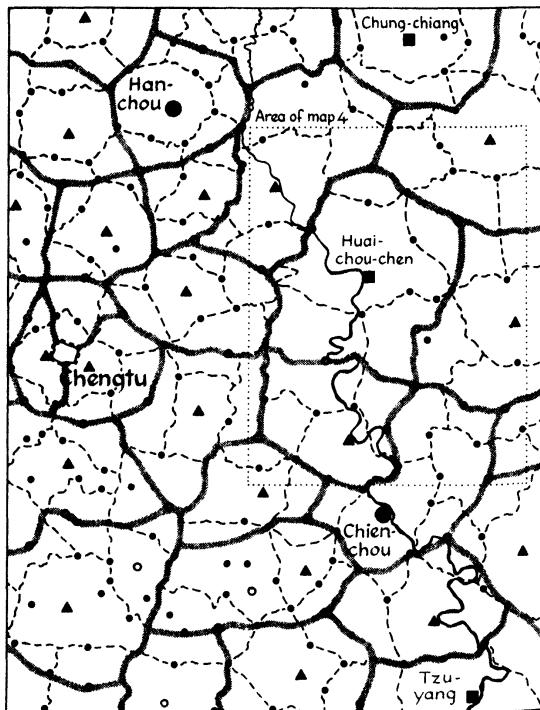
LOCAL-CITY TRADING SYSTEMS



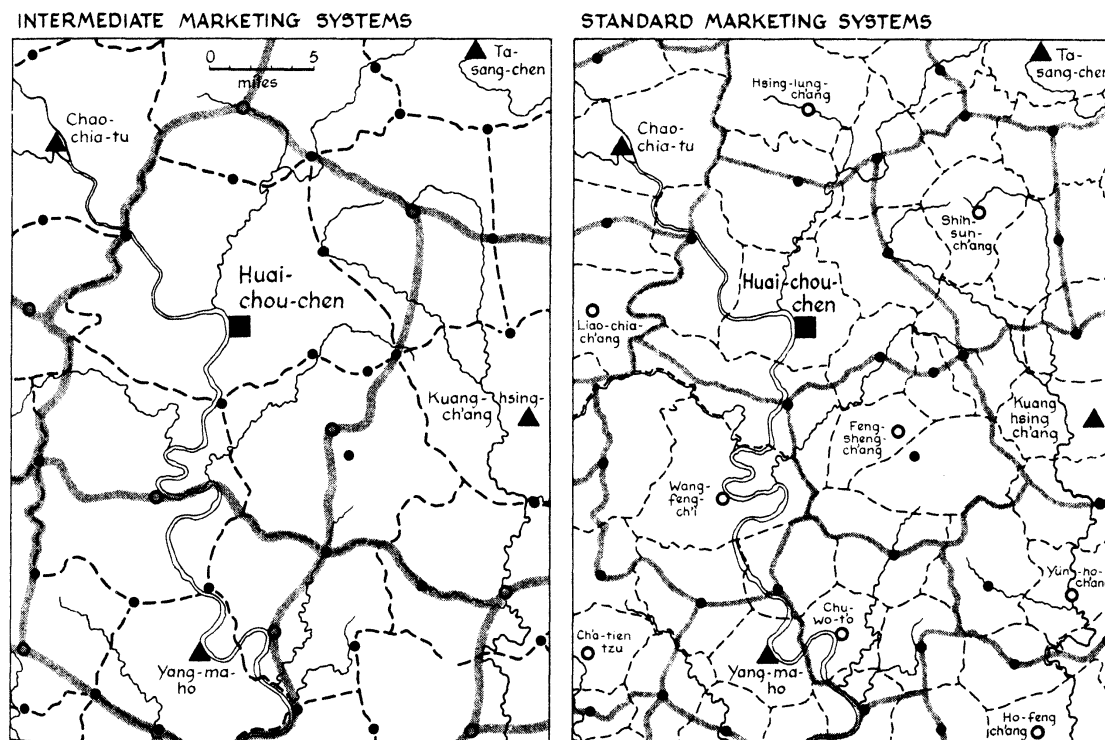
CENTRAL MARKETING SYSTEMS



INTERMEDIATE MARKETING SYSTEMS



MAP 3 (*opposite*). A SMALL PORTION OF THE UPPER YANGTZE REGION, 1893, showing the approximate extent of greater-city and local-city trading systems and of central and intermediate marketing systems. The wide shaded boundaries show the next higher system level in each case: the limits of greater-city trading systems upper right, of local-city trading systems lower left, and of central marketing systems lower right. Greater cities are shown as large solid circles, local cities as solid squares, central market towns as solid triangles, and intermediate market towns as open circles.



MAP 4. A STILL SMALLER PORTION OF THE UPPER YANGTZE REGION, 1893, showing the approximate extent of intermediate and standard marketing systems. The wide shaded boundaries show the next higher system level in each case: the limits of central marketing systems on the left and of intermediate marketing systems on the right. Local cities are shown as solid squares, central market towns as solid triangles, intermediate market towns as small open circles, and standard market towns as dots.

as against fairly regular patterning at lower steps of the economic hierarchy. Note in Figure 2 that the pattern established by the siting of Kuang-yüan, Shun-ch'ing-fu, Wan-hsien, Chungking, and Lu-chou vis-à-vis their dependent greater cities was broken in the western portion of the region, a function in part of "irregularities" in the structure of the river system, whereby the major river confluences at the sites of Lu-chou and Hsü-chou-fu are exceptionally close together, and in part of the "clumping" of resources in the Chengtu Plain, along the Yangtze between Hsü-chou-fu and Lu-chou, and northwest of Lu-chou along the T'o River. Such "coarse-grained" variations took their toll of regularity in the siting of regional and higher-level cities in most macroregions.

In general, within the same subsystem of centers I find that discrete stratification prevailed and that upward shift of functions to centers of the next higher level occurred in peripherally situated trading systems. Of the enterprises listed in the appendix (p. 351) as being diagnostic of local cities in the regional core of the Upper Yangtze, pawnshops are among those most often mentioned in gazetteers and other contemporary sources during the 1875-1912 period. Despite reservations about negative evidence, it is worth reporting that of all cities in the region for which the presence of pawnshops is documented during this period, those situated in the periphery were limited to greater and higher-level cities whereas those in the regional core included scores of local cities.

The arrangement of greater-city trading systems, as shown on Map 2, bears scant resemblance to an array of fitted hexagons. Nonetheless, it is apparent from Figure 2 that at the greater-city level the region's central places were generally distributed on a triangular grid. A count of the sixteen greater-city trading systems that did not abut on the regional boundary yields an average of 5.3 neighbors, with 6.0 representing perfect geometric regularity.

Map 3, which continues the progression down the hierarchy of nested economic systems, is necessarily limited to a small portion of the region, namely the area in the vicinity of Chengtu enclosed by the dotted rectangle on Map 2. The upper-left panel of Map 3, like Map 2, shows greater-city trading systems, thereby conveying a feel for the sharp increase in scale. Each of the other three panels of Map 3 takes us a step lower in the economic hierarchy. The upper-right panel shows local-city trading systems and central places down to the central market town; the lower-left panel shows central marketing systems and central places down to the intermediate market town; and the lower-right panel shows intermediate marketing systems and central places

down to the standard market town. In each case, system boundaries at the next higher level are indicated by wide shaded lines, thereby dramatizing the manner in which economic centers and hinterlands at each level were related spatially to those at adjacent levels in the hierarchy. In conjunction, they illustrate a general feature of the hierarchy of local economic systems, namely that whereas higher-level systems completely enveloped only one system at the next lower level (the one with the same node), they enveloped several systems at the level below that. We also see at each level the interstitial placement of orders that is characteristic of a regular central-place hierarchy: note in particular that the great majority of intermediate market towns fell at the borders of central marketing systems, i.e., were oriented economically to two or more central market towns, and that the great majority of standard market towns were similarly situated with respect to intermediate marketing systems.

The effect of topography may be seen in the coincidence of systemic boundaries at each level along the crest of the Lung-ch'üan Mountains, which range is penetrated by the T'o River just northwest of Huai-chou-chen. This feature illustrates the general principle, already noted with respect to higher-level systems in the regional periphery, that topographic barriers impede the usual overlapping of systems at adjacent levels of the hierarchy. The tendency for higher-level centers (in this case central market towns on up) to favor through transport routes is apparent along the course of the T'o River.

Map 4 completes the progression down the hierarchy of local economic systems. It is limited to a still smaller portion of the landscape, namely that enclosed by the dotted rectangle shown in the lower-right panel of Map 3. To ensure visual continuity, the left panel of Map 4 repeats at the larger scale what is shown within the dotted rectangle of Map 3. The right panel of Map 4 makes clear that nodes of standard marketing systems were not limited to standard market towns, but also included intermediate market towns, central market towns, and local cities. It shows that standard market towns were normally situated interstitially between higher-level towns and that standard marketing systems were invariably split between intermediate marketing systems. It was these spatial features, all predicted by central-place theory, which, through replication at successively higher levels, integrated local economic systems into the complex interlocking network of higher-order trading systems.

There is no space here to present a schematization of the landscapes

shown in Maps 3 and 4. However, the chief point that might thereby be conveyed visually can be suggested quantitatively by neighbor counts at the various levels. It was noted above that inspection of sixteen greater-city trading systems in the central area of the Upper Yangtze region indicated an average of 5.3 neighbors per system. The corresponding figures for lower-level systems wholly or partly included in Map 3 are 5.7 for the nine local-city trading systems, 5.8 for the 31 central marketing systems, 5.9 for the 75 intermediate marketing systems, and 6.0 for the 230 standard marketing systems. Such progressions were characteristic of core areas throughout agrarian China. We may conclude that within regional economic systems the arrangement of central places conformed most closely to the regular central-place model at lower levels of the hierarchy and in core areas as against regional peripheries.

A Comparison of Regional Urban Systems

Because of the unique physiographic configurations of China's macro-regions and the semi-independent nature of their various economic histories, no two urban systems were alike. The Middle Yangtze and the Southeast Coast are sharply subregionalized by physiographic features, whereas North China and the Lower Yangtze are not. Great variation obtained in the relative size and shape of the core and in the centrality of its location within the region, which factors strongly conditioned the characteristics of the various urban systems. Nonetheless, systematic comparison across all regions reveals regularities of some interest.

Table 2 sets out for each of the eight macroregional systems the num-

TABLE 2. NUMBER OF CENTRAL PLACES BY REGION
AND BY LEVEL IN THE ECONOMIC HIERARCHY, 1893
(Down to Central Market Towns)

Region	Level in the economic hierarchy						Total
	Central metropo- lis	Regional metropo- lis	Regional city	Greater city	Local city	Central market town	
Northwest China	1	2	7	18	55	178	261
Yun-Kwei	—	2	3	13	36	112	166
Lingnan	1	2	7	24	71	223	328
Middle Yangtze	1	3	10	25	115	403	557
Upper Yangtze	1	1	6	21	87	292	408
Southeast Coast	—	1	4	11	42	147	205
North China	1	6	18	64	189	697	975
Lower Yangtze	1	3	8	24	74	267	377
Total	6	20	63	200	669	2,319	3,277

ber of central places at each level of the economic hierarchy down to and including central market towns. (Note that the urban system of the Upper Yangtze was about average in terms of number of central places.) The implications of these regional data are brought out in Table 3, which displays the average areas and populations of trading systems at five levels of the hierarchy. In relating Table 3 to the figures of Table 2, it should be remembered that high-level cities have multiple concentric hinterlands. A regional city is the node not only of a regional-city trading system but also of a greater-city trading system, of a local-city trading system, and of a central marketing system. Thus, the numbers of trading systems in Table 3 are cumulations of the numbers of centers shown in Table 2. Regional cities, for instance, were nodes of only 63 of the 89 regional-city trading systems, the others being accounted for by the twenty regional metropolises and the six central metropolises. As expected, the size of hinterlands, whether measured by area or population, decreased decisively in each region from one order to the next lower order in the hierarchy.

Rather more interesting are the comparative size regularities to which attention has been called by ordering the regions according to their average population densities. The pattern that holds in general for trading systems at all levels appears most clearly in the case of central marketing systems: whereas the average area of hinterlands at a given level is related linearly to population density (with area declining steadily as density increases), the average hinterland population shows a curvilinear relationship, increasing along with density up to a point and thereafter decreasing with still higher densities. The overall dynamics of these interrelationships can be captured by comparing four groupings of regions without reference to within-group differences. Demand density (purchasing power per unit of area) was highest in the Lower Yangtze, relatively high in the Southeast Coast and in North China, middling in the Upper and Middle Yangtze regions and Lingnan, and low in Yun-Kwei and Northwest China. It is apparent that as demand density decreases (moving up the table), hinterland area increases by way of compensation. It does not keep pace, however, because a declining population density is related not only to the decrease in demand density but also to an increase in the distance from the center in question to the limits of its hinterland. If the area of hinterlands were to be enlarged in proportion to the decline in demand density, then purchasing power in the more remote areas would be lost to *any* center by reason of excessive transport costs. Thus, in that portion of the regional continuum with relatively sparse populations, one sees a trade-

TABLE 3. CITY-CENTERED ECONOMIC SYSTEMS, BY REGION, 1893

Region ^a	Density (persons per sq. km.)			Metropolitan trading systems			Regional-city trading systems		
	Area (sq. km.)	Pop. (000)		No.	Ave. area (000)	Ave. pop. (000)	No.	Ave. area (000)	Ave. pop. (000)
Northwest China	746,470	24,000	32	3	248.8	8,000	10	74.6	2,400
Yun-Kwei	470,570	16,000	34	2	235.3	8,000	5	94.1	3,200
Lingnan	424,900	33,000	78	3	141.6	11,000	10	42.5	3,300
Middle Yangtze	699,700	75,000	107	4	174.9	18,750	14	50.0	5,357
Upper Yangtze	423,950	53,000	125	2	212.0	26,500	8	53.0	6,625
Southeast Coast	190,710	26,000	136	1	190.7	26,000	5	38.1	5,200
North China	771,300	122,000	158	7	110.2	17,429	25	30.9	4,880
Lower Yangtze	192,740	45,000	233	4	48.2	11,250	12	16.1	3,750
Total	3,920,340	394,000	101	26	150.8	15,154	89	44.0	4,427

^a Regions are ordered according to population density, low to high from top to bottom.

Region	Greater-city trading systems			Local-city trading systems			Central marketing systems		
	No.	Ave. area	Ave. pop. (000)	No.	Ave. area	Ave. pop. (000)	No.	Ave. area	Ave. pop. (000)
Northwest China	28	26,660	857	83	8,994	289	261	2,860	92
Yun-Kwei	18	26,140	889	54	8,714	296	166	2,834	96
Lingnan	34	12,500	970	105	4,047	314	328	1,295	101
Middle Yangtze	39	17,940	1,923	154	4,543	487	557	1,256	135
Upper Yangtze	29	14,620	1,828	116	3,654	457	408	1,039	130
Southeast Coast	16	11,920	1,625	58	3,288	448	205	930	127
North China	89	8,670	1,370	278	2,774	439	975	791	125
Lower Yangtze	36	5,350	1,250	110	1,752	409	377	511	119
Total	289	13,570	1,363	958	4,092	411	3,277	1,196	120

off whereby the average area increases (with declining demand density) at so gradual a rate that the average hinterland population declines. In Northwest China and Yun-Kwei, goods appropriate to centers at a given level had ranges that were, in a manner of speaking, unduly restricted for the ecological environment, whereas firms appropriate to such centers had thresholds that were unduly extended; the result of this "squeeze" was that hinterlands were at once overlarge in area and not large enough in population.

In that portion of the regional continuum with relatively dense populations, purchasing power becomes critical in understanding the relationships revealed in Table 3. The Lower Yangtze as a whole was far more commercialized than the Southeast Coast, which in turn was more commercialized than the Middle Yangtze. The implication is that 1.2 million people in the Lower Yangtze (the average population of a greater-city trading system) generated at least as much demand as 1.6 million in the Southeast Coast and 1.9 million in the Middle Yangtze. And there is no reason to doubt it; one would, in fact, expect the *total* purchasing power of a greater-city trading system, say, to be smaller in the Middle than in the Lower Yangtze (rather than the same) owing to the effect of higher transport costs in limiting hinterland size. In short, the curvilinear relationship of population density with average hinterland population is but a manifestation of a more basic linear relationship with the total purchasing power of the various regions.

Note the following irony. The Upper Yangtze was chosen as the region for detailed analysis in part because of its typicality: an internal physiography that fell midway between the extremes, an urban system of average size, and an overall population density that put it closer than any other region to the empirewide average. Yet its city-centered trading systems were among the most populous in all of China.

The Official Administrative Hierarchy

Most of China's central places that ranked as local cities or higher in the economic hierarchy also served as administrative capitals. For instance, in the Upper Yangtze as of 1893, all eight of the regional cities and metropolises were capitals, as were twenty of the 21 greater cities, 68 of the 87 local cities, and 43 of the 292 central market towns. I now turn to a description of field administration in order to explore the ways in which the administrative central functions of cities and their place in the administrative hierarchy interacted with their economic central functions and place in regional economic systems.

The Ch'ing field administration²³ may be conveniently described as

having four levels below the imperial capital.* At the highest level, the eight governor-generalships and eighteen provinces were interdigitated to constitute in effect nineteen governments in as many capital cities. Only three of the eight capitals with a governor-general's yamen (Canton, Wu-ch'ang-fu, and Kunming) also housed a governor's yamen. Three provinces (Shansi, Honan, and Shantung) belonged to no governor-generalship, and two governor-generalships consisted of a single province each (Chihli and Szechwan). Nanking, capital of the Liang-chiang governor-generalship, was situated in Kiangsu, whose provincial government was at Soochow; nonetheless, the Nanking government included several high officials (e.g., a lieutenant governor and a provincial director of education) otherwise found exclusively in provincial capitals.²⁴ In any case, the present analysis ignores the administrative distinctions among the nineteen cities that served as capitals of provinces and/or governor-generalships.

The eighteen provinces were subdivided into 77 circuits (*tao*), some of which were classified as military circuits. In some respects, circuit yamens resembled specialized offices of the provincial government more than administrative offices at a separate level of the territorial hierarchy. For instance, circuit intendants were primarily responsible for diplomatic relations with foreigners even within the circuit that contained the provincial capital. The official educational hierarchy concerned with supervising and accrediting scholars and administering imperial examinations bypassed circuits altogether. Nor were official temples and altars prescribed for the circuit level, as they were for the other three levels of field administration. Nonetheless, the circuit intendant maintained a yamen in a city within the territorial area of his circuit, and prefects and other officials at the next lower level were directly accountable to him for a wide range of civil and military affairs. And despite anomalies, circuit yamens were traditionally located in cities that were capitals by virtue of having yamens for other levels of the administrative hierarchy.

* This analysis is limited to agrarian China minus Manchuria and Taiwan, specifically to the eight macroregions defined in my Part One paper (see Maps 1 and 2, pp. 214–15). As of 1893, the combined territory of these regions contained 1,576 county-level units, inclusive of areas directly administered from prefectural-level capitals. At that time the empire as a whole contained approximately 80 additional county-level units, not treated here; most of the excluded units were in Sinkiang, Manchuria, and Taiwan, but several were located in the arid and/or mountainous periphery of China proper, most notably northern Chihli, western Szechwan, and northwestern Yunnan (see Map 2). The 1,576 county-level units under consideration contained only 1,549 capitals because yamens of adjacent county-level units were occasionally located in the same city.

The next lower level included three types of administrative units: prefectures (*fu*), by far the most numerous; autonomous *chou*, also called independent departments (*chih-li chou*); and autonomous *t'ing*, also called independent subprefectures (*chih-li t'ing*). The relative importance of these prefectural-level units is suggested by the bureaucratic rank of the superior incumbent official, normally 4b for a prefecture, 5a for an autonomous *chou*, and 5a or 6a for an autonomous *t'ing*.^{*} This rank order was reflected in the relative population of prefectural-level capitals. On the average, the capitals of prefectures were more populous than those of autonomous *chou*, which in turn were more populous than those of autonomous *t'ing*.²⁵ The classic contemporary description of Ch'ing administration tells us that autonomous *t'ing* "represent a lower form of local government," having been "made independent of the prefectural government because of their importance or territorial magnitude." Moreover, autonomous *chou* and *t'ing* "represent intermediate stages in the transformation of ordinary [*chou* and *t'ing*] into prefectures. For this reason they are observed to be most numerous on the borders of the Empire."²⁶ We shall have reason below to modify and elaborate this interpretation, but for the moment it may serve to signal the status of autonomous *chou* and *t'ing* as at once lower ranking than prefectures and somehow special.

Three different types of units were also found at the fourth and lowest level of bureaucratic administration, namely, counties (*hsien*), by far the most numerous; ordinary *chou*, also known as dependent departments (*san-chou* or *shu-chou*); and ordinary *t'ing*, also known as dependent subprefectures (*san-t'ing* or *shu-t'ing*).[†] All three types of county-level units could be subordinate to prefectures, whereas with one exception ordinary *chou* and *t'ing* were never subordinate to autonomous *chou* or *t'ing*.²⁷ By contrast with the prefectural level, where autonomous *chou* and *t'ing* were outranked by prefectures, at the county

* There were nine bureaucratic ranks, each divided into an upper (a) and lower (b) subrank. Rank 1a was highest, 9b lowest.

† Arguably a still lower level of administration existed in embryonic form. Certain county-level units contained subdistricts (*ssu*) whose "capitals" were towns where a special category of deputy magistrate (*hsün-chien*) served. Since such towns typically ranked among the most important within their counties, there would be good reason for keeping them distinct in analysis. On the other hand, subdistricts were never considered a regular administrative unit at the subcounty level—on the contrary, *hsün-chien* were considered an integral part of the county-level government—and their number was repeatedly reduced during late imperial times. At any event, in the present analysis I have reluctantly merged this small class of subadministrative towns with nonadministrative centers—a decision that greatly simplifies presentation without materially altering the results.

level ordinary *chou* and *t'ing* officially outranked counties. The chief bureaucrat of an ordinary *chou* was normally of rank 5b and that of an ordinary *t'ing* of rank 6a (occasionally 5a), whereas the rank of a county magistrate was normally only 7b. City size, however, suggests a different ordering. True enough, *chou* capitals tended to be larger than either *hsien* or *t'ing* capitals, but *t'ing* capitals were smaller on the average than *hsien* capitals, not larger—as might be expected from the official ranking.²⁸ This discrepancy will be explained when the regional distribution of types of capital cities is considered below.

The hierarchical ordering that ran from province to prefecture to county was seen as the standard administrative arrangement. Prefectures and counties, as we have seen, greatly outnumbered other administrative units at their respective levels. Moreover, provincial capitals were invariably capitals of prefectures (never of autonomous *chou* or *t'ing*), and prefectural capitals were invariably capitals of counties (never of ordinary *chou* or *t'ing*). The standard hierarchy of province-prefecture-county was structured in the manner familiar to us from most modern administrative arrangements. The territory of a province was exhausted by prefectural-level units, and the capital of one of these, termed hereafter the metropolitan prefecture, also served as the provincial capital. Similarly, the territory of a prefecture was exhausted by county-level units, and the capital of one of these, termed hereafter the metropolitan county, also served as the prefectural capital. Thus, every provincial capital had minimally three yamens, one each for the provincial governor, the prefect, and the county magistrate, and every prefectural capital had minimally two yamens, one each for the prefect and the county magistrate.

The arrangement was quite different in the case of an autonomous *chou*, whose territory was not exhausted by its subordinate counties. Rather, what would otherwise be considered the metropolitan county-level unit had no government of its own. Known as the *pen-chou* (the “root” *chou*, or *chou* proper), it was administered directly by the government of the autonomous *chou*, whose capital thus lacked a county-level yamen. The entire category of *pen-chou* tends to be lost in administrative records and to be overlooked in analyses of Ch'ing administration since *pen-chou* do not appear as administrative units in official compendia such as the *Hui-tien* or the *Chin-shen ch'üan-shu*. Autonomous *t'ing* were more anomalous still in that, with two exceptions, they lacked subordinate county-level units altogether. Thus, the county-level “*pen-t'ing*” (the term was not used) exhausted the territory of the prefectural-

TABLE 4. SPAN OF CONTROL BY TYPE OF ADMINISTRATIVE CENTER, 1893
(Prefectural and Higher-level Capitals Only)

Span of control ^a	Capitals of									
	Metropolitan prefectures		Ordinary prefectures ^b		Autonomous <i>chou</i>		Autonomous <i>t'ing</i>		Total	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
1			4	13%		0%	28	88%	32	100%
2			4	27	9	60	2	13	15	100
3			8	25	24	75		0	32	100
4			21	53	19	48			40	100
5		0%	22	71	9	29			31	100
6	2	6	22	71	7	23			31	100
7-8	3	6	48	94		0			51	100
9-10	4	16	21	84					25	100
11-13	4	29	10	71					14	100
14+	7	78	2	22					9	100
Total	20	7%	162	58%	68	24%	30	11%	280	100%

^a I.e., the number of county-level yamens supervised by a given prefectural-level yamen.^b Includes the two sectoral capitals in the imperial prefecture that served as circuit capitals.

level autonomous *t'ing*, and there was of course only a single administrative yamen in the capital city.*

This last distinction draws our attention to span of control, a formal feature of field administration that sharply differentiated the three types of prefectural-level units. The analysis pursued here refers solely to control of county-level yamens by their superior prefectural-level yamens. Span is said to be narrow when the superordinate office has only a few subordinate offices to supervise, and broad when the subordinate offices are many. In Ch'ing China, the number of county-level units per prefectural-level unit ranged from one to eighteen, not counting the exceptional imperial prefecture, which had 24; the mean fell between five and six. Table 4 shows the span of control of all prefectural-level units

* In fact some "rectification of names" would have been in order in the field administrative system of late Ch'ing. Two autonomous *t'ing* (Pai-se in Kwangsi and Hsü-yung in Szechwan) and six prefectures (Hsing-i, Shih-ch'ien, Ssu-chou, Ssu-nan, and Ta-ting, all in Kweichow, and Ssu-en in Kwangsi) were structurally identical to autonomous *chou*, and I have been unable to ascertain any reason why they were not so designated. The anomalous *t'ing* each contained one county in addition to the directly ruled area, and in the anomalous prefectures what would have been the metropolitan county was a directly ruled area analogous to a *pen-chou*. The six prefectures thus constitute an exception to the general rule given in the text that every prefectural capital contained at least one county yamen. Where appropriate in subsequent statistical analyses, these anomalous cases are classed with the capitals of autonomous *chou*.

TABLE 5. SPAN OF CONTROL BY TYPE OF CAPITAL, 1893
(County-level Capitals Subordinate to Prefectures Only)

County-level capital	Span of control ^a						Total	
	-6		7-8		9+			
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
<i>Hsien</i>	225	25%	242	27%	421	47%	888	100%
<i>Chou</i> ^b	37	27	48	35	51	38	136	100
<i>T'ing</i>	26	43	10	17	24	40	60	100
Total	288	27%	300	28%	496	46%	1,084	100%

^a Span of control refers here to the number of units in the prefecture to which the county-level unit in question belonged.

^b Excludes sectoral capitals in the imperial prefecture.

by type of prefectural-level capital. We have already noted that the span of control of autonomous *t'ing* was normally only one, and it is clear from the table that autonomous *chou* had relatively narrow spans; they ranged from two to six with a mean of 3.7. Ordinary prefectures had spans clustered in the range from four to ten, with a mean of 6.6, whereas metropolitan prefectures (i.e., those whose capitals were provincial or higher capitals) had still broader spans, ranging from six to 24, with a mean of 11.9.

At the county level, too, units were distinguished by span of control. It follows from what has already been said that counties in autonomous *chou* would be more closely supervised (in the sense of belonging to superordinate units with relatively narrow spans of control) than counties in prefectures. However, there is no a priori reason for expecting differences among the three types of units within prefectures. Nonetheless, as shown in Table 5, ordinary *t'ing* were disproportionately found in prefectures with narrow spans (six or less), ordinary *chou* in prefectures with intermediate spans (seven to eight), and *hsien* in prefectures with broad spans (nine or more).

The key to span variations at both levels of the administrative hierarchy lies in the distinctive locational patterns of different types of capitals within regional urban systems, a subject I take up in the following section. But first a summary of the various types of capital cities is in order. Details are presented in Table 6, where the numerical preponderance of prefectural and county capitals at their respective levels is immediately apparent. Table 6 also points up the peculiar distribution of circuit yamens. If circuits had fitted "properly" into the field-administrative system, then all higher-level capitals would also have been circuit capitals and all circuit capitals would also have been prefectural-level capitals. However, exceptions to both expectations are apparent

TABLE 6. CAPITALS BY ADMINISTRATIVE LEVEL AND RANK, 1893

Capitals of	Also circuit capitals		Not also circuit capitals	Total
	No.	Pct.		
Provinces and/or governor-generalships	16	84%	3	19
Sectors of the imperial prefecture ^a	2	50	2	4
Prefectures ^b	41	26	119	160
Autonomous <i>chou</i>	6	9	62	68
Autonomous <i>t'ing</i> ^c	2	7	28	30
<i>Chou</i> in prefectures	2	2	134	136
<i>T'ing</i> in prefectures ^d	3	5	57	60
Nonmetropolitan <i>hsien</i> in prefectures	5	1	883	888
<i>Hsien</i> in autonomous <i>chou</i>	0	0	184	184
Total	77	5%	1,472	1,549

^a Of the four sectors into which Shun-t'ien *fu*, the imperial prefecture, was divided, three formed one circuit whose capital was at Ch'ang-p'ing-chou, which also served as capital of the North sector. The East sector, together with Yung-p'ing *fu*, formed a separate circuit whose capital was at T'ung-chou, which also served as capital of the East sector. Thus, the capitals of the South and West sectors, Pa-chou and Wan-p'ing (the latter one of Peking's two metropolitan counties) did not serve as circuit capitals, and Peking (which does not appear elsewhere in this table) was not itself a circuit capital.

^b The Wuhan conurbation, which in this analysis is counted as a single economic center, appears in this row as two prefectural capitals, Wu-ch'ang-fu and Han-yang-fu, both also circuit capitals. This was not strictly true in the latter case, for the circuit yamen was located in Hankow, an otherwise nonadministrative center in the metropolitan county of Han-yang *fu*.

^c Kuei-sui, which in this analysis is counted as a single economic center, appears in this row as two *t'ing* capitals. Sui-yüan also served as a circuit capital, whereas Kuei-hua-ch'eng did not.

^d Chiang-pei-t'ing, situated directly across the Chia-ling River from Chungking, is in this analysis considered together with that prefectural capital as a single economic center. However, it appears in this row as a separate capital.

from the table. Peking and three provincial capitals (Soochow, Hangchow, and Canton) did not serve as circuit capitals, whereas ten county-level capitals did. These administrative irregularities, together with the functional anomalies of circuits mentioned previously, can best be understood when related to China's spatial structure, to which we now return.

The Regional Basis of Field Administration

In late imperial China, field administration was designed not only to promote social order and foster the well-being of the populace, but also—and more importantly—to ensure the regular flow of revenue, to defend the various parts of the realm against internal and external enemies, and to prevent the concentration or consolidation of local power that might pose a threat to imperial control. It is my thesis that all of these administrative concerns varied in rough correspondence with the structure of physiographic regions, and that in consequence so did administrative arrangements and the character of capital cities.

In a word, I argue that revenue and defense were inversely related in regional space such that in the central areas of regional cores local government was preoccupied with taxation to the virtual exclusion of military affairs, whereas along regional frontiers local government was preoccupied with defense and security to the virtual exclusion of fiscal affairs. As for the potential threat of local power, I would suggest that in core areas the chief danger lay in concerted action by the leading elements of society, whereas in peripheral areas it lay in the mobilization of heterodox elements. Finally, I believe it can be shown that the political structure, and above all the leadership of local social systems, varied according to place in the overall regional structure in such a way that the burden of societal management to be shouldered by local government was relatively lighter in cores than in peripheral areas. If, as these propositions suggest, the mix of administrative priorities and tasks varied systematically through the spatial structure of regions, then the central functions of administrative capitals would have been differentiated accordingly.

Let us begin with the distribution of the various types of capitals as between regional cores and peripheries. Table 7 summarizes the relevant data for the eight macroregions combined. We see in the upper portion, which focuses solely on administrative centers within prefectures, that the capitals of metropolitan prefectures (i.e., provincial and higher-level capitals) were far more often located in regional cores than were nonmetropolitan prefectural capitals. Moreover, county-level units

TABLE 7. CAPITALS OF DIFFERENT LEVELS AND TYPES BY LOCATION IN REGIONAL CORES OR PERIPHERIES

Capitals of	Cores		Peripheries	Total
	No.	Pct.		
Metropolitan prefectures	17	85%	3	20
Ordinary prefectures	80	53	70	150
Other counties in prefectures	468	53	420	888
<i>Chou</i> in prefectures ^a	63	45	76	139
<i>T'ing</i> in prefectures	13	22	47	60
Autonomous <i>chou</i> ^b	31	41	45	76
<i>Hsien</i> in autonomous <i>chou</i>	72	39	112	184
Autonomous <i>t'ing</i> ^c	6	19	26	32
Total	750	48%	799	1,549

^a Includes *T'ung-chou*, *Ch'ang-p'ing-chou*, and *Pa-chou*, sectoral capitals in the imperial prefecture.

^b Includes capitals of the two autonomous *t'ing* and six prefectures that were structurally analogous to autonomous *chou*.

^c Includes capitals of the four prefectures with only a single subordinate *hsien*.

within prefectures were sharply differentiated in this respect by administrative type. Ordinary *chou* were more likely to be peripherally situated than nonmetropolitan counties, and ordinary *t'ing* were still more strongly concentrated in regional peripheries. This reflects two systematic biases: (1) only the more peripherally situated prefectures were likely to contain any *chou* or *t'ing* at all; and (2) within such prefectures, the *chou* and/or *t'ing* were situated more peripherally than were counties. In the lower part of the table we see that capitals of autonomous *chou* and their component counties were somewhat more peripheral in their distribution than were ordinary *chou*, and that autonomous *t'ing* were concentrated no less heavily in the peripheries than were ordinary *t'ing*. As one might suspect, the rough dichotomization of regions into cores and peripheries obscures another regularity that in fact obtained: within regional peripheries, *t'ing* tended to be more peripherally located than *chou*.

The next question concerns the extent to which the differences in span of control that were found above to be associated with level and type of administrative capital were themselves simply a reflection of place in the core-periphery structure of regions. We see in Table 8 that for higher-level capitals of each type the span of control was relatively broad in the regional cores and relatively narrow in regional peripheries. Once again, there obtained a fairly regular progression that is partially obscured in Table 8 by the simple dichotomization of the core-periphery variable: the broadest spans tended to occur in the centers of regional cores, and the narrowest ones toward the rim of the regional peripheries. This resulted not only from a concentration of autonomous *t'ing* (typically with a span of one) in the far periphery and of autonomous *chou* (with spans of two to six) in the intermediate range, but also from systematic variation in the number of county-level units within both prefectures and autonomous *chou* according to their specific location within the region's core-periphery structure. Note, however, that span of control is not simply a function of the prefectural-level unit's position in the core-periphery structure; that is, type of capital has an independent effect, a point that can be readily grasped by focusing on units with the same span. Of those with a span of six, for instance, the proportion situated in the cores declined from 71 percent of the autonomous *chou* to 39 percent of the prefectures to none of the provincial and higher-level capitals.

As for the different types of units at the county level, we have already established that peripherally located prefectures were more likely to

TABLE 8. SPAN OF CONTROL BY LOCATION IN REGIONAL CORES OR PERIPHERIES, 1893
(*Prefectural and Higher-level Capitals Only*^a)

Provincial and higher-level capitals				Prefectural capitals				Capitals of autonomous <i>chou</i> and autonomous <i>t'ing</i>			
Span of control	Cores No.	Periph- eries	Total	Span of control	Cores No.	Periph- eries	Total	Span of control	Cores No.	Periph- eries	Total
6		2	2	3	4	13	17	1-2	6	33	39
7-10	6	1	7	4-5	14	27	41	3	7	17	24
11+	11	1	11	6	9	14	23	4	7	12	19
				7	11	14	25	5	5	4	9
				8+	32	22	54	6	5	2	7
Total	17	3	20	Total	70	90	160	Total	30	68	98

^a Span of control in this table refers to the number of county-level units subordinate to the prefectural-level yamen in the capital in question. Secondary capitals in the imperial prefecture are not included. Han-yang-fu is counted separately from Wu-ch'ang-fu, and Kuei-hua-ch'eng is counted

separately from Sui-yüan. Status as circuit capitals is not taken into account in the classification of capitals. The core/periphery classification relates here to the prefectural-level capital per se, not to the prefecture as a whole; cf. Table 10.

TABLE 9. SPAN OF CONTROL BY LOCATION IN REGIONAL CORES OR PERIPHERIES, 1893
(*County-level Capitals Subordinate to Prefectures Only^a*)

Hsien in prefectures ^b					Ordinary chow ^c					Ordinary t'ing				
Span of control	Cores		Periph- eries	Total	Span of control	Cores		Periph- eries	Total	Span of control	Cores		Periph- eries	Total
	No.	Pct.				No.	Pct.				No.	Pct.		
-6	64	27%	168	232	2-3		0%	3	3	-5		0%	16	16
7	46	36	82	128	4-7	14	25	42	56	6-8	4	25	16	20
8-10	144	46	168	312	8-10	16	36	28	44	9	8	30	16	24
11-13	69	57	53	122	11+	18	50	18	36					
14+	93	78	26	119										
Total	416	46%	497	913	Total	48	35%	91	139	Total	12	20%	48	60

^a Span of control in this table refers to the number of units in the prefectural-level unit to which the county-level unit in question belonged. Chiang-pei-t'ing is counted separately from Chungking. Status as circuit capitals is not taken into account in the classification of capitals. Recalculation: from Table 8: 20 + 160 + 98 = 278; from this table, 913 + 139 + 60 = 1112. In addition, there were 186 *hsien* in autonomous *chow*,

not shown here. The total number of county-level units covered by this analysis is 278 + 1112 + 186 = 1576.

^b Includes 25 "extra" *hsien* whose capital was shared.

^c Includes T'ung-chow, Ch'ang-p'ing-chow, and Pa-chow, which also served as sectoral capitals within the imperial prefecture.

include ordinary *chou* and *t'ing* among their subordinate units and that *t'ing* in particular were concentrated in the most peripheral prefectures. As shown in Table 9, this finding is also closely associated with differences in span of control. One could conclude either that prefectures had been made smaller in areas where proportionately many of the county-level units were *chou* and *t'ing* (which areas were empirically concentrated in regional peripheries) or that prefectures had been made smaller in regional peripheries (where *chou* and *t'ing* happened to be concentrated); but either way, *t'ing* yamens were likely to be more closely supervised than *chou* yamens, which in turn were likely to be more closely supervised than *hsien* yamens.

We are now in a position to demonstrate that the span of control of prefectural-level units varied systematically not only with position in the regional core-periphery structure but also with the level of their capitals in the economic central-place hierarchy. Since the spans of prefectural-level units at any given level tended to be narrower in the periphery than in the core, it is parsimonious to present the data by grouping peripheral capitals at one level of the economic hierarchy with core capitals at the next lower level of the economic hierarchy, as in Table 10. This arrangement in effect shows the span of control of all capitals at the prefectural level or higher arranged by position in their respective economic systems. The message of the table is unmistakable. Cities whose economic centrality was exceptionally high tended to be capitals of extra-large prefectures with extraordinarily broad spans of control (upper-right corner of the table). Span declined steadily and regularly with the capital's economic centrality until, in the lower-left corner of the table, cities of exceptionally low economic centrality are seen to have been capitals of very small prefectural-level units with extraordinarily narrow spans of control.

A part of the explanation for this relationship undoubtedly relates to the effective distance between the prefectural-level yamen and the yamens of its subordinate counties. In the prefectures at the upper-right of Table 10, counties on the average were relatively small in area (though large in population), and transport costs were relatively low. County-level units in the diagonally opposite corner, however, were on the average much larger in area (though small in population), and transport costs were relatively high. Thus, in terms of the friction of distance to be overcome in reaching subordinate capitals from the prefectural-level capital, the most distant county capital in a fourteen-county prefecture (upper right) might well be closer than the closest subordinate capital in a two-county autonomous *chou* (lower left).

TABLE 10. SPAN OF CONTROL BY POSITION IN REGIONAL ECONOMIC SYSTEMS, 1893
(*I.e. by a Classification Combining Level in the Economic Hierarchy with Location in Regional Cores and Peripheries, Prefectural and Higher-level Capitals Only*)

Level in the economic hierarchy	Regional cores (C) or peripheries (P) ^a	Span of control ^b								Total					
		1-2		3-4		5-7		8-9				10-13		14+	
		No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Central metropolis	C				0%		0%		0%	1	20%	4	80%	5	100%
Regional metropolis	C		0%	2	12%	3	18%	3	18%	5	29%	4	24%	17	100
Regional metropolis	P	1	4%	2	7%	10	36%	7	25%	7	25%	1	4%	28	100
Regional city	C														
Regional city	P	2	3%	9	13%	33	49%	13	19%	10	15%		0	67	100
Greater city	C														
Greater city	P	12	15%	24	30%	33	41%	5	6%	6	8%			80	100
Local city	C														
Local city	P	12	22%	27	49%	12	22%	3	5%	1	2%			55	100
Central market town	C														
Central market town	P	20	71%	8	29%		0		0		0			28	100
Total		47	17%	72	26%	91	33%	31	11%	30	11%	9	3%	280	100%

^a In analyses of span of control within prefectural-level units, the core-periphery distribution of all capitals within the prefecture is taken into account in assigning the prefecture to either the core or periphery:

Pct. of county-level units in core	Prefectural-level capital in core or periphery?	Classification of prefectural-level unit
51-100	C	C
	P	C
30-50	C	C
	P	P
-29	C	P
	P	P

^b I.e., the number of county-level units subordinate to the prefectural-level yamen in the capital in question.

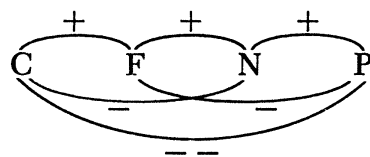
Although this factor is helpful in understanding the feasibility of the arrangements indicated by Table 10, it does not speak to their underlying rationale. My argument, to be developed below, is that the critical factors were fiscal strategy and defense policy. A broad span of control and the standard administrative arrangement of counties in prefectures appear to have been optimal for revenue collection in the hinterlands of cities with high economic centrality, whereas a narrow span of control and the peculiar administrative arrangement of *chou* and *t'ing* appear to have been optimal for defense and security, which were particularly salient in regional peripheries.

Post designations. Support for this line of interpretation may be drawn from an important feature of Ch'ing field administration not yet introduced. The superior bureaucratic post in every county- and prefectural-level yamen was officially characterized according to the presence or absence of four stereotyped attributes.* These post designations, as I shall refer to them, consisted of the various combinations of four binary variables, each indicated by the presence or absence of a Chinese character. Altogether there were sixteen possible designations, one consisting of all four characters, four consisting of combinations of three characters, six consisting of combinations of two characters, four consisting of a single character, and one without any characters. The four elements of these post designations may be briefly described as follows. *Fan* ("troublesome, abundant") was conventionally taken to signify a great deal of official business at the yamen in question. *Ch'ung* ("thoroughfare, frequented") was held to indicate a center of communications; more closely than any of the other three characters, it indicated a capital's commercial importance. *Nan* ("difficult, vexatious") purportedly referred to a post that had to cope with an unruly, crime-prone populace. *P'i* ("fatiguing, wearisome") referred to the difficulty of collecting taxes.²⁹

The sixteen possible post designations were assigned with quite different frequencies. Capitals boasting a four-character post were fairly rare, numbering only 59 altogether; they were strongly concentrated (59 percent) in regional cores. By contrast, capitals with a no-character designation were the most numerous (424 altogether) and were poorly represented in regional cores (only 30 percent). For the rest, the four characters occurred in post designations as follows: *nan* (hereafter N), "insecure locale," 697; *fan* (hereafter F), "busy yamen," 637; *ch'ung* (hereafter C), "trade center," 526; and *p'i* (hereafter P), "unremunera-

* The posts of circuit intendants were similarly designated, but post designations at the circuit level are excluded from the present analysis.

tive post," 258. A frequency analysis of the two- and three-character designations reveals patterning that may be diagrammed as follows:



When arranged in this sequence, the affinity of any character for another is a function of proximity. Each has a positive affinity only for its immediate neighbor(s), and C and P constitute the least compatible pair.

The internal logic of this symbolic system is fairly straightforward. That C and P should be incompatible makes eminent sense if—as my previous analysis suggests is reasonable—we assume that an important transport node-cum-trade center was likely to be the center of an extensive high-level trading system. A yamen situated in such an economic central place would hardly be expected to experience revenue problems or to be considered an unremunerative post. As shown in Table 11, CP was by far the least common of the six character pairs, and the two three-character designations containing both C and P were rare indeed by comparison with the other two combinations. The lesser incompatibilities of C with N and of F with P become more readily understandable if the connotation of F is expanded slightly to include the idea of a politically sensitive or important post. If a city was important as a trade center and hence as a source of revenue (C), *and* located in an area with problems of security or social control (N), then its yamen was almost by definition a politically sensitive post, so that one would ex-

TABLE 11. FREQUENCIES OF TWO- AND THREE-CHARACTER POST DESIGNATIONS AND THEIR DISTRIBUTION AMONG CAPITALS IN REGIONAL CORES AND PERIPHERIES

Character designations		Actual	Expected	Ratio	Cores		Peripheries	Total
					No.	Pct.		
CFN	FNP	280	196	143↑	173	62%↑	107	280
CFP	CNP	22	106	21↓	8	36↓	14	22
Total		302	302		181	60%	121	302
CF	FN	357	275	130↑	181	51%↑	176	357
CN	FP	85	144	59↓	33	39↓	52	85
CP		12	35	34↓	3	25↓	9	12
Total		454	454		217	48%	237	454

pect C plus N to occur only rarely without F. Hence the underoccurrence of CN and the overoccurrence of CFN. As for the combination of F with P, since the latter character implies a post that was unimportant as a source of revenue, what else (within the limits of the scheme) could be the cause of a post's heavy work load and political sensitivity if not activities related to defense and/or local security? Thus F plus P should occur only rarely without N.

Simply taking the three-character designations at their face value, one would expect CFN, rather than FNP, to have been assigned to capitals whose political importance rested heavily on high revenue potential and the problems of controlling transient traders and a large merchant population. In fact, on my analysis, nearly half of the CFN posts were in greater cities or higher-level economic central places as against less than a third of the FNP posts. Taking the two-character posts at face value, one would expect CF and FN to have been assigned to capitals that were less important overall than CFN or FNP capitals but more important overall than NP capitals, and one would further expect that a comparison of CF and FN cities would show the former to have had greater economic centrality. In general, these expectations are borne out by tabulations of cities with the post designations in question. CFN and FNP designations were overrepresented among cities that ranked high in both the economic and the administrative hierarchies, CF was overrepresented among cities whose economic level was higher than their administrative rank, FN was overrepresented among cities whose administrative rank was higher than their economic level, and NP was overrepresented among cities that ranked low in both hierarchies.³⁰

Table 11 also makes the interesting point that the uncommon, internally inconsistent post designations were seldom assigned to cities in regional cores. I attribute the concentration of anomalous post designations in peripheral areas (1) to the irregularities that, as we have already noted, were frequently encountered around the periphery of regional central-place systems, and (2) to the greater diversity of administrative problems posed by peripheral as against core cities.

The system of post designations was rather less straightforward (and more informative) than the above description suggests because it was also designed to serve as a general importance rating. The importance of posts was held to be indicated by the number of characters in their designation. The official importance rating (four categories ranging from very to least important) was printed in the *Chin-shen ch'üan-shu* directly adjacent to the CFNP post designations, and among bureaucrats assignments were known colloquially as "four-character posts," "three-

character posts,” etc. Nothing in the Chinese or the Western literature suggests that the importance rating was anything other than a direct translation of the number of characters, but in fact I found that for 170 posts (11 percent of the total) the assigned importance rating was higher than indicated by the post designation. It was as though each such post designation included an unspecified or invisible character that served to raise its importance rating. I have dubbed this invisible character the “secret” strategic component on the grounds that everything about the geographical location of the posts so designated and their administrative characteristics suggests that it flagged capitals strategically situated for the defense of regional cores and their principal cities.

Before pursuing this lead for what it can tell us about the defense functions of late imperial cities, let us briefly consider its implications for the system of post designations. That the military component of local administration should be indicated by an invisible code is, after all, not particularly surprising in a sophisticated bureaucracy that was dominated by Confucian values (which exalted normative over coercive power) and that subordinated specialized military officials in both form and symbol to their civil counterparts. But if the coding were to have validity, it would obviously have been necessary to bring the designations of nonstrategic posts into perfect agreement with their importance rating. I suggest that the usual procedure in such cases was to add or subtract P as necessary to bring the designation into alignment with the rating. P was unquestionably the most protean of the four characters. In some contexts it was a foil for C, indicating the unremunerative nature of the post. In other contexts, it was a foil for F, indicating a low-pressure post of no particular political importance or sensitivity. Clearly it had neither connotation when used with all three other characters, for CFNP was the designation of the most important capitals in the realm, e.g., Peking, Soochow, Nanking, Canton, Sian, Chengtu, and Kunming. CFNP cities were themselves military prizes and often the centers of military command, to be sharply differentiated from cities whose significance stemmed from a strategic site on a single approach to the center of a macroregion. Thus, it appears that P also functioned as a foil for the secret strategic component of post designations. When necessary to up the importance rating of a “nonstrategic” city beyond the number of characters yielded by the appropriate assignment of C, F, and N, the character P was added, thereby salvaging the significance of the secret component.

Defense. We are now in a position to muster all relevant evidence concerning the distribution within regions of capitals with a significant

TABLE 12. THE "SECRET" STRATEGIC POST
DESIGNATION IN RELATION TO CHARACTER DESIGNATIONS, 1893
(All Capitals Except Those Whose Designations Included
All or None of the Four Characters)

Character designations	"Deficit" of designation characters?			Total
	No	Yes		
		No.	Pct.	
FN	97	39	29% ↑	136
F	46	6	12	52
N	112	13	10	125
F and/or N with C or P	547	38	7	585
F or N with C and P	21	1	5	22
P	22	1	4	23
CP	12	0	0	12
C	111	0	0	111
Total	968	98	9%	1,066 ^a

^a By definition, capitals (59 in all) with the FCNP designation cannot show a deficit of designation characters. Of the 424 capitals with a no-character designation, 17 percent show a "deficit." Reconciliation: $59 + 1066 + 424 = 1549$, the total number of capitals.

defense function. We may begin by scrutinizing the character portion of post designations that included the "secret" strategic component. As shown in Table 12, the latter occurred most frequently with FN, the combination whose face value pointed to politically sensitive security problems, and least frequently, which is to say not at all or only very rarely, with CP, C, and P, components unrelated to, or even negating, the notion of strategic importance. These findings and the logic of the intermediate gradations provide circumstantial support for the interpretation offered here for a deficit of designation characters. A mapping of the cities in question offers still firmer support. With few exceptions, cities whose post designations included the "secret" component were sited at the approaches to strategic passes, in mountainous areas subject to attack by non-Han peoples, on roads breaching a regional frontier, on islands or rivers commanding the approach to seaports or major inland waterways, at strategic sites along major rivers, and on roads approaching high-level capitals.

On the assumption that strategically important cities would be distributed in accordance with the strategic significance of different types of frontiers, I classified all administrative cities into seven categories according to whether the county-level units of which they were the capital lay on or near external or internal frontiers. The external categories were three: (1) China's international borders to the south and south-

TABLE 13. THE "SECRET" STRATEGIC POST DESIGNATION IN RELATION TO THE FRONTIER SITUATION OF CAPITAL CITIES, 1893

Location of capitals in relation to frontiers	“Deficit” of designation characters?			Total
	No	Yes		
		No.	Pct.	
External frontiers				
1. South and southwest	15	23	60.5%	38
2. Inner Asian	68	21	23.6	89
3. Maritime	182	24	11.7	206
Internal frontiers				
4. Regional only	94	12	11.3	106
5 + 6. Provincial ^c	672	72	9.7	744
Removed from any frontier	348	18	4.9	366
Total	1,379	170	11.0%	1,549

^a Two categories are here combined, capitals situated near provincial boundaries but not regional frontiers and capitals situated near both, there being no difference between them in the proportion of "secret" post designations.

west; (2) the Inner Asian regional frontiers, that is, those regional boundaries of Yun-Kwei, the Upper Yangtze, Northwest China, and North China that abutted on Inner Asian territories rather than other regions of agrarian China; and (3) the coastal or maritime frontier. Internal frontiers were classified as (4) regional only (that is, lying on the boundaries of my physiographic regions but not on provincial boundaries); (5) both regional and provincial; and (6) provincial only. The seventh category included county-level units removed from frontiers of any kind. Table 13 shows the distribution according to this scheme of cities with the "secret" strategic post designation. The heavy use of the "secret" component for cities along the empire's more sensitive frontiers is telling, as is its negligible use for posts removed from any frontier.

Table 14 displays span of control in relation to the same categorization of frontiers. It is notable that apart from maritime frontiers (of which more below), the distribution of narrow control spans closely parallels that of the "secret" strategic component. These data strongly support the notion that a narrow span of control was held to be advantageous in the case of militarily vulnerable capitals.

Finally, let us contrast the different types of capitals. With respect to the telltale deficit of characters in post designations, the differences were stark. The "secret" strategic component was present in the post designations of 75 percent of ordinary *t'ing* capitals and 65 percent of autonomous *t'ing* capitals (the difference reflecting not the lesser strategic

TABLE 14. SPAN OF CONTROL IN RELATION TO THE FRONTIER SITUATION OF CAPITAL CITIES, 1893

Location of capitals in relation to frontiers	Span of control						Total	
	1-5		6-8		9+			
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
1. South and SW inter- national frontiers	27	71% ↑	11	29%		0%	38	100%
2. Inner Asian frontiers	44	49	27	30	19	21	90	100
4. Internal frontiers: Regional only	44	41	38	35	26	24	108	100
5. Internal frontiers: Reg. and prov.	167	36	176	38	116	25	459	100
6. Internal frontiers: Provincial only	89	31	88	30	114	39	291	100
3. Maritime frontiers	35	16	83	38	101	46	219	100
7. Removed from any frontier	60	16	134	36	177	48 ↓	371	100
Total	466	29%	557	35%	553	35%	1,576	100%

importance of the latter but rather their greater general importance, whence post designations with more characters on the average). The corresponding figures for capitals of prefectures and of *chou*, both autonomous and ordinary, clustered around 17 percent. As for ordinary *hsien*, whether in prefectures or autonomous *chou*, the incidence of the "secret" component was less than 4 percent; for provincial and higher-level capitals it was nil. We may also discern a distinct tendency toward spatial specialization in the defense function. At the borders of the empire—the international boundaries to the south and southwest, the Inner Asian frontier, and the seacoast—the main burden of defense was carried by the capitals of autonomous and ordinary *t'ing*. As for internal frontiers, the major burden was borne by ordinary *t'ing* capitals along regional frontiers that were distinct from provincial boundaries; by *chou* capitals along regional frontiers that coincided with provincial boundaries; and by both autonomous and ordinary *chou* capitals along provincial boundaries within regions. In the areas away from any frontier, the defense function devolved largely on ordinary *chou* capitals.³¹ From the perspective of the major cities at the heart of regional cores, then, the first and second lines of defense were associated primarily with the capitals of ordinary and autonomous *chou*, respectively, whereas more distant defense perimeters were marked largely by *t'ing* capitals. It will be recalled that of these four types of capitals (all characterized

by relatively narrow control spans), the narrowest spans were associated with autonomous *t'ing*, concentrated at the outermost periphery, and the broadest with ordinary *chou*, concentrated at the innermost defense perimeter. It is scarcely necessary to add that when the "secret" component was used for prefectural-level capitals other than those of autonomous *t'ing*, it was heavily concentrated among units with exceptionally narrow spans of control.

The thrust of my first argument should by now be apparent. A narrow span of control, entailing as it does close supervision and minimal competition for channels of communications, was highly desirable for centers vulnerable to military invasions, uprisings, or other violent disruptions. In military terms the odd arrangement of the autonomous *t'ing* was ideal, for the subprefect in charge of the strategically important town reported directly to a military circuit intendant or to provincial-level officials rather than indirectly through a prefectural-level yamen. The peculiar administrative arrangement of the *pen-chou* also made military sense in that the *chou* city itself (as opposed to the entire area of the autonomous *chou*) was normally the strategic prize; direct control of the *pen-chou* by the prefectural-level official had the effect of putting the man in charge of the *chou* city's defense under the direct command of high-level military officers. The fewer the counties supervised by the magistrate of an autonomous *chou*, the less distraction there would be in times of military emergency. Similarly, the narrower the span of a prefecture to which an ordinary *chou* or *t'ing* belonged, the less disruptive it would be in times of crisis to monopolize the communication channels from the prefect to higher-level authorities with orders and reports relating to the emergency.

It is notable that all autonomous *chou* and *t'ing* (but not all prefectures) fell into the category of administrative units whose ranking posts were filled through nomination by the governor or governor-general from among acting or probationary officials under his own control. Such appointments were restricted by statute to men with at least three years of prior experience.³² As a result, the official in supreme command of a province could be certain that subordinates in the most strategic of local posts would be experienced officials who had earned his confidence. Moreover, unlike *hsien* posts, most of which were available for a first appointment, all ordinary *chou* and *t'ing* posts, whether controlled by the Board of Civil Office or by the governor, could be filled only by men with previous administrative experience.³³

This analysis calls into question Brunnert and Hagelstrom's contention that autonomous *chou* and *t'ing* should be viewed as traditional forms

eventuating in prefectural status. It is true that the capitals of ordinary *chou* were normally selected as the capitals of newly formed autonomous *chou*, but not more than twenty autonomous *chou* were ever converted to prefectures, and against these must be set an even greater number of contravening changes. The history of Ch'ing field administration provides no support whatsoever for a developmental sequence from ordinary *t'ing* to autonomous *t'ing* to prefecture. One response to the growing threat of British power off the Chekiang coast in the 1840's was to change the status from *hsien* to *t'ing* of Ting-hai, an administrative unit encompassing the archipelago that commanded the approach to Ningpo and Hangchow.

A certain congruence may be noted between the defense function of many frontier cities and the special character of other administrative functions in the more remote portions of regional peripheries. It was along China's regional frontiers that local society assumed its most heterodox and variegated guise: there one found tribes of non-Han aborigines and pockets of incompletely sinicized groups; autonomous kongsis pursuing illicit productive activities beyond the reach of the law and of tax collectors; heterodox sodalities ranging from religious sects to seditious secret societies; and bands of bandits, many imbued with romantic-rebel ideologies.³⁴ The populace at large included disproportionate numbers of smugglers, outcasts, political exiles, sorcerers, and other deviants. In dealing with such elements, normative strategies of administration were largely ineffective, and frontier administrators necessarily relied on repression, containment, and divide-and-rule strategies. Thus the military posture and coercive power needed for defense around the rim of regional peripheries were also appropriate to the other objectives of field administration in such areas—the maintenance of social order and the prevention of local concentrations of power that might pose a threat to imperial control.

Revenue collection. Let me now turn to fiscal strategy. We start with the proposition that revenue collection, both of land tax and of commercial levies, was most efficient (in the sense of greater tax take per unit of administrative effort) in regional cores, particularly in the environs of cities high in the economic hierarchy. Among the myriad reasons are the high levels of productivity and per capita income, the high density of taxable units (households, farms, business firms, periodic markets, etc.) per unit of area, the comparatively strong leadership of local social systems, and a local populace with relatively firm community roots and relatively high aspirations. In general, the efficiency of tax collection may be seen to decline as one moves outward from the center toward the periphery of the economic region and downward through

the hierarchy of trading and marketing systems.³⁵ The continuum in question may be conceptualized as in the row labels of Table 10. Somewhere along this continuum, a break-even point was reached where the tax take was barely covered by the costs of collecting it, and below that point county-level units were dependent for part of their operational budget on subsidies from higher-level yamens.³⁶

It is widely recognized that provincial governments, and above all the imperial government, looked to a limited number of populous, commercialized, and relatively rich areas for the great bulk of their revenue. My point here is that these areas may be specified with some precision in terms of (1) the relative urbanization of the eight great regional economies (with the Lower Yangtze at the head of the list and Yun-Kwei at the tail), and (2) position within each of these regional economic systems as specified in Table 10.

The strategy followed, or so I infer, was to extend the area under the jurisdiction of key tax yamens (i.e., those in high-level capitals that were at once regional cities and metropolises in the economic hierarchy) so as to include within their boundaries as much as feasible of the high-revenue areas, and to concentrate in this small number of supervisory posts the ablest and most trustworthy personnel in the imperial bureaucracy.³⁷ Thus, the optimal administrative arrangement for areas of highest revenue potential was very nearly the reverse of that for areas of greatest strategic importance. In the latter, it was desirable to make both county-level and prefectural-level units as small as possible, the former in terms of area and the latter in terms of component units. In areas of highest revenue potential, by contrast, it was desirable to make both county-level and prefectural-level units as large as possible, the former in terms of population and the latter in terms of component units.

I wish now to show that the gradation of capitals by revenue potential was precisely indicated by the system of post designations already described. I begin by establishing the significance of these designations for city population size. As demonstrated in Table 15, F tended to be assigned to the most populous cities (which makes sense if one assumes volume of official business to be a function of urban population),³⁸ and P to the least populous cities (which also makes intuitive sense on the assumption that relatively small capitals were disproportionately located in sparsely populated counties with poor transport where tax returns were likely to be low in proportion to bureaucratic effort). C and N were intermediate with respect to city population, but on the average C was assigned to more populous cities than was N. Table 15 also makes it clear that the *number* of characters in the post designation was positively associated with city population.

TABLE 15. POST DESIGNATIONS IN RELATION TO CITY SIZE OF THE CAPITALS INVOLVED, 1893^a

A. Cities whose yamen posts received 3- and 4-character designations

	Population classes							
	Over 16,000		4,000–16,000		Under 4,000		Total	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
FCNP	37	63%↑	18	31%↓	4	7%↓	59	100%
FCN	61	37	92	56	12	7	165	100
FNP CNP FCP	21	15	67	49	48	35	136	100
Total	119	33%	177	49%	64	18%	360	100%

B. Cities whose yamen posts received 2-character designations^b

	Population classes							
	Over 8,000		2,000–8,000		Under 2,000		Total	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
FC FN FP	86	29%↑	197	67%↑	11	4%↓	294	100%
CF CN CP	53	23	150	66	26	11	229	100
NF NC NP	60	21	184	65	39	14	283	100
PF PC PN	11	11	57	57	32	32	100	100
Total number of characters	(210)		(588)		(108)		(906)	
Total number of capitals	105	23%	294	65%	54	12%	453	100%

C. Cities whose yamen posts received single-character designations

	Population classes							
	Over 4,000		2,000–4,000		1,000–2,000		Under 1,000	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
F	23	45%↑	23	45%↑	6	10%↓		0%
C	29	26	36	32	40	36	6	5
N	19	15	29	23	54	43	23	18
P	2	9	5	22	9	39	7	30
Total	73	24%	93	30%	109	35%	36	12%

^a For purposes of this table, the following multiple-nuclei conurbations are counted as single cities and classified according to the population of the whole. First we have Wuhan, Kuei-sui, and Chungking (together with its satellite Chiang-pei), even though each contains two capitals. Second are the two anomalous cases of Hui-chou-fu (Kwangtung) and Feng-yang-fu (Anhwei), each with a separate walled city in which the yamen of the metropolitan county was located. Third are three twin cities involving one capital and one nonadministrative center: Lao-ho-k'ou and Kuang-hua, a *hsien* capital (Hupei); Fan-ch'eng and Hsiang-yang-fu (Hupei); and Ch'ing-chiang-p'u and Ch'ing-ho, a *hsien* capital (Kiangsu). The 422 capitals with no-character designations, not shown, have a size distribution between that of N-designated cities and P-designated cities. Reconciliation: 360 + 453 + 311 + 422 = 1546, the number of cities involving capitals.

^b Each city covered by Subtable B appears twice, i.e., in the rows for each of its designation characters. FC posts are, of course, the same as CF posts, and so forth; the order of each pair is reversed so as to point up the significance of the groupings in each row.

The pecking order established by the population significance of the four components establishes a rank-order of the sixteen designations. On the basis of their correlations with several other urban variables, three significant “breaks” were established in this series, yielding four groupings here designated High (FCNP and FCN), Medium (FCP, FNP, CNP, FC, and FN), Low (FP, CN, CP, NP, F, C, N, and P), and No-character.³⁹ When post designations, so grouped, are cross-tabulated with the level and type of capital city, as in Table 16, it is apparent that, apart from the two types of *t'ing*, the rank-order of post designations closely parallels the official ordering of capital types. (The “exceptionally” high frequency of Medium post designations for autonomous and ordinary *t'ing* results, as we might expect, entirely from an excess of the FN designations that signaled their strategic importance.)

If my overall argument is correct, rank-ordered post designations should have indexed not only the population and the ranking of capitals but also span of control. Table 17 demonstrates that they did just that for prefectural-level capitals. The remarkable fact is that rank-ordered post designations served to differentiate prefectural capitals and the capitals of autonomous *chou* into three grades each, so related that the bottom grade of prefectural capitals was still distinguished from the top grade of *chou* capitals. The net result was that, in conjunction with type of capital, post designations marked out eight graded types of prefectural-level capitals, the entire series being correlated with the span of control.

It remains to show that rank-ordered post designations in fact differentiated cities according not only to span of control but also to the position of capitals in regional economic systems. We have already observed (see Table 10) the pervasive tendency to match the size of prefectural-level units (i.e., the number of component county-level units) to the revenue potential of the economic system centered on the prefectural-level capital. Table 18 is designed to test the proposition that the post designations of prefectural-level capitals varied according to all the factors built into Table 10—that is, according to a complex calculus that took into account the city's level in the economic hierarchy, its location in the regional core-periphery structure, and the span of control of the administrative unit of which it was the capital. The grid of the upper diagram recapitulates the structure of Table 10, and the data in tabulations A and B relate to the five diagonal groupings of cells defined on that grid. Diagonal 1 includes prefectural-level capitals that ranked at the top of the hierarchy of economic central places, that were centrally located in their regional economies, and whose administrative jurisdiction encompassed an extraordinarily large number of counties with

TABLE 16. POST DESIGNATIONS IN RELATION TO LEVEL AND TYPE OF ADMINISTRATIVE CENTER, ALL CAPITAL CITIES, 1893

Capitals of	Post designations ^a							
	High		Medium		Low		No-character	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Provinces, etc.	20	100%		0%		0%		0%
Circuits ^b	38	63	17	28	2	3	3	5
Prefectures	51	46	40	36	19	17		0
Autonomous <i>chou</i> ^c	17	24	36	51	8	11	9	13
Ordinary <i>chou</i>	16	12	40	30	53	39	26	19
<i>Hsien</i> in prefectures	71	8	224	25	323	37	265	30
<i>Hsien</i> in autonomous <i>chou</i>	7	4	39	21	71	39	67	36
Autonomous <i>t'ing</i> ^d	2	7	10	33	4	13	14	47
Ordinary <i>t'ing</i>	3	5	11	19	3	5	40	70
Total	225	15%	417	27%	483	31%	424	27%
							1,549	100%

^a This classification of the sixteen possible post designations is based on a generalized pecking order, established empirically, of F, C, N, P. High includes FCNP and FCN. Medium includes FCP, FNP, CNP, FC, and FN. Low includes the other eight character designations.

^b Capitals of provinces and governor-generalships that are also circuit capitals are not included. The total includes 40 capitals of prefectures,

six of autonomous *chou*, two of autonomous *t'ing*, two of sectors in the imperial prefecture, two of ordinary *chou*, five of *hsien*, and three of ordinary *t'ing*.

^c Includes capitals of the two autonomous *t'ing* and six prefectures that were structurally analogous to autonomous *chou*.

^d Includes the four prefectures with only a single component *hsien*.

TABLE 17. SPAN OF CONTROL BY TYPE OF ADMINISTRATIVE CENTER AND BY POST DESIGNATIONS, 1893
(*Prefectural and Higher-level Capitals Only*)

Capitals of	Post designations ^b	Span of control ^a												Total	
		1		2-3		4		5-8		9-10		11-13		14+	
		No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Provinces, etc. Prefectures ^c	High				0%		0%	5	25%	4	20%	4	20%	7	35%
	High	2	2	5	6	51	62	15	18	15	18	7	9	2	2
	Medium	5	10	7	14	30	60	5	10	5	10	3	6	0	0
	Low	3	15	8	40	8	40	1	4	1	4	0	0	0	0
Autonomous <i>chou</i> ^d	High	9	43	6	29	6	29	6	29	6	29	6	29	6	29
	Medium	18	47	10	26	10	26	10	26	10	26	10	26	10	26
	Low	0%	0	4	24	3	18	3	18	3	18	3	18	3	18
Autonomous <i>t'ing</i> ^e	—	32	100	0	0	0	0	0	0	0	0	0	0	0	0
Total		32	11%	47	17%	40	14%	113	40%	25	9%	14	5%	9	3%

^a I.e., the number of county-level units supervised by a given prefectural-

level yamen.

^b The few No-character designations are grouped here with Low designations.

^c Includes the two sectoral capitals in the imperial prefecture that served as circuit capitals.

^d Includes capitals of the two autonomous *t'ing* and six prefectures that were structurally analogous to autonomous *chou*.

^e Includes capitals of the four prefectures containing only a single *hsien*.

TABLE 18. POST DESIGNATIONS IN RELATION TO LEVEL IN THE ECONOMIC HIERARCHY, LOCATION IN REGIONAL CORES OR PERIPHERIES, AND SPAN OF CONTROL, PREFECTURAL-LEVEL CAPITALS ONLY, 1893

Definition of "diagonal classes" simultaneously indicating level in the economic hierarchy, location in regional cores or peripheries, and span of control														
Level in the economic hierarchy	Regional cores (C) or peripheries (P) ^a	Span of control ^b											Total	
		1	2	3	4	5	6	7	8	9-10	11-13	14+		
Central metropolis	C													5
Regional metropolis	C										1			17
Regional metropolis	P													28
Regional city	C									2				67
Regional city	P													80
Greater city	C													55
Greater city	P													28
Local city	C							3						28
Local city	P													28
Central market town	C													28
Central market town	P													28
Total		32	15	32	40	31	31	29	22	25	14	9		280

Definition of "diagonal classes" simultaneously indicating level in the economic hierarchy, location in regional cores or peripheries, and span of control

Table 18, continued

A. Post designations classed in terms of High, Medium, Low, and No-character

Diagonal class	Post designation ^e						Total	
	High		Medium		Low and no-character			
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
1	32	100%		0%			32	100%
2	27	64	15	36		0%	42	100
3	45	51	32	36	11	13	88	100
4	20	24	41	48	24	28	85	100
5	1	3	11	33	21	64	33	100
Total	125	45%	99	35%	56	20%	280	100%

^a In analyses of span of control within prefectural-level units, the core-periphery distribution of all capitals within the prefecture is taken into account in assigning the prefecture to either the core or periphery. See Table 10 for operational definitions.

^b I.e., the number of county-level units supervised by a given prefectural-level yamen.

B. Post designations classed in terms of C and F components

Diagonal class	Post designation ^d								Total	
	C and F ^e		C or F		Neither C nor F					
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
1	32	100%	↑		0%		↓		32	100%
2	34	81	8		19		0%		42	100
3	55	63	31		35		2		88	100
4	37	44	33		39		15		85	100
5	3	9	14		42		16		33	100
Total	161	58%	86		31%		33		280	100%

^c For the classification of post designations into High, Medium, and Low, see Table 16.

^d C stands for *ch'ung*, F for *fan*.

^e Includes three cases in which the post designation of the prefectural yamen shows one character and that of the county yamen the other.

above-average populations. In all these respects, successive diagonals 2, 3, and 4 grade cities from that extreme to its opposite, diagonal 5, which includes capitals that ranked exceptionally low in the economic hierarchy, were situated peripherally with respect to their regional economies, and whose jurisdiction encompassed at most three sparsely populated county-level units.

Tabulation A of Table 18 shows that post designations did indeed closely reflect the factors encompassed in the definition of the diagonals. Note in particular that every one of the 32 cities in diagonal 1 had a high post designation. (It is not unlikely that in the late nineteenth century the 31 prefectures and one autonomous *chou* involved supplied nearly half of all revenues received at Peking.) Tabulation B indicates the particular diagnostic value of the F and C components of the post designations. Finally, the data presented in Table 19 show that at *all* levels of the administrative hierarchy, and in regional peripheries as well as cores, the post designation of a capital closely reflected its place in the hierarchy of economic central places.

One beauty of the post designations was their value for posting officials of varying competence, experience, and trustworthiness in accordance with the posts' importance for sustaining the flow of imperial revenues. Positions in the field administration were filled either through direct appointment by the Board of Civil Office in Peking or through nomination by the governor (or governor-general), subject to the Board's approval. Whereas the Board's appointments could be made from the pool of expectant officials who had never before served in office, the governor's nominations were by statute limited to men who had served under him for a minimum of three years (five in certain categories). Posts classified as "most important" or "important" (that is, all three- and four-character posts plus others containing the "secret" strategic component) were controlled by the province,⁴⁰ thereby establishing a floor of experience and trustworthiness for the most critical assignments. For all incumbents, no matter how appointed, there were elaborate procedures for the periodic evaluation of performance. Post assignments, as well as promotion or demotion within the bureaucratic ranks, depended on the results. In the triennial "great reckoning" (*ta-chi*), which assessed the achievements of each local official, "by far the most important criterion was his ability to collect taxes. Thus a magistrate was not eligible for recommendation if he had been unable to collect the land tax according to the quota."⁴¹ The data presented in Tables 18 and 19 imply that so long as bureaucratic "promotions" involved transfers to posts with higher designations (e.g., from No-character to

TABLE 19. THE RELATIONSHIP BETWEEN THE POST DESIGNATION OF CAPITALS AND THEIR LEVEL IN THE ECONOMIC HIERARCHY, 1893
(Showing Tabulations Separately for High-level as Against Low-level Capitals and for Regional Cores as Against Regional Peripheries)

	HIGH-LEVEL CAPITALS/REGIONAL CORES										HIGH-LEVEL CAPITALS/REGIONAL PERIPHERIES									
	Post designations										Post designations									
	High		Medium		Low and no-char.		Total				High		Medium		Low and no-char.		Total			
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.			No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.		
Regional cities & higher	43	81%	9	17%	1	2%	53	100%			14	74%	3	16%	2	11%	19	100%		
Greater cities	24	50	19	40	5	10	48	100			18	37	24	49	7	14	49	100		
Local cities	12	39	14	45	5	16	31	100			13	30	21	48	10	23	44	100		
CMT's		0		0	3	100	3	100			1	8	3	25	8	67	12	100		
Total	79	59%	42	31%	14	10%	135	100%			46	37%	51	41%	27	22%	124	100%		

	LOW-LEVEL CAPITALS/REGIONAL CORES										LOW-LEVEL CAPITALS/REGIONAL PERIPHERIES									
	Post designations										Post designations									
	High		Medium		Low and no-char.		Total				High		Medium		Low and no-char.		Total			
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.			No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.		
Greater cities & higher	16	30%	24	45%	9	17%	49	100%			9	22%	16	39%	4	10%	29	100%		
Local cities	48	18	101	39	79	30	262	100			15	6	73	32	91	39	231	100		
CMT's	6	2	49	19	114	44	258	100			5	2	60	19	132	41	322	100		
IMT's & SMT's		0		0	12	30	40	100				0	1	1	13	16	80	100		
Total	70	11%	174	28%	214	35%	613	100%			29	4%	150	22%	240	36%	674	100%		

C, from FP to FC, or from CNP to FCN), they were likely to entail a step up the economic central-place hierarchy and/or a move to a city whose prefectural-level unit had a broader span of control—i.e., to a post of greater fiscal importance.

Special cases. It is, of course, an oversimplification to portray the administrative salience of security as everywhere inversely related to the administrative salience of revenue. We have already pointed to a possible departure from this generalization in the case of cities along China's maritime frontiers. The incidence of the "secret" component of post designations (Table 13) suggests that the proportion of cities with an important defense function was somewhat higher along the coast than near internal frontiers; the distribution of control spans (Table 14) suggests that the same was true of cities important for revenue. This anomaly resulted from the fact that the maritime "frontiers" of several regional cores lacked the peripheral zone that everywhere buffered cores along their internal regional frontiers. The critical question concerns the extent to which the two functions were conjoined in the same coastal cities. Many seaports in core areas were indeed the nodes of high-revenue trading systems, whence the high incidence of broad control spans along the maritime frontier as a whole. However, prior to the rise of ocean ports in the late nineteenth century, the typical pattern was for important seaports to be sited upriver from the immediate coastline, with their seaward approaches being guarded by fortresses or smaller defense-oriented capitals. Canton, Foochow, Ningpo, and Tientsin are classic cases.* Nonetheless, by its very nature, the maritime frontier did have an exceptionally high proportion of cities for which commerce and defense were both important. A prominent example was Amoy, a deepwater port located on an offshore island and hence highly vulnerable to attack. Not surprisingly, its administrative status was that of a *t'ing* capital and its post designation included the "secret" strategic component. At the same time, it was the most important commercial city in its highly commercialized subregion and ranked as a regional city in the economic hierarchy.

Significantly enough, Amoy was also a circuit capital, a fact that points us toward resolution of the anomalies surrounding circuits in the Ch'ing field administration. After its recapture from Koxinga, Amoy was seen by the Ch'ing as essentially a military outpost, and in the 1680's

* On the map of the Ningpo area at p. 402, note the location of Chen-hai, a county capital with the "secret" strategic component in its post designation, in relation to Ningpo. The map also shows three fortresses (Kuan-hai-wei, Lung-shan, and Ta-sung-so) built in early Ming times for purposes of maritime defense.

it was incorporated into the administrative system as an ordinary *t'ing*. Meanwhile, the unwonted security brought to the Taiwan Strait by the Ch'ing after their annexation of Taiwan enabled Amoy, despite its vulnerability, to thrive as never before, taking full advantage of its excellent harbor. In 1727, by which time Ch'üan-chou-fu had lost the bulk of its maritime trade to Amoy, the circuit yamen was moved to the *t'ing* capital.⁴² From a garrison town, Amoy had developed into a city from which the defense and trade of the entire subregion could be controlled and coordinated.

It was the special character of the circuit intendant's role that caused the court to favor as capitals cities, like Amoy, that were strategically situated for both defense and trade. We noted above that the intendant was responsible for dealing with foreigners who penetrated his circuit, and it may be added here that he normally also served as the superintendent of customs.⁴³ As a preliminary formulation, then, we might say that the circuit intendant's primary mission was the conduct of "local" foreign relations—trade, diplomacy, and war—and that his local administrative role concerned the coordination and control of activities within the circuit only insofar as they affected these larger concerns of the court. The departures from a regular administrative chain of command to which I earlier called attention make sense in these terms. Of the four high-level capitals that lacked circuit yamens, Peking, the imperial capital, and Canton, the open port to which the Ch'ing directed foreigners from overseas, both had specialized alternative institutions for handling foreign relations. Hangchow and Soochow, the other two capitals involved, provide examples of "forward" siting, whereby circuit yamens were situated within their territories off-center in the direction of foreign pressure. The circuit in which Hangchow fell was headquartered in Chia-hsing-fu to the northeast, whereas the eastern approach to Hangchow Bay was under the supervision of the circuit intendant at Ningpo. Soochow had been the capital of Su-Sung-T'ai circuit until 1730, when the yamen was transferred to Shanghai,⁴⁴ a growing but much smaller city that had, however, come to dominate the Lower Yangtze's coastal trade with both northern and southern ports and that had emerged as the focal link between these two branches of the coastal trade and the commercial network of the Lower and Middle Yangtze regions.

The other kind of administrative anomaly—circuit yamens located in cities that were not even prefectural-level capitals—may also be attributed to the court's overriding concern to locate intendants in whatever city within the circuit was most strategically situated for their mission. The pragmatic responsiveness to external developments that caused

circuits to be established during the eighteenth century in Amoy and Shanghai, both county-level capitals, was no less evident during the subsequent era of Western encroachment. In 1861, the court transferred the yamen of Han-Huang-Te circuit (Hupeh) from Huang-chou-fu to Hankow, the commercially dominant nonadministrative component of the Wuhan conurbation.⁴⁵ Later in the century, in response to French aggressiveness and the growth of the Tonkin trade, the government established circuit yamens in Meng-tzu (an ordinary county capital in Yunnan), by then a regional city in the economic hierarchy, and in Lung-chou (an ordinary *t'ing* capital in Kwangsi), by then a greater city.⁴⁶

As of 1893, the Chinese ecumene was ringed by 25 circuit capitals: eight along the northern Inner Asian frontier, four on the western frontier facing Tibet, three on the southern frontier facing Tonkin, and ten along the coast. Though many of these were, in fact, the largest and most important prefectural-level capitals within their circuits, others were lower-ranking or smaller capitals whose more peripheral position was strategic for the coordination of trade with, and defense against, the relevant "barbarians."

Still, circuits at the periphery of the imperial domain accounted for fewer than a third of all circuits, and the preoccupation of their intendants with foreign relations in the strict sense should perhaps be seen as a peculiarly intensified manifestation of the intendant's role. A more generic formulation of it might be phrased as responsibility to see that the external affairs of his circuit conformed to the strategic policies of the court. Here we have a rationale for the intendant's peculiar mixture of concerns—regional defense, long-distance trade, revenue from commerce, and control of outsiders—and for his peripheral role with respect to education, justice, the land tax, and other matters primarily affecting the local populace.

The variable guise of the circuit intendant—here primarily occupied with military affairs, there with customs, elsewhere with negotiations with non-Han border peoples—is only to be expected from our survey of inter- and intraregional differentiation. If one asks why the seat of T'ung-Shang circuit (Shensi) was situated at the southeastern border of its territory in an ordinary *t'ing* capital of no particular commercial importance, the answer lies in the great strategic value of the San-men Gorge, through which the Yellow River flows from the Northwest physiographic region into North China. It is notable that T'ung-Shang's neighboring circuits in adjacent provinces—in this area the river constituted the boundary separating Shansi province from Shensi and Honan (see

Map 2, p. 215)—were also headquartered in small cities sited directly on the Yellow River, namely P'u-chou-fu (Shansi) at a strategic site above the gorge, and Shan-chou (Honan) at a comparable site below it. Other anomalies may be accounted for primarily in terms of the hierarchy of economic central places. Why was it not always the most important trade center among the prefectural-level capitals in a circuit that was made the capital? The answer in several cases is that the circuit's most important economic center was a nonadministrative city, in which case the capital of the county-level unit in question was made the circuit capital. Feng-yang-fu (Anhwei) and Ching-chou-fu (Hupoh), for instance, both merely local cities in their own right, were nonetheless circuit capitals, and their prefect posts carried four-character designations; each owed its administrative preeminence to the presence within the metropolitan county of a nonadministrative center ranking as a regional city in the economic hierarchy—Lin-huai-kuan and Sha-shih, respectively. Hsiang-yang-fu (Hupoh) and Li-chou (Hunan) are comparable cases, their status as circuit capitals and their FCN post designations reflecting in each case close proximity to nonadministrative greater cities—Fan-ch'eng and Ching-shih, respectively. Hsin-yang (an ordinary *chou* capital in Honan) and Wu-hu (an ordinary *hsien* capital in Anhwei), both circuit capitals of long standing, were regional cities in the economic hierarchy.

These examples suffice to account for the logic of anomalies in the administrative status of circuit capitals and to make the point that the flexibility and responsiveness peculiar to the circuit level of administration often served to bring a city's place in the administrative hierarchy into closer alignment with its level in the economic hierarchy. It should also be clear why so many circuit capitals were exceptions to the general rule that military and fiscal salience did not go together in the same urban posts.

Finally, a word about ordinary *chou* capitals, whose role in defense, as we have seen, was often to guard the immediate approaches to high-level capitals. Being situated on major roads in regional cores, many *chou* capitals were also commercial centers of some importance. A number of them, interestingly enough, carried the anomalous post designation of CN, signifying their modest importance for both trade and security. It should now be clear why the official ranking of county-level units within prefectures (declining from *chou* to *t'ing* to *hsien*) differed from their ordering by population size—from *chou* to *hsien* to *t'ing*. The official elevation of ordinary *chou* and *t'ing* above counties reflected their strategic importance, but the distinctive strategic role of each meant

that *chou* capitals were likely to have greater economic centrality than county capitals whereas *t'ing* capitals normally had less.

Informal governance. In an earlier analysis of marketing in rural China, I argued that in most respects the organization of informal politics paralleled the structure of marketing systems found at the lower reaches of the economic hierarchy as described in this paper.⁴⁷ At a level that was one or two steps removed from villages, the arenas of politics and the units of informal administration were standard marketing systems, and politico-administrative action, like economic activity, was centered in the market town and reflected the periodicity of the marketing week.⁴⁸ In most parts of China, such informal power structures extended up the hierarchy at least to central marketing systems and often to local-city trading systems or higher.⁴⁹ It should be emphasized that the leadership bodies involved were not town councils, even though they usually met in the central place; leaders were drawn from throughout the relevant territorial system, and hinterland and town were "administered" as an undifferentiated unit. Naturally the more powerful leaders were involved at more than one level, and the considerable degree of such vertical overlap in the corps of leaders was accompanied by some horizontal overlap, as when a resident of an intermediate market town played a role in the power structures of both central marketing systems to which his native place was oriented.

In relating the arrangements for informal governance to the formal administrative hierarchy, two points are of particular significance. Since political arenas and marketing systems were spatially coterminous, and since the interrelations of parapolitical systems recapitulated the hierarchy of economic systems, the interests of local traders coincided with those of local gentry leaders more closely than might otherwise have been the case; in any event, gentry control of leading merchants was facilitated. In the usual case, the leading merchants of the market town or local city were brought into leadership councils by the gentry "establishment," and in intersystem conflicts economic and political issues were closely intertwined. Second, the element of spatial competition inherent in the overlapping hierarchical mode that we have shown to characterize the natural economic hierarchy rendered local-level politics particularly flexible and adaptive. The parapolitical system centered in a standard market town might align with higher-level systems centered on any of the neighboring higher-level market towns or, if power were roughly balanced, find itself in a position to play one off against another. By the same token, neighboring high-level political systems were in competition for the allegiance of intervening low-level systems.

The nature of the hierarchy also permitted a kind of territorial aggrandizement that was not possible in political systems contained within administrative boundaries. An exceptionally powerful political structure at the local-city level might dominate all of the systems centered in the surrounding ring of central market towns and even extend its sway to the intermediate systems on the far side of those central market towns, thereby truncating the political structures centered on neighboring local cities.

We have already established the point that the population of economic systems at the same level of the hierarchy (say, central marketing systems) varied according to position in the regional structure: populations were smaller in such poorly endowed and underdeveloped regions as Yun-Kwei and larger in richer, better developed regions such as the Lower Yangtze; smaller in peripheral areas and larger in regional cores; smaller in the case of systems whose nodes were central market towns and larger in the case of systems centered on local or higher-ranking cities. The same pattern held for the total economic demand within the system and for the total volume of business transactions. On first principles, we would expect comparable patterning in the strength of the informal political structures that inhered in these economic systems. In particular, of course, elites were disproportionately concentrated in more favorably situated, richly endowed, "urbanized" marketing systems, so that the nonofficial elite and, a fortiori, the bureaucratic elite would be far more numerous in a central marketing system whose node was a greater city in the regional core than in a central marketing system whose node was a central market town situated in the far periphery. Consequently, leadership councils would be more selective in systems of the former type, with comparatively heavy representation of officials-out-of-office and powerful merchants. Finally we would expect territorial aggrandizement (of the kind described above) by a strong parapolitical system within a regional core at the expense of more peripherally situated neighboring systems. Thus, we would have every reason to believe that the relative power of informal politico-administrative systems and the standing of their leaders varied systematically in accordance with the model developed above of regional economic systems.

The first point of contact between the hierarchy of local parapolitical systems and the hierarchy of bureaucratic administrative units was normally the county-level capital. That critical intersection was, in most cases, in a local city or central market town, but in this respect, too, there was sharp variation in accordance with place in the regional struc-

ture. Over 60 percent of the high-level economic centers (greater cities or above) that housed county-level yamens were situated in regional cores. The corresponding figures are 49 percent for local cities, 40 percent for central market towns, and 32 percent for intermediate market towns; the handful of standard market towns that served as capitals were all located in regional peripheries. Thus, the range of variation was great on two counts. The local leaders who dealt with the magistrate of a peripheral county were likely to have headed the unusually weak power structure of a relatively small central marketing system, encompassing, say, a population of 50,000; few among them would have been graduate degree-holders or former officials of any importance. By contrast, local leaders who confronted the magistrate of a metropolitan county in a core city were likely to have headed the exceptionally strong power structure of a relatively large local-city trading system, encompassing a population that most likely exceeded half a million; few among them would not have been graduate degree-holders or former officials of great power. In the one case the scope for informal governance below the intersection with the bureaucratic government was fairly restricted, in the other case extremely broad.

It would appear, then, that the strength and resources of informal parapolitical systems varied through regional space in an approximation of complementary distribution with the capacity of bureaucratic government to attend to those aspects of governance not focused on the court's overriding concern with revenue and defense. We may conceive of the matter in terms of a variable division of labor. The "services" at issue included resolving civil disputes and maintaining local order; apprehending and punishing criminals; dispensing famine and disaster relief and other welfare services; promoting education and supervising institutions related to imperial examinations; constructing and maintaining public works; and licensing and regulating certain semiprofessionals and businessmen. For simplicity's sake, let me lump these activities together as societal management and social control and point to the obvious fact that the extent to which formal government could shoulder responsibility for them was a function of administrative intensity.

It was possible, I argue, to make a go of giant prefectures at the heart of great economic systems—that is, bureaucrats could concentrate on revenue collection in such prefectures—only by allowing much of the responsibility for societal management to devolve on informal parapolitical structures. And it was in just such areas that local parapolitical structures were largest and strongest. In the rich core areas where counties were populous and span of control broad, nonofficial societal

management was institutionalized under the leadership of urban elites, merchants as well as gentry, whose “governmental” activities so reduced the routine of county-level yamens that control by the prefectural yamen was not necessarily perfunctory despite the broad span of control;⁵⁰ it was even possible for overburdened prefects to rely on native officials-out-of-office to help keep tabs on county magistrates. In less favorably situated areas near the transition between core and periphery, where both county populations and spans of control were closer to the empirewide average, local parapolitical structures tended to be weaker, less effective, and controlled by less exalted leaders; and there county-level yamens were in a position to shoulder more of the responsibilities of governance, and prefectural-level yamens were able to spread their attention more evenly over the whole range of governmental functions.

If one asks how the government induced leaders throughout the nested hierarchy of local systems to serve as its informal agents, the answer appears to rest heavily on the state’s control of the status symbols that defined and graded elites, namely the “academic” degrees associated with the imperial examination system. The manifest function of that system was to cultivate and identify talented men for recruitment to government service, but it also enabled the state to monopolize the most important status symbols in the society at large and to control their significance and distribution by setting quotas, fixing the academic content of the examinations, canceling or adding examinations, and (of particular importance in this context) denying certain groups access to the examination sheds.⁵¹ It is hardly accidental that the local systems most strongly caught up in the government-sponsored academic competition were found in those very areas where field administration was least intensive. Academically successful localities in Ch’ing China were heavily concentrated in the local-city trading systems of cities that were at once greater or higher-level cities in the economic hierarchy *and* prefectural or higher-level capitals in the administrative hierarchy.⁵² These corresponded in large part to the metropolitan counties of the prefectural-level units whose capitals are shown in the first and second diagonals of Table 18.

It all fits together. Areas of high revenue potential had the resources to invest heavily in grooming young men for academic success, producing in the process degree-holding elites that were dependent on bureaucrats and particularly susceptible to their normative controls. And these were the elites whose leaders would man the extensive and elaborated parapolitical structures on which so much of local governance necessarily devolved by virtue of the highly extensive form of field admin-

TABLE 20. DISTRIBUTION OF CENTRAL PLACES BY LEVEL IN THE ADMINISTRATIVE AND ECONOMIC HIERARCHIES, 1893

Level in the economic hierarchy	Level in the administrative hierarchy ^a						Total
	Imperial	Provincial	Circuit ^b	Prefectural and aut. <i>chou</i> ^c	Low-level ^d	Non-adm.	
Central metropolis	1	3	2				6
Regional metropolis		15	1	3	1		20
Regional city		1	26	20	8	8	63
Greater city			19	77	85	19	200
Local city			12	62	494	101	669
CMT				17	581	1,721	2,319
IMT					106	7,905	8,011
SMT					12	27,700	27,712
Total	1	19	60	179	1,287	37,454	39,000

^a Wuhan and Kuei-sui are counted as single cities, and Chiang-pei-t'ing is counted as part of Chungking. See notes to Table 6.

^b Excludes the sixteen provincial capitals that were also circuit capitals. The table appears to lack one circuit capital, since the yamens of two circuits are housed in Wuhan, which is counted here as a single city.

^c Includes the two autonomous *t'ing* that were structurally analogous to autonomous *chou*.

^d Includes capitals of prefectural-level units (25 autonomous *t'ing* and four prefectures) that contained but a single county-level unit.

istration favored in areas with a high revenue potential. Where obverse conditions produced local leaders who were less reliable agents of local yamens, more intensive administrative arrangements reduced the state's reliance on informal governance.

An obvious problem with the basic strategy of Ch'ing field administration was how to enlist the services of local gentry and merchants as informal agents of bureaucratic government without so strengthening them and the parapolitical structures they controlled that their power could pose a threat to bureaucratic control. As suggested above, institutional arrangements that tied the interests of local elites to those of the state were doubtless the chief means of coping with this problem. They did not preclude additional precautions, however. It appears likely to me, for instance, that where the potential danger from concentrated local power was greatest, administrative boundaries were deliberately drawn with an eye to their divisive consequences.

The kind of entrenched power that involved illicit connivance between officials-in-office and local elites was effectively contained in Ch'ing China by such bureaucratic devices as rules of avoidance and rapid turnover of incumbents. Thus, the greatest danger lay in collusion between powerful gentry and wealthy merchants in areas where both were concentrated. From evidence available to me, it appears that within the informal political systems discussed above, cooperation between gentry and merchants was less than exceptional,⁵³ and as one source of a community of interests I pointed to the fact that for gentryman and trader alike the field of operations at each level was identical, namely the commercial hinterland of a given central place. Above the level of intersection between the "natural" economic hierarchy and the formal administrative hierarchy, however, the relevant arenas of the two leading social groups tended to diverge, as the interests of the gentry were pulled inexorably toward the hierarchy of official administrative units. If for no other reason than that the regular academic ladder recapitulated the structure of field administration, the concerns of the higher gentry were largely contained within and focused on the hierarchy of counties, prefectures, and provinces, whereas those of merchants related to the hierarchy of trading systems centered on greater cities, regional cities, and metropolises.

To what extent did the two hierarchies coincide? Part of the answer may be seen in Table 20, which shows the distribution of cities by level in the administrative and economic hierarchies. It is evident that there was considerable divergence between the maximal administrative and

economic hinterlands of particular cities, especially those in the middle range. The leading gentry of a given prefecture, for instance, might find their political action focused at a city whose leading merchants were concerned either with a local-city trading system that was much less extensive than the prefecture or with a regional-city trading system that extended well beyond the prefectural boundaries. Cities classified in the upper-right cells of Table 20 all point to more or less extreme cases of misalignment whereby extensive trading systems climaxed in cities that were not even capitals of the smaller prefectural-level administrative units wholly contained within them. Chou-chia-k'ou, for instance, one of eight nonadministrative regional cities, was the base of great merchants whose area of operations extended far beyond the prefecture (Ch'en-chou) in which it was located, a prefecture whose capital was a city of relative insignificance. Focusing on the column of Table 20 showing low-level capitals, we may note that the one county-level capital that served as a regional metropolis (Wei-hsien in Shantung), the eight county-level capitals that served as regional cities (including Tchou in Shantung, Wu-hsi in Kiangsu, and Wan-hsien in Szechwan), and most of the 85 county-level capitals that served as greater cities were all centers of commercial systems that extended beyond the prefectural-level administrative units to which the counties in question belonged. In these instances, not only were the commercial systems to which great merchants were oriented and the administrative systems to which leading gentry were oriented of different territorial magnitude; they were also differently structured in space, being centered on quite separate nodal cities.

It should be clear, moreover, that the data in Table 20, showing the alignment of *centers*, seriously understate the amount of misalignment between *systems*. By the very nature of the two structures of territorial systems—the uniform discreteness of the one, the indiscrete overlapping of the other—the alignment of systems was necessarily grossly imperfect. And, to focus on the point at hand, they could be made to diverge radically by deliberately drawing administrative boundaries to minimize convergence.

Limiting examples to the exalted level that can be illustrated by reference to Maps 1 and 2 (pp. 214–15), we may focus our attention on the cores of the Lower Yangtze and North China regions. Had the former been included in a single province—and the Lower Yangtze as a whole would have made a smaller-than-average province in terms of area—the hierarchy of administrative units would have coincided all too closely with the hierarchy of commercial systems within the region.

In an area that included the strongest concentrations of rich merchants *and* of powerful gentry in the entire realm, potential collusion between the two groups at all levels extending up to the central metropolitan trading system would have posed a very real threat to imperial power. By drawing provincial boundaries so that the core of the region was divided among three provinces *and* so that the metropolitan trading systems were split between administrative units (the entire portion of the regional core in Anhwei province, for instance, was oriented economically to Nanking in Kiangsu province), the region's powerful gentry were fractionated into competing elites, and the hierarchy of administrative systems within which each provincial gentry group was focused was sharply differentiated from the commercial territorial hierarchy that shaped the interests of Lower Yangtze merchants. It will be noted, moreover, that of the three provinces involved, Kiangsu and Anhwei each included a portion of the North China regional core, while Chekiang incorporated the northern portion of the Southeast Coast regional core. Thus, in interprovincial competition, the Lower Yangtze gentry within each province allied with gentry in the core of different regional economies.

In that part of the North China core farthest from the imperial capital, provincial boundaries strongly suggest high-level gerrymandering. One effect of extending a leg of Chihli deep into the southern portion of the regional core was to split the metropolitan and the regional-city trading systems of both Kaifeng and Tung-ch'ang-fu between two provinces and to tie the interests of the powerful gentry of Ta-ming *fu* (the prefecture forming the southern leg of Chihli) to the metropolitan province rather than to Honan or Shantung, the provinces on which the interests of Ta-ming merchants were focused.

I am inclined to interpret in similar terms a fairly rare and highly peculiar administrative arrangement at the local level. If the concentrated power of merchants and gentry within local parapolitical structures reached dangerous proportions anywhere, it would have been in the local-city trading systems centered on cities ranking high in both hierarchies—such Lower Yangtze cities as Soochow, Nanking, Hangchow, Yangchow, Ch'ang-chou-fu, Hu-chou-fu, and Shao-hsing-fu; and such metropolises elsewhere as Peking, Sian, Chengtu, Changsha, Hengyang-fu, Nanchang, Foochow, and Canton. The administrative peculiarity in question was common to all of these cities, and it resulted from the fact that each served as the capital of more than one county, three in one instance (Soochow), two in all others. In such cases, the county boundary ran through the city, and the yamen of

each county was located in the appropriate sector.* This administrative sectoralization of the city's immediate hinterland meant that there was no county-level yamen to which the extraordinarily strong power structure of the local-city trading system as a whole could relate. As a result, their political focus would have been directed upward to the prefectural yamen. In all probability, this escalation served to weaken the informal political system in two ways. Lesser merchant and gentry leaders whose interests did not extend beyond the local-city trading system and whose standing was uncomfortably low for negotiations with the bureaucrats posted to such high-ranking prefectural yamens may well have declined to participate, focusing their political activities at the next lower level. As for the more exalted leaders of the system, escalation would have brought out the divergent interests of gentry and merchants, whose respective systems of reference at the higher level—the prefecture and the greater-city trading system—were spatially differentiated.

Conclusions

In this paper I have described how regional urban systems were shaped by physiography and how they in turn structured the economy of different physiographic regions. The economic centrality of cities was shown to vary from one region to another and systematically within each region in accordance with its core-periphery structure and transport grid. Although the details of this analysis provide what I believe to be a useful framework for investigating the economy and society of late imperial China, the close correspondence found between central-place systems and physiographic regions, on the one hand, and the relative autonomy of those regional economies, on the other, might well be expected in the case of an agrarian society of subcontinental magnitude lacking mechanized transport.

* Altogether 24 cities throughout China served as the capitals of more than one county. All but two of these cities were located in regional cores, and thirteen were found in the Lower Yangtze region. They included ten of the twenty provincial and higher-level capitals, ten prefectural capitals, and only four county capitals. In addition, *chou* and *t'ing* capitals provide examples—only two to my knowledge—of cities that were administratively divided. T'ai-ts'ang, the capital of an autonomous *chou* in Kiangsu, housed not only the *chou* yamen but also the yamen of Chen-yang, a subordinate county, and the boundary running through the city separated the county from T'ai-ts'ang *pen-chou*. Hsü-yung, the capital of an autonomous *t'ing* in Szechwan, consisted of two separately walled components on either side of a river, with the yamen for the *t'ing* on the west bank and that for its subordinate county, Yung-ming, on the east bank; the boundary between the county and the directly ruled area followed the course of the river.

My findings concerning the regional basis of field administration, however, are less than intuitively obvious. I am led to conclude that Ch'ing field administration was marvelously adapted to the realities of regional structure within the empire. On the one hand, the revenue potential of different localities was largely a function of their place in the hierarchy of nodal economic systems that culminated in eight regional economies, each with a core-periphery structure. On the other hand, defense requirements varied in conformity with the structure of physiographic regions; critical defense perimeters were closely associated with regional frontiers, and other strategic sites guarded the major approaches to the heartland of physiographic regions, whose rich resources and great cities constituted the ultimate military objectives. The basic strategy underlying the design of field administration was to adjust the size of county-level units in accordance with position in the macroregional structure—maximizing county populations in the high-revenue portions of the core and minimizing county areas in the insecure and vulnerable areas along the regional frontiers—and then to form prefectural-level units that contained many county-level units at the core (so as to incorporate in as few prefectures as possible the key economic areas on which the empire depended for the bulk of its revenue) but few at the periphery (so as to simplify the chain of command and achieve closer supervision of local officials in times of crisis). The capstone of the system was the meticulous classification of capitals that faithfully reflected the core-periphery structure of regions, the capital's level in the hierarchy of economic central places, span of control, and the relative salience of distinctive administrative tasks. This complex scheme, involving post designations as well as administrative level and rank, enabled the central government to deploy its bureaucratic cadre to maximum advantage. Finally, the specialized functions of circuits introduced some critical differentiation into the administrative chain of command and modified the basic design as necessary to serve broader geopolitical goals.

These findings effectively dispose of the notion that cities in imperial China were but microcosms of empire, more or less uniform creations of an omnipotent state. Rather, they give evidence of skilled husbanding and deployment of the limited bureaucratic power that a premodern court could effectively control. Bureaucratic government may have imposed elements of formal uniformity on Chinese cities, but in practice field administration expressed rather than suppressed functional differentiation within the urban system.

Our investigation of urban networks in relation to regional structure

has underlined the remarkable degree to which cities were at once embedded in society and essential to its overall structure. The point can be phrased in terms of hinterlands. That cities shape their hinterlands is axiomatic. This analysis points to the probable virtues of turning the matter around and examining cities in terms of the number, size, and characteristics of their various hinterlands, and of the degree of coincidence and overlap among them. For in a manner of speaking, these determined variation in urban social structure. The relative strength of gentry and merchants in a given city and their propensity to cooperate in urban governance were functions not only of its position with respect to the two hierarchies of central places (as tabulated in Table 20) but of the degree of fit between the city's economic and administrative hinterlands. Similarly, the relative importance of the bureaucratic element in the governance of cities depended not on administrative level alone but rather on the entire interrelated structure of commercial hinterlands and administrative units. We have also found it useful to relate local parapolitical systems to the hinterlands of economic centers, and to examine their intersection with bureaucratic governance in terms of the superposition of two contrastive modes for stacking hinterlands.

The overall fit, throughout the core-periphery structure of a region, between administrative intensity and the political strength of local systems, together with the complex interaction between economic and political power within regional systems of cities, directs our attention to the mechanisms of dominance and dependency that expressed and reinforced the structure as a whole. The present analysis virtually requires us to ask in what ways the exceptional development of such regions as the Lower Yangtze was dependent on underdevelopment in interior regions, and to what extent development in the cores of regions *caused* underdevelopment in their peripheries. Those who pursue these questions are likely to find differentiation among cities and interurban relations close to the heart of the matter.

Appendix: Criteria and Procedures for Classifying Central Places by Level in the Economic Hierarchy

This appendix characterizes and illustrates the nature of the data used as indicators of economic centrality and specifies the procedures followed in classifying Chinese cities and towns according to level in the economic hierarchy as of 1893.

Central-place systems are spatial systems in which the commercial centrality of any one center is very much a function of its cost-distance from all neighbors at the same and adjacent levels. For this reason it is essential that all relevant data concerning central places and the links between them be related to the major features of their spatial setting. To this end, large-scale work maps were prepared for each of the eight macroregions, using the most accurate of recent map sources as a base for such physical features as altitude contours, watersheds, and river systems. Major transport and trade routes as of the 1890's, both roads and navigable waterways, were plotted from sources produced in the period 1885–1915; these included Chinese manuals and treatises on waterways and merchants' routes, accounts of Western and Japanese travelers and trade missions, and above all a series of detailed reports on inland transport solicited in 1890 by the Council of the China Branch of the Royal Asiatic Society from nearly 50 locally resident experts.⁵⁴ The regional core, as described in the text, was also delimited on each map.

The next step was to plot on these regional maps all central places that stood any chance, as of 1893, of having commercial functions at the local-city level or higher. This involved a selection from the approximately 2,500 central places for which data had been prepared, as described on pages 221–22. The following criteria delimited the subset to be mapped: (1) all centers in which a post office of any grade had been established by 1915 (820 capital cities and 370 nonadministrative centers); (2) every place considered important enough as a trade center to warrant a descriptive sketch in *Shina shōbetsu zenshi*, a comprehensive series of provincial gazetteers compiled by Tōa Dōbunkai and reflecting data as of 1911–15 (659 capital cities and 234 nonadministrative centers); (3) all capitals any one of whose top bureaucratic posts had been officially designated by the character *ch'ung* ("thoroughfare; frequented"), indicative of an important transport node (585 cities in all); and (4) all central places above a specified size threshold, set for most regions at 4,000 for the core and 2,000 for the periphery. Since city size is a function of many factors in addition to economic centrality, its use in this regard was primarily as a failsafe—to avoid leaving out towns whose appreciable size might have been due largely to economic centrality. City population estimates and indicators had been culled from a wide variety of sources, including local gazetteers and the more reliable accounts of Western and Japanese travelers. Since the four variables used as selection criteria were strongly intercorrelated, the number of central places to be plotted was less than 1,500—approximately 1,000 of the 1,546 capital cities, plus 400-odd nonadministrative centers.

The single indicator on which I relied most heavily in developing comparative profiles of economic centrality was the postal status of the center as of 1915.⁵⁵ The Imperial Postal Service was established in 1896, and during

the next fifteen years service was rapidly extended throughout the empire. Branches were of four grades: first-class, second-class, and third-class post offices, and postal agencies. Branches were further distinguished by the number and type of special services offered. Of particular interest here, because of their significance for business activity, are express delivery and the availability of money orders, whose upper limits were specified as 50 or 100 yüan. Available special services provide little basis for discriminating within the category of first-class post offices (all of which offered most) or third-class post offices (most of which offered none); but in the case of second-class offices, the number and configuration of special services turned out to correlate rather closely with other indicators of economic central functions. Thus, central places were classified according to available postal facilities as follows: (1) first-class PO; (2) second-class PO offering three or more special services including express delivery and money orders up to 100 yüan; (3) second-class PO offering two or more special services including express delivery and money orders up to at least 50 yüan; (4) second-class PO offering two or more special services that did not include express delivery; (5) second-class PO whose only special service was the availability of money orders not exceeding 50 yüan; (6) second-class PO offering no special services; (7) third-class PO; (8) agency only; (9) no postal facilities of any kind.

There are three obvious sources of error in using the postal hierarchy of 1915 as an indicator of the economic hierarchy as of 1893. First, although businessmen were clearly the heaviest users of postal services overall—for correspondence as well as for parcel post and money orders—government use was also significant in central places that served as administrative capitals. Second, to some unspecified degree the extension of postal services was biased in favor of long-distance trade routes and the modernizing sector of the business community, and at any point in time (though less so in 1915 than in 1910 or 1905) postal services were more fully developed (holding degree of commercialization constant) in coastal regions than in the interior. Third, despite the lag between the level of postal facilities provided and local demand for them, the inherent anachronism meant that the level of postal services reflected the reordering of economic centrality that had occurred in certain areas as a consequence of transport modernization, particularly the introduction of railroads and steamships, during the twenty years after 1893.

The first of these difficulties was minimized by also coding central places according to administrative status, so that the governmental portion of postal demand could be systematically discounted. The second difficulty was largely circumvented by analyzing the central-place hierarchy of each region separately. Since postal codes were compared only within regional systems and subsystems, there was no operational assumption of cross-systemic equivalence of codes. The third difficulty was confronted by adding to the postal code the subscripts *r* (for railroad) and *s* (for steamship) when the center in question had acquired such service prior to 1912, so that the interim effect of modern transport could be systematically discounted. With these biases partially controlled, the postal facilities code was found to be closely related to all of the more direct, but less comprehensive, indicators of commercial central functions in the 1890's.

When the postal-facilities codes of each plotted central place were added

to the regional maps, the general outlines of the central-place hierarchy became apparent. Centers sited at major transport nodes, with postal-facilities codes higher than those of any other cities within a radius of 20–30 miles, could only be high-level commercial cities, whereas those poorly served by transport routes, and whose postal-status codes were lower than those of all their immediate neighbors, could only be low in the economic hierarchy. On the basis of the postal data and spatial configuration alone, each of the 1,400-odd mapped central places was assigned to one of six tentative categories, namely (1) putatively a central or regional metropolis, (2) putatively a regional metropolis or regional city, (3) putatively a regional city or greater city, and so on down to (6) putatively no higher than a central market town. The purpose of this preliminary classification was to identify the groupings of central places within a region for which comparable data would be sought in order to make reasonably valid final assignments to functional levels.

For this purpose, a variety of specific data were collected as available. Trade statistics were compiled for the period from 1880 to 1920 and used in conjunction with contemporary accounts of the nature and extent of the trade at particular cities. Particularly useful in this regard were the surveys, travel accounts, and assessments made by Western and Japanese trade missions, businessmen, and consular agents, together with the reports, already mentioned, that were collected in the early 1890's by the China Branch of the Royal Asiatic Society. Revenues from the taxation of commercial activities are reported in many county gazetteers, sometimes specific to the various central places within the county, more often than not aggregated for the whole; even the latter were helpful when the county contained a single city of overwhelming commercial importance. The number of merchant *hui-kuan* (same native-place associations), together with the geographic spread of the native places involved, provided important clues to the city's place in inter-urban trade. The number of shopkeeper households, at least in the capital city, is recorded in many local gazetteers, and in due course I developed a working table of diagnostic ranges for core and peripheral areas (e.g., for local cities, 280–900 shopkeeper households in core areas, 165–525 in peripheral areas; for greater cities, 900–2,700 in core areas, 525–1,600 in peripheral areas). For certain cities, an estimate of the size of the built-up area exclusive of yamens, examination halls, and other official buildings (in the case of capitals), but inclusive of commercial suburbs, could often be made using contemporary gazetteer maps in conjunction with recent, more accurate city plans.

With all relevant data at hand, I proceeded with the classification of centers, beginning at the top of the hierarchy. After deciding which cities ranked as central and regional metropolises in the empire as a whole, I then pursued decisions at lower levels one region at a time, moving down the hierarchy. In cases where the level of an entire subsystem was debatable—was central place X with its satellites a local city surrounded by central market towns or a central market town surrounded by intermediate market towns?—I sought specific evidence in relevant gazetteers. More than half of all county-level gazetteers for the Kuang-hsü period (1875–1908) provide some economic indicators for all central places in the county, which typically included central as well as intermediate and standard market towns and often one or

more higher-level centers as well. Center-by-center data supplied by particular gazetteers include number of firms by line of business, number of brokers by type, commodities sold and/or local products purchased (sometimes with an indication of the volume of transactions), revenue from sales taxes by commodity, number of shopkeeper households and/or total households, market schedules, and folk classifications of markets by "size" or "bustle."⁵⁶

An example may illustrate the manner in which gazetteer data enabled me to fix the level of the highest-ranking central place in a county. The 1911 gazetteer for Ch'ing-p'ing, a county in Tung-ch'ang fu (Chihli), lists for each of fourteen central places the number of dealers in five classes of taxable goods, together with the annual tax revenue from each.⁵⁷ Ten of the towns, which I tentatively identified as standard market towns, had only one or two dealers and tax revenues under four taels. In the county capital and two other towns, which three places appeared to be intermediate market towns, the number of dealers ranged from twelve to sixteen and tax revenues from eighteen to 23 taels. The remaining market town had twenty dealers and provided nearly 33 taels of tax revenue. The spatial relations of these towns to one another confirmed the supposition that the highest-ranking center was a central market town; this in turn helped establish level alignments within the regional-city trading system centered on Tung-ch'uan-fu.

The distribution of market schedules among central places was a reliable indicator of level in the economic hierarchy within many, if not most, local-city trading systems. I have demonstrated elsewhere⁵⁸ that when new markets were established in rural China, local leaders were normally careful to select market days that avoided or minimized scheduling conflicts with neighboring higher-level market towns. As a result, neighboring towns with the same market schedule were both almost certain to be merely standard market towns; and the monopolization of particular market days by a town may be taken as strong evidence that the town in question performed higher-level commercial functions for its neighbors. The principle is illustrated in Professor Shiba's paper in this volume (pp. 428–29), where he shows that three central market towns monopolized certain market days throughout the western sector of Ningpo's greater-city trading system. Perhaps the most common local pattern was this: intermediate market towns were distinguished from dependent standard market towns by dovetailed scheduling rather than by frequency of market days; central market towns were distinguished by a doubled schedule (say, four market days rather than two in each ten-day segment of the lunar month); and local cities were characterized by multiple markets whose combined schedules often added up to a daily market. Whatever the local pattern, the mapping of market schedules normally enables one to ascertain the economic level of the highest-ranking central places with reasonable assurance.

Finally, I should mention incremental goods and services diagnostic of level in the economic hierarchy—the type of evidence on which classic central-place analysis places greatest emphasis. The chief complication here is that the precise schedules of such goods varied from one trading system to another in accordance with different levels of population density and commercialization and also with distinctive regional preferences. Thus, I illustrate functional differentiation by reference to a single relatively homogeneous area: the core of the Upper Yangtze region. My examples of "incremental"

retail goods are limited to those sold in shops that were open for business daily, as opposed to those offered only periodically or occasionally in market-places and roadside stalls—largely because the former are better documented in gazetteers. Shops distinguishing intermediate market towns from standard market towns included those specializing in hardware or miscellaneous tools, caps, wine, and religious supplies (notably incense, candles, and money paper). Shops diagnostic of central market towns included those dealing solely in iron utensils, firecrackers and fireworks, bambooware, cloth, salt, and tea leaves. Specialist shops making their first appearance in local cities included those selling paper and stationery, leather goods, lanterns, altar carvings, flour, and lard. Diagnostic of the greater-city level were shops dealing exclusively in silk and satin fabrics, playing cards and mahjong sets, musical instruments, garlic, and ginger. Specialized retail shops normally found only in regional cities and metropolises included those selling embroidered insignia panels for officials, buttons for officials' caps, animal furs, goldfish, and birds' nests.

A briefer list of diagnostic artisan services (again with reference to firms established in shops) includes, for intermediate market towns, coffinmakers, blacksmiths, tailors, and noodle makers; for central market towns, dyers, shoemakers, and beancurd makers; for local cities, tinsmiths, seal cutters, and lacquerware makers; for greater cities, scroll makers, printers, and glue manufacturers; and for regional and higher-level cities, lapidaries, cloisonné makers, printing-block carvers, and manufacturers of silk cord for fastening Chinese gowns. Other diagnostic incremental services include winehouses for the intermediate market town (teahouses being present in the average standard market town), bathhouses and inns for the central market town, pawnshops and shops renting sedan chairs for the local city, and laundries and transport firms for the greater city. Organized prostitution (usually in connection with inns) first appeared in central market towns; ordinary brothels first appeared in local cities; and graded brothels (first-class, second-class, etc.) first appeared in greater cities. In regional cities and metropolises one found brothels differentiated not only by grade but also by type (e.g., those limited to girls of a particular provenance, specializing in certain kinds of sex, or combining sexual services with particular forms of musical or dramatic entertainment).

As argued in the text, one also expects economic functions associated with interurban trade to be discretely stratified by level in the central-place hierarchy. In core areas of the Upper Yangtze region, wholesaling and brokerage, at least for the staple grains, were nearly universal in intermediate market towns. Specialized (and usually licensed) brokers were typically found in central market towns, where many retail shops sold supplies at wholesale prices to itinerant traders circuiting lower-level market towns. At the local-city level, one typically found brokers in the same line specialized by clientele—some would deal with small buyers from the surrounding market towns, and others with large buyers from nearby higher-level cities. Greater cities usually supported godowns, large-scale wholesalers, and commission houses. As for financial institutions, money shops ("money-exchange" banks, usually *ch'ing-p'u*) were incremental at the level of central market towns, loan and deposit ("money-lending") banks (including *yin-hao* and *ch'ien-chuang*) at the local-city level, and remittance banks (usually *p'iao-hao*) at the regional-city level.

