The Role of Metropolization for the Development Process in India and China
The Demographic and Functional Dimension - A Comparative Analysis

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1. "Metropolization" as a Development Problem of Third World Countries
The Definition of the Concept

With good reasons the urbanization of the earth has been named as one of the most fundamental global process of change in the history of mankind. Unlike in the "Industrial Countries" (I.C.) (1) this radical change covering all spheres of life has taken an entirely different course in the Developing Countries (D.C.) - instead of urbanization we should speak more truly of *metropolization*. This statement stretches the necessity of a definition of the concept. - The phenomenon "metropolization" can be characterized by the following four major features (2):

1. **The demographic dimension**: The concentration process of the population as a whole as well as urban population in the metropolitan cities has to be viewed as the specific characteristic of the striking population increase in the past four decades (1940-1980) in the D.C.s: whereas the metropolitan population (places > 1 mill. (3) of the I.C.s raises to 3.4 times within this 40 years' period it ran up to 15-times (!) in respect of the D.C.s, a demographic process hitherto unknown over such a short historical period. In 1940, the ratio of the metropolitan population was still 75:25 in favour of the industrialized nations while in the short period covered by the next four decades this ratio reached already 40:60 and by the end of this century it will be completely reversed to 25:75. In the year 1940, just about each fiftieth inhabitant of the D.C.s lived in a metropolis, in 1980 it was already each tenth and in the year 2000 almost each fifth person will reside in a metropolitan city located in the Third World. Finally as far as the urban-metropolitan population ratio is concerned: while in 1940 one eigth (16.3%) of the urban population (20.000 and over) stayed in metropolitan cities, in 1980 this proportion rose to almost incredible 46.4% (I.C.: 36,3%), i.e. nearly every second urban dweller lives already in a metropolitan city (Tab.1).

Tab.1: Metropolization Process 1940 - 1960 - 1980; D.C. : I.C.

No.		1940		1960		1980	
		D.C.	I.C.	D.C.	I.C.	D.C.	I.C.
I	Metropolitan Growth (absolute figures - in mill.)	23.1	69.4	110.9	146.9	351.9	235.7
II	Metropolitan: Urban Population Ratio (figures in %)	16.3	24.3	35.4	33.4	46.4	36.3
III	Growth of Metropolitan Population (1940 = 100)	100	100	480	212	1.526	339

Sources: Bronger 1982, p.151, note 6; Gilbert/Gugler 1982, p.5. (extrapolations by the author).

To sum up: The actual population "explosion" has taken place in the metropolises. And: these figures already prove that metropolization is an entirely independent problem within the context of the global process of urbanisation.

2. **The historical context**: In the industrialized nations, especially in Western Europe as well as in North America, metropolization has taken place as a continuous process which began as early as the second half of the past century and must be considered to be causally linked with the preceding industrialization and its creation of jobs. In contrast, metropolization in the D.C.s occurs in an almost reversed situation: only in the last 30-40 years *prior* to their economic development have those countries been, as it were, steamrolled by its dynamics because the connected problems suddenly facing the developing countries arose in addition to those which the industrialized nations had mainly overcome *before* metropolization began: political stability, independence, relative economic stability, a satisfactory standard of living and a sound but flexible structure.(4)

3. **The functional dimension**: A definitely much more essential component of the phenomenon "metropolization" than the already high percentage of population is to be seen in the concentration not only of the political and administrative functions but also of the economic, social and cultural activities upon the capital region - in short,

the *functional primacy* of the metropolis. Apart from the four subcontinental states of China, India, Indonesia and Brazil, all vital functions are concentrated in the mostly sole metropolitan region (including the larger capitals) when related to the strong and disproportionate growth of part of the population (5) (*demographic primacy*) this becomes even more pronounced. Furthermore, the administrative headquarters of most of the national groups in the secondary and tertiary sectors - the multinationals, organizations, companies, etc.-seem to be concentrated almost entirely upon the metropolis(es) (*international primacy*).

4. **The development-policy dimension**: This overconcentration of all the major functions of life was already established in the colonial period which often lasted for several centuries; but it has undergone considerable further development during the short period of political independence. From the point of view of development policy the real explosive effect of the demographic as well as functional primacy together with its strong dynamics produces extremely serious consequences with which the administrations of these cities (and the central governments too) have been and continue to be overwhelmed - especially with regard to their financial constraints.(6) The consequences *internal* to the metropolis are represented expecially by the marginalization of the constantly expanding population strata of the metropolises accompanied by widening income disparities with regard to a numerically small upper class which controls economy as well as politics. A serious aspect is the steadily increasing percentage of slum and squatter areas (of much higher dynamics than the overall demographic "explosion") within these cities which inhabit already 20-50% (and more) of the population. *Externally* it is the causal connection between the dynamization of the metropolitan primacy, and that of the regional development incline as also between metropolization and the development of other regional centers. In concrete terms this means the stagnation of almost all the other regions forming the dynamization of the regional development incline between centre (metropolis) and periphery. This stagnation includes also the vast majority of the higher ranking regional centers. These often neglected regional centers cannot even properly perform their essential functions - ensuring that the rural population is supplied with its basic needs - quite apart from providing development stimuli for "their" region.

The dynamics of metropolization and the regional disparities in the relevant country's development which are directly and causally linked with those dynamics have become a major feature of spatial structure while their consequences have become a serious development problem for Third World nations. Thus, the reduction of the primacy (demographic and functional) together with that of the regional incline presents

itself nowadays as the most important task of regionally-oriented development policy and planning in Third World countries. - The target of this study is the attempt of a comparative analysis between China and India regarding the demographic and functional dimension of the phenomenon "metropolization".(7)

2. The Demographic Dimension

2.1 Basic Constraints

In the beginning we have to make evident, that a comparative regional analysis (8) of the demographic aspect of the phenomenon "metropolization" reveals already a number of basic constraints which make such an intercultural comparison quite difficult - and a worldwide comparison, as undertaken in a large number of urbanization studies, hardly sensible. In concrete terms these constraints refer to (9)

(1) the data-basis in general: In India we have the census conducted regularly within a 10-year-period since 1881 providing reasonably accurate and detailed information. In contrast to this there are no complete records of the population of Chinese cities and towns of any period before the first census ever taken, i.e. the CENSUS 1953 and again up to the year 1982.(10) All other figures are admittedly estimates.

(2) What makes the distinction of the metropolitan population in China and accordingly a comparative analysis still more difficult is the fact that the delimitation of the metropolitan *area* is quite problematic. In this connection a specific feature has been overlooked in most cases: The population figures do not only refer to a more or less limited "urban area" like in India but normally incorporate one or several counties (*xian*) - according to population size comparable to 3-4 Indian *talukas* (11) - i.e. an often considerable agricultural umland. In the recently (1985) published "urban statistics" in China two different area levels have to be distinguished:
- "city proper": *shiqu*
- "city proper and counties": *quanshi*

However, even the "city proper" area in almost all cases is considerably larger than the one of the "urban agglomeration" in India (12) (see: Tab.2 and 3).

(3) In addition to this, the area on which the computation of the population is based (and thus, of course, the population density) varies quite considerably from metropolis to metropolis. This is true especially with respect to China: Shanghai's 6.9 Mio inhabitants are squeezed in 340 sqkm while the 5.3 Mio of Tianjin refer to 4.276 sqkm resulting a density ratio of 16:1! (see: Tab.2, col.2-4).

(4) Growth and distinction of the metropolitan population will be all

the more problematic if we take a fourth component into consideration: The frequent and, sometimes extensive *changes* in urban area. These significant extensions of the municipal boundaries refer to almost all of the Chinese metropolitan cities owing to the communist regime's attempt to make the large cities a virtually self-sufficient economic and administrative unit, "to promote mutual support between industry and agriculture, and to facilitate the assignment of manpower".(13) In contrast to the Chinese metropolis the territorial extensions of the Indian metropolitan cities, even in the case of U.A. areas, were relatively limited in the past 30 years.

(5) A fifth category of constraints - and now the whole problem of comparability becomes a real puzzle - we have the disagreement about the term "urban". More precisely, it is not merely the fact that the demarcation what ist "urban?" differs between our two countries.(14) Unlike in India the rural population within the municipal boundaries is counted separately. To make the confusion almost complete: in recent times the Chinese sources distinguish not only between "total" and "urban" but additionally between "agricultural" and "non agricultural" population. However, because of the often huge area of the Chinese metropolitan cities this figure is more relevant: even within the *shiqu*-area the majority (11 out of 19) of the metropolises have a percentage of "agricultural population" of 20-40%, whereas out of the 12 in India 3.2% is the highest (see: Tab.2 and 3, col.7).

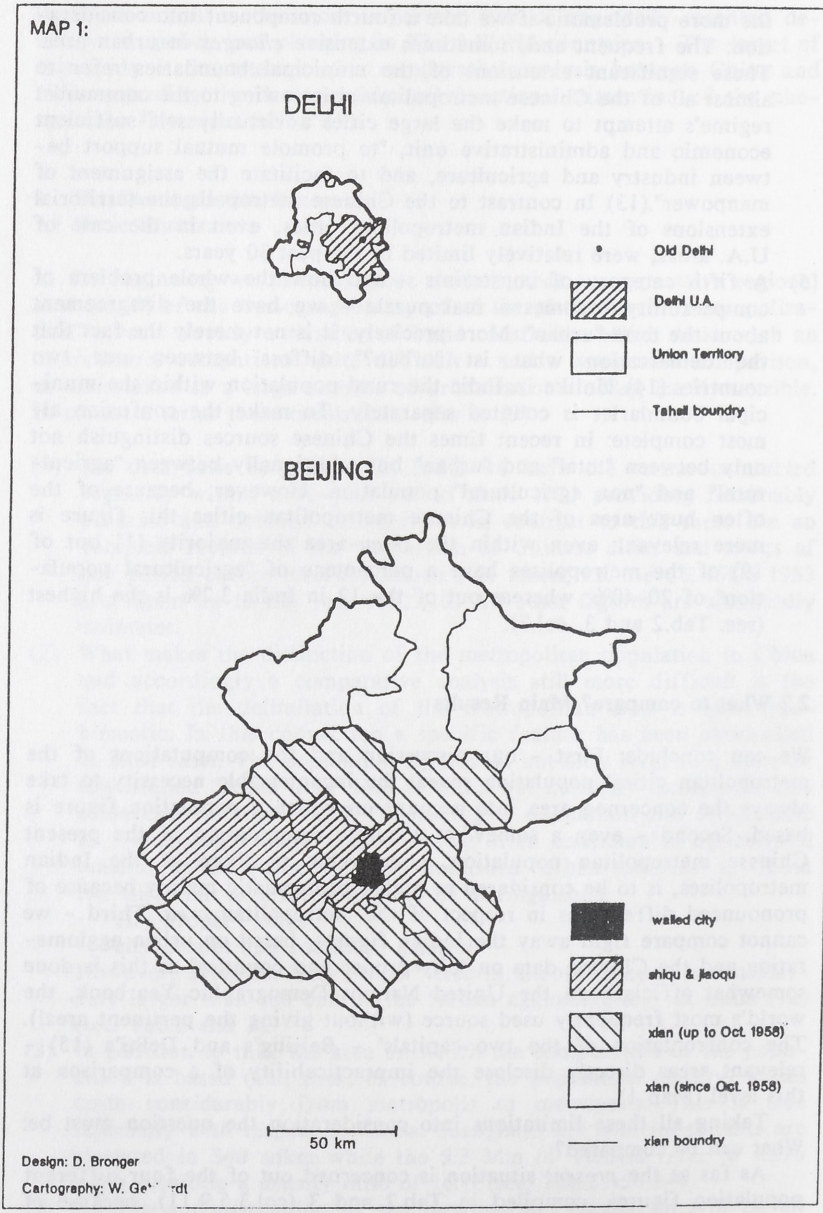
2.2 What to compare? Main Results

We can conclude: First - our discussion and the computations of the metropolitan cities' population reveal the incontestable necessity to take always the concerned area into account on which a population figure is based. Second - even a somewhat accurate computation of the present Chinese metropolitan population, comparable to those of the Indian metropolises, is to be considered as highly problematic mainly because of pronounced differences in respect of the metropolitan *area*. Third - we cannot compare right away the Indian figures, based on urban agglomeration and the Chinese data on "city proper and counties" as this is done somewhat officially in the United Nations Demographic Yearbook, the world's most frequently used source (without giving the pertinent area!). The confrontation of the two capitals' - Beijing's and Delhi's (15) - relevant areas directly disclose the impracticability of a comparison at this level (Map 1).

Taking all these limitations into consideration the question must be: What can be compared?

As fas as the *present* situation is concerned out of the four different population figures, compiled in Tab.2 and 3 (col.3,5,9,11), because of

MAP 1:


DELHI
Old Delhi
Delhi U.A.
Union Territory
Tahsil boundry
BEIJING
walled city
shiqu & jiaoqu
xian (up to Oct. 1958)
xian (since Oct. 1958)
xian boundry
50 km
Design: D. Bronger
Cartography: W. Ge

the even overbounded (16) city area (*shiqu*) of the majority of Chinese metropolises (main exception: Shanghai), the non-agricultural "city proper" population (Tab.2, col.5) (17) and the Indian urban agglomeration figures (Tab.3, col.3) could be compared best. Regarding China's past, we have to use the total population *shiqu*-figures (Tab.2, col.3) because no comparable "non-agricultural" data for the previous years are available. Additionally the "city proper" area corresponds mostly to the 1953-municipal area or is at least comparable to the latter. - As matters stand the results derived from the available data can be summarized as follows:

2.2.1 Metropolization Quota

On a *national* level India (6.2%) and particularly China (4.3%) still rank at the lower end within the Asian Scene.(18) The data on a *regional* level presents quite a different picture: In general - there is quite a pronounced heterogeneous fabric regarding the level of metropolization: Almost exactly half of the states resp. provinces - 13 out ouf the 26 provinces (19) in China and 8 out of the 17 major states in India (20) - are still without any metropolitan city, and some are even far away from developing one. In particular - we can state a number of regions, though still limited, with an already comparatively pronounced metropolization quota of close or even above three times the national average: Maharashtra (17.9%) and West Bengal (16.8%) in India - Haryana/Delhi (32.5%) is to be considered as a special case - Liaoning (18.3%), Hebei (12.6%) (21) and Jiangsu (11.7%) (22) in China. Thus, the data interpretation on a regional basis (Map 2) discloses a number of concurrences.

But what is more relevant: the causes for these regional inbalances coincide largely: The latter regions correspond to the comparatively industrialized parts of both countries, and coincidently the industrialization started in conjunction with the colonial, i.e. the economic interests of foreign countries mainly along the coastal areas including their hinterland: Calcutta and Bombay in India, the "treaty ports", later the exploitation of former Manchuria, in China.(23) On the other hand, the fact that the regions lacking metropolitan cities are more or less peripherally located, does not necessarily coincide with a generally low level of development (Kerala, Punjab!). In China a pronounced regional east-west incline is still existing mainly as a result of the historical events in combination with the natural constraints and despite a strong counter-balancing governmental policy (see below), whereas in India, due to the different natural preconditions, such a clear-cut regional structure ist not that apparent.

TAB. 2: AREA AND POPULATION OF METROPOLITAN CITIES IN CHINA - 1984

PROVINCE/ Metropolis	METROPOLITAN AGGLOMERATION (M.A.) (shiqu)						METROPOLITAN REGION (M.R.) (quanshi)					
	Area (sqkm)	Population (000)	Density (per sqkm)	N.-A. No. (000)	P. %	L.E.D. 1984	Area (sqkm)	Population (000)	Density (per sqkm)	N.-A. No. (000)	P. %	L.E.D. 1984
1	2	3	4	5	6	7	8	9	10	11	12	13
BEIJING	2.738	5.755	2.102	4.983	86.6	595	16.808	9.452	562	5.581	59.1	276
TIANJIN	4.276	5.312	1.242	4.124	77.6	600	11.305	7.989	707	4.394	55.0	291
SHANGHAI	340	6.881	20.239	6.726	97.7	1.058	6.186	12.048	1.948	7.608	63.1	520
HEBEI [1]	6.379	7.203	1.129	4.653	64.6	91	36.838	16.267	442	5.187	31.9	91
Shijiazhuang	284	1.128	3.971	902	80.0	568	2.218	1.718	775	940	54.7	272
Handan	434	954	2.199	728	76.2		968	1.249	1.290	737	59.1	241
Tangshan	1.090	1.366	1.253	921	67.4		13.472	6.033	448	1.227	20.3	115
SHANXI	14.375	6.268	436	3.235	51.6	100	23.222	7.748	334	3.363	43.4	100
Taiyuan	3.044	1.838	604	1.356	73.8	378	6.988	2.297	329	1.389	60.5	212
Datong	2.080	981	472	688	70.2	194	2.080	981	472	688	70.2	194
NEI MONGOL [1]	84.770	5.201	61	3.265	62.8	75	173.794	9.128	53	3.565	39.1	75
Hohhot	2.054	778	379	543	69.8		6.079	1.249	205	587	47.0	102
Baotou	2.153	1.064	494	866	81.4		9.991	1.580	158	926	58.7	150
LIAONING [1]	11.074	12.755	1.152	10.205	80.0	169	141.578	35.626	252	14.148	39.7	169
Shenyang	3.495	4.135	1.183	3.173	76.7	412	8.515	5.262	618	3.316	63.0	244
Dalian	1.063	1.588	1.494	1.334	84.0	577	12.574	4.808	382	1.995	41.5	203
Anshan	622	1.259	2.023	1.089	86.5	642	4.642	2.583	557	1.334	51.6	256
Fushun	675	1.220	1.807	1.077	88.3	551	10.816	2.089	193	1.280	61.3	230
Benxi	1.236	811	656	679	83.7		8.348	1.423	170	842	59.2	175
Jinzhou	974	749	769	585	78.1		17.466	4.572	262	1.253	27.4	128
Fuxin	448	653	1.458	551	84.4		8.938	1.718	192	682	39.7	91
JILIN [1]	11.153	5.284	474	4.059	76.8	120	73.415	15.347	209	5.875	38.3	120
Changchun	1.116	1.809	1.621	1.425	78.7	352	18.881	5.842	309	1.915	32.8	131
Jilin	1.213	1.114	918	883	79.2		27.120	3.944	145	1.644	41.7	137
HEILONGJIANG [1]	74.182	10.002	135	7.416	74.0	127	202.868	19.036	94	9.773	51.3	127
Harbin	1.637	2.592	1.583	2.217	85.5	339	6.929	3.771	544	2.491	66.1	174
Jixi	2.234	799	358	626	78.4		5.402	1.062	197	692	65.1	92
Daqing	5.500	802	146	501	62.5	112	5.500	802	146	501	62.5	112
Qiqihar	4.365	1.246	285	955	76.7		50.585	5.651	112	1.707	30.2	104
Yichun	23.802	814	34	758	93.1		37.412	1.245	33	1.037	83.3	87
JIANGSU [1]	6.207	9.443	1.521	6.330	67.0	161	100.109	61.714	616	13.020	21.1	161
Nanjing	867	2.208	2.546	1.865	84.5	514	6.516	4.608	707	2.186	47.5	207
Xuzhou	185	806	4.359	709	88.0		11.233	7.000	623	1.148	16.4	110
Suzhou	119	696	5.845	612	87.9		7.394	4.324	585	1.355	31.3	283
Wuxi	397	825	2.078	696	84.4		4.650	3.885	835	1.380	35.5	352
ZHEJIANG [1]	8.029	5.896	734	2.562	43.5	132	59.792	27.301	457	4.616	16.9	132
Hangzhou	430	1.223	2.844	973	79.6	711	16.596	5.375	324	1.475	27.4	212
ANHUI [1]	9.154	6.357	694	3.539	55.7	73	31.455	14.915	474	4.171	28.0	73
Hefei	458	853	1.863	594	69.7		7.266	3.437	473	744	21.6	105
Huainan	1.091	1.063	974	603	56.8		2.121	1.590	750	645	40.6	101
FUJIAN [1]	14.819	4.217	285	2.015	47.8	78	47.385	12.150	256	2.683	22.1	78
Fuzhou	1.043	1.165	1.117	755	64.8		11.968	4.827	403	1.078	22.3	94
JIANGXI [1]	10.885	5.049	464	2.574	51.0	71	42.622	12.223	287	3.419	28.0	71
Nanchang	568	1.089	1.917	881	80.9		7.402	3.316	448	1.119	33.8	117
SHANDONG [1]	24.416	17.279	708	5.533	32.0	107	87.126	44.886	515	7.792	17.4	107
Jinan	483	1.395	2.887	1.111	79.6	471	4.875	3.436	705	1.270	37.0	172
Qingdao	244	1.230	5.039	1.140	92.7	726	10.654	6.239	586	1.547	24.8	171
Zibo	2.914	2.281	783	763	33.4		3.424	2.732	798	793	29.0	193
HENAN [1]	7.272	8.609	1.184	4.747	55.1	70	41.919	26.271	627	5.741	21.9	70
Zhengzhou	1.105	1.552	1.404	963	62.0		7.446	4.800	645	1.187	24.7	135
Luoyang	544	1.024	1.882	624	60.9		3.314	2.559	772	705	27.5	134
HUBEI [1]	28.373	11.413	402	5.326	46.7	110	55.261	18.580	336	6.121	32.9	110
Wuhan	1.557	3.338	2.144	2.899	86.9	504	8.216	6.006	731	3.257	54.2	211
HUNAN [1]	13.545	6.702	495	3.571	53.3	77	63.235	22.979	363	4.833	21.0	77
Changsha	352	1.124	3.193	919	81.8	320	12.503	4.970	397	1.248	25.1	59
GUANGDONG [1]	13.848	1.042	753	5.406	51.9	86	113.150	40.977	362	9.408	23.0	86
Guangzhou	1.345	3.222	2.395	2.486	77.2	480	16.657	6.989	420	3.030	43.4	186
GUANGXI [1]	17.994	5.217	290	2.083	39.9	54	38.713	8.515	220	2.345	27.5	54
Nanning	1.834	903	492	565	62.6		10.029	2.245	224	668	29.7	92
Liuzhou	625	618	989	501	81.1		5.259	1.398	266	581	41.6	160
SICHUAN [1]	17.105	12.570	735	6.315	50.2	71	68.098	37.237	547	8.822	23.7	71
Chengdu	1.450	2.540	1.751	1.523	60.0	341	12.614	8.540	677	2.255	26.4	123
Chongqing	1.521	2.734	1.797	2.031	74.3	379	22.341	13.945	624	3.199	22.9	96
GUIZHOU	16.454	4.794	291	1.763	36.8	50	16.454	4.794	291	1.763	36.8	50
Guiyang	2.436	1.353	555	871	64.4	156	2.436	1.353	555	871	64.4	156
YUNNAN [1]	25.727	5.194	202	1.743	33.6	60	39.207	7.107	181	1.976	27.8	60
Kunming	2.081	1.355	651	1.080	70.1	136	15.561	3.268	210	1.183	36.2	363
SHAANXI [1]	9.534	5.279	554	2.869	54.3	75	49.049	14.680	299	3.741	25.5	75
Xi'an	861	2.277	2.644	1.686	74.1	338	9.853	5.446	553	1.956	35.9	130
GANSU [1]	21.257	2.527	119	1.626	64.4	65	46.616	4.457	96	1.799	40.4	65
Lanzhou	2.122	1.455	686	1.145	78.7	444	14.415	2.434	169	1.205	49.5	185
QINGHAI [1]	99.750	633	10	519	82.0	68	102.856	978	6	578	59.1	68
NINGXIA [1]	5.802	1.099	189	532	48.4	72	12.776	1.675	131	598	35.7	72
TIBET [1]		n.a.		n.a.	n.a.	57		n.a.		n.a.	n.a.	57
XINJIANG [1]	167.144	3.775	23	2.411	63.9	84	167.144	3.775	23	2.411	63.9	84
Urumqi	11.440	1.147	100	947	82.5	135	11.440	1.147	100	947	82.5	135
CHINA [1]	726.602	191.155	263	110.128	57.6	100	1.868.981	497.861	266	145.331	29.2	100

1) Total "urban" n.a.: figures not available

Sources: STATE STATISTICAL BUREAU, PRC (Ed.) (1985), Statistical Yearbook of China - 1985, Hong Kong;
STATE STATISTICAL BUREAU, PRC (Ed.) (1985), China, Urban Statistics 1985, Hong Kong.
(author's calculations).

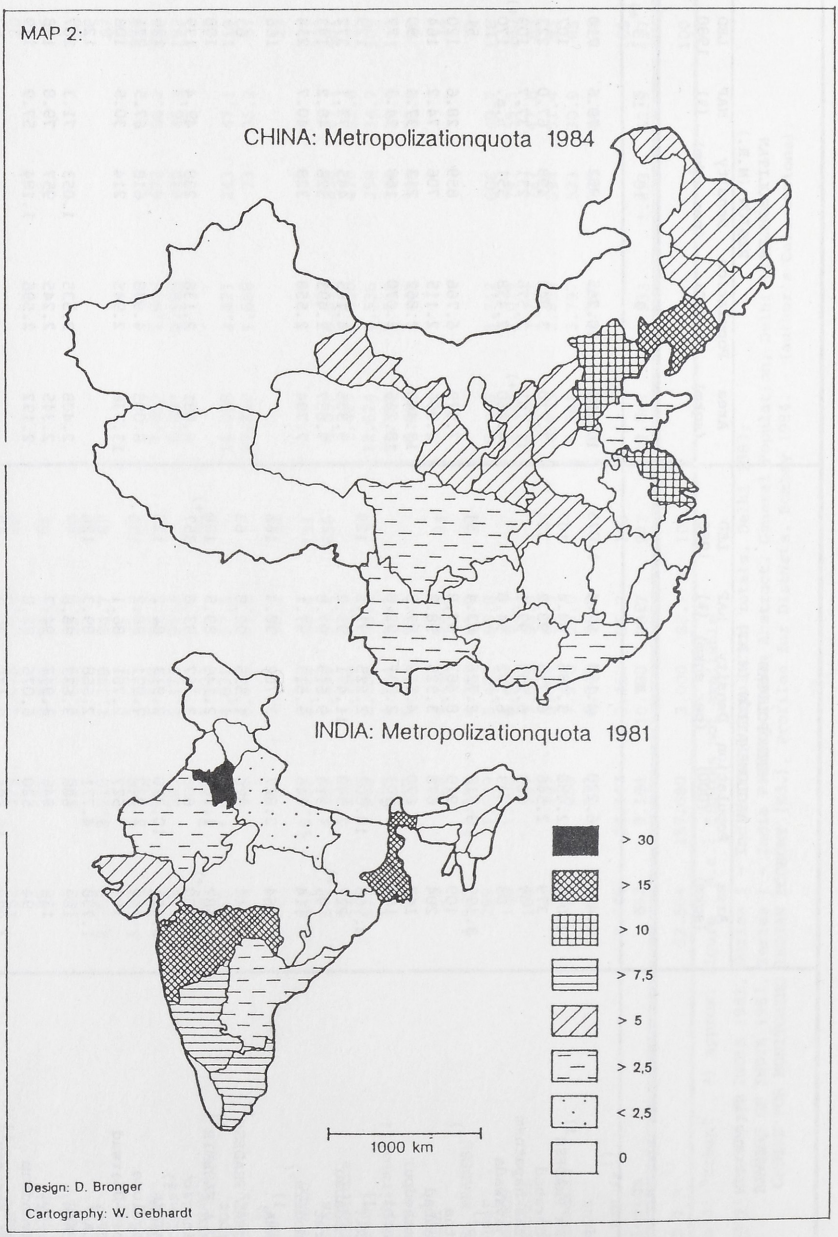
TAB. 3: AREA AND POPULATION OF METROPOLITAN CITIES IN INDIA - 1981
(N.A.P. = Non-Agricultural Population; L.E.D. = Level of Economic Development)

STATE/ Metropolis	METROPOLITAN AGGLOMERATION (M.A.)					METROPOLITAN REGION (M.R.)				
	Area (sqkm)	Population (000)	Density (per sqkm)	NAP (%)	LED 1980	Area (sqkm)	Population (000)	Density (per sqkm)	NAP (%)	LED 1980
1	2	3	4	6	7	8	9	10	12	13
DELHI	1.483	6.220	4.194	97.4	1.075	10.655	10.255	962	79.6	710
ANDHRA PRADESH[1]	4.046	12.488	3.086	84.4	107					107
Hyderabad	379	2.546	6.715	98.2	324	7.710	3.843	498	67.0	223
Vishakhapatnam	97	603	6.253	99.1		11.161	2.576	231	37.7	109
Vijayawada	83	543	6.582	94.8		4.460+)	2.458	551	n.a.	170+)
BIHAR[1]	3.199	8.719	2.726	83.4	51					51
Patna	109	919	8.463	87.8		7.879	6.766	859	28.6	120
Dhanbad	204	678	3.325	98.2		2.996	2.115	706	74.2	164
Jamshedpur	147	670	4.568	97.3		13.440	2.862	213	37.4	90
Ranchi	182	503	2.837	92.8		18.266	3.070	168	24.3	77
GUJARAT[1]	4.765	10.602	2.225	91.5	129					129
Ahmadabad	222	2.548	11.471	99.2		9.356	4.165	445	73.1	372
Surat	95+)	914	9.619	97.8		7.657	2.493	326	48.2	143
Vadodera	114	745	6.513	97.1		7.794	2.558	328	40.7	234
HARYANA[1]	764	2.827	3.702	90.4	166					166
HIMACHAL PRADESH[1]	212	326	1.535	92.8	63					63
JAMMU & KASHMIR[1]	587	1.260	2.146	89.5	108					108
Srinagar	180+)	606	3.367	93.6	357+)	8.981	2.136	238	49.4	139
KARNATAKA[1]	3.683	10.730	2.913	84.2	126					126
Bangalore	366	2.922	7.991	98.2		8.005	4.948	618	67.5	231
Hubli-Dharwad	191	527	2.761	86.1		13.738	2.945	214	30.5	106
KERALA[1]	1.788	4.771	2.668	89.3	126					126
Cochin	189	686	3.633	96.8		2.408	2.535	1.053	71.3	207
Calicut	138	546	3.947	94.7		2.345	2.245	957	79.8	138
Trivandrum	94	520	6.076	92.8		2.192	2.596	1.184	57.9	119
MADHYA PRADESH[1]	4.878	10.586	2.170	86.3	62					62
Indore	114	829	7.306	97.3		10.918	2.205	202	48.3	130
Jabalpur	231	757	3.283	96.2		10.160	2.199	216	47.7	85
Bhopal	285	671	2.355	95.6		10.143	1.678	165	49.0	151
Gwalior	303	556	1.833	90.9		5.214	1.108	212	53.3	122
MAHARASHTRA[1]	5.888	21.994	3.735	92.0	163					163
Bombay	603	8.243	13.671	99.8	1.138	17.309	13.081	756	80.9	777
Pune	344	1.686	4.899	97.8		15.642	4.164	266	52.3	211
Nagpur	237	1.302	5.495	97.4		9.931	2.589	261	52.9	110
Ulshanagar	46	649	14.247	99.2		see: Bombay M.R.				
Sholapur	27+)	511	18.930	98.2		15.017	2.610	174	36.0	93
MANIPUR[1]	152	375	2.478	62.9	20					20
MEGHALAYA[1]	85	241	2.846	94.4	66					66
NAGALAND[1]	109	120	1.105	93.0	50					50
ORISSA[1]	2.288	3.110	1.359	84.7	67					67
PUNJAB[1]	1.199	4.648	3.875	89.2	220					220
Ludhiana	110	607	5.519	96.1		3.857	1.819	472	56.2	283
Amritsar	115	595	5.175	95.3		5.087	2.188	430	46.3	192
RAJASTHAN[1]	4.497	7.211	1.603		72					72
Jaipur	210	1.015	4.831	97.5		14.068	3.421	243	47.1	119
Jodhpur	79	506	6.445	97.5		22.850	1.668	73	36.2	57
SIKKIM[1]	n.a.	51	n.a.	98.3	29					29
TAMIL NADU[1]	5.861	15.952	2.722	88.4	131					131
Madras	572	4.289	7.499	97.4	656	8.033	6.893	858	67.1	461
Coimbatore	291	920	3.166	90.7		7.469	3.060	410	52.6	202
Madurai	112	908	8.108	95.2		12.624	4.536	359	34.7	109
Tiruchirapalli	145	610	4.204	93.2		11.095	3.612	326	29.9	112
Salem	98	519	5.301	93.2		8.650	3.442	398	38.8	99
TRIPURA[1]	54	226	4.146	93.5	34					34
UTTAR, PRADESH[1]	4.560	19.899	4.363	85.0	72					72
Kanpur	299	1.639	5.482	96.8		6.176	3.742	606	49.7	118
Lucknow	146	1.008	6.907	97.7		2.528	2.015	797	55.3	260
Varanasi	104	797	7.675	96.8		5.091	3.701	727	47.8	85
Agra	82	747	9.089	98.3		4.805	2.853	594	51.4	93
Allahabad	82	650	7.910	96.0		7.261	3.797	523	30.9	65
Meerut	81	537	6.640	95.8		3.911	2.767	708	44.3	128
WEST BENGAL[1]	2.646	14.447	5.460	95.7	103					103
Calcutta	852	9.194	10.788	98.7	942	22.783	23.533	1.033	62.9	427+)
I N D I A [1]	52.564	157.680	3.000	88.7	100					100

1) Total "urban" +) approx. figure n.a.: figures not available

Sources: CENSUS OF INDIA 1981, Series 1 - India. Final Population Totals, Delhi 1983;
CENSUS OF INDIA 1981, Series 1 - India Primary Census Abstract. General Population, Delhi 1983;
CENTRE FOR MONITORING INDIAN ECONOMY (Ed.), Profiles for Districts, Bombay 1984. - (author's Calculations).

MAP 2:



Design: D. Bronger

Cartography: W. Gebhardt

2.2.2 Metropolization: Urbanization - Ratio

Regarding the *present* picture, number and population of cities resp. urban agglomeration/towns according to size class are as follows:

Tab.4: Metropolization/Urbanization Quota in China (1984) (24) and India (1981)
(MQ = Metrpolization Quota; UQ = Urbanization Quota)

	CHINA			INDIA		
Size class	No.	Population* (000)	M/UQ %	No.	Population (000)	M/UQ %
>1 Mill.	20	44,470	4.3	11	42,612	6.2
>500,000	30	22,130	2.1	30	19,829	2.9
>100,000	176	39,120	3.8	175	31,852	4.6
TOTAL	226	105,720	10.2	216	94,293	13.7
> 50,000				270	18,192**	2.8
> 20,000	69	4,650***	0.5	739	22,414**	3.4
< 20,000				2020	21,290**	3.2
TOTAL	295	111,370***	10.7	3245	156,189	23.7

* Non-agricultural population
** Excludes Jammu & Kashmir and Assam
*** Compare: Orleans/Burnham 1984, Tab.2 and 5.
Sources: India: See Tab.3
China: Statistical Yearbook 1985, p.189 (author's calculations)

In general, the data reveal a similar picture, although the metropolitan resp. urban quota is (of > 100,000 inhabitants) almost 50% resp. 27% higher in India.

Detailed data of the u r b a n i z a t i o n p r o c e s s with regard to size class of towns, valid for a long-duration period exists only for India.

Tab.5: Urbanization Ratio 1901-1981:
India - Per Cent Distribution of Total Urban Population by Size Class of Towns

Size class	Percentage of total urban population 1901	1921	1941	1961	1981
> 1 Mill.	5.8	11.2	12.1	23.0	27.3
>100,000	19.9	18.2	25.8	27.8	33.1
> 50,000	11.3	10.4	11.4	11.0	11.6
> 20,000	15.8	16.1	16.6	17.4	14.4
< 20,000	47.2	44.1	34.1	20.8	13.6
TOTAL	100.0	100.0	100.0	100.0	100.0

Source: Census of India 1901-1081 (author's calculations).

The compiled data (Tab.5) (25) demonstrate the rapid increase of the metropolitan population's share of the urban population as a whole: in comparison with the pyramid of 1901 the composition of 1981 shows an almost reversed proportion. Taking into account only the population living in communities of 20,000 and more as "urban" (as this seems more sensible) the metropolitan share would increase even to 31.6%.

2.2.3 Growth of metropolitan cities

Since one has to be very cautious with regard to the population figures of the Chinese metropolises before 1953, in our brief analysis we will concentrate on the development of the last three decades. To begin with, from the compiled data (Tab.6 and 7) we can again gather a number of common characteristics. First of all there is a pronounced heterogeneous fabric of metropolitan growth in both countries. On one side we find several cities with a comparatively low growth rate (Calcutta, Lucknow; Shenyang, Dalian, Fushun etc.), in China additionally three metropolises even below the nation average, topped by Shanghai.(26)

With a few exceptions this seems unique in the Third World, at least if one excludes the temporary dwellers in the metropilises. On the other side various metropolises show a decided dynamics even in comparison to the fast growing metropolitan cities of the Far East like Bangkok, Djakarta, Manila and Seoul (27): Delhi, Bangalore and Jaipur in India; in China the interior provincial capitals of Xi'an and Chengdu topped by Lanzhou with an equally extraordinary growth as Bangalore, the number one in India.

All in all, however, the differences predominate. First of all the growth of the larger metropolises is considerably slower in China, especially with regard to the metropolises along the coastal areas, surprisingly even the capital of Beijing shows a more moderate growth.(28) As indicated by a number of authors (29) this fact manifests that the rapid growth of the metropolitan cities all over China, due mainly to heavy immigration, up to 1958 has considerably slowed down in the majority of cities, that means that the official policy appeared successfull in its efforts to contain the growth of the very largest cities (Shanghai, Beijing, Tianjin, Shenyang, Guanzhou, Chongqing) substantially and "to redirect the main focus on urban development to newer cities of the interior".(30) This unquestionable success of "urban (metropolitan) decentralization" (31) should not be overinterpreted because to some extent it seems double-edged. A more detailed view reveals firstly, that more than half the number of Chinese metropolises show a still noticeable increase of 30% and more above national average. Secondly, quite some coastal metropolises manifest a recovering metropolitan growth since the second half of the seventies. Taking Shanghai as an example because the most detailed though not indisputed (32) figures are available here: After an impetious growth up to 1960 the city's growth rates have not only been reduced drastically since 1960 but decreased by almost one million from 1965 to 1977.(33) However, it increased again by 1.4 mill. from 1977 to 1984 (from 5.470 to 6.881 mill.) mainly caused by a net immigration of 138,200 on an average per year for the period of 1978-1980.(34) Thirdly, this spatial re-direction had to be paid for, may be even dearly, by a pronounced primacy of the rapid growing metropolitan capitals of the interior like Lanzhou etc. causing a remarkable metropolitan-rural development incline within these provinces, with which we will deal in the next chapter. - To sum up: Despite some success in limiting the metropolitan growth especially in China, this struggle still remains a major challenge for both countries.

3. The Functional Dimension

3.1 The Primacy: Main Characteristics

In our introductory chapter we stressed the functional primacy or, in short, the *primacy* as the vital component of our concept of metropolization. Primacy itself is characterized by two main features (35):

(i) Over-centralization or, more correctly, over-concentration of the main functions - here defined as *primacy indices* - in almost every sphere of life; and - what is of specific importance -

(ii) the concentration of population which is already particularly high (metropolization quota = MQ) is by far surpassed by the figures of the indices for every other sector, i.e. the economic (except, of course, the primary sector), social, cultural, political and admini-

TAB. 6: POPULATION GROWTH OF METROPOLITAN CITIES IN CHINA 1900 - 1984

No	Metropolis	1900	1920	1930	1938	1948	1953	1958	1970	1984	Growth 1953-1984 CHINA=100
1	Shanghai	950[1]	1.539	3.122[5]	3.595	5.020[11]	6.204	6.977	5.802	6.881	43
2	Beijing	728[1]	1.181	1.369[5]	1.574	1.672[11]	2.768	4.148	5.000	5.755	142
3	Tianjin	100	839[2]	1.392[6]	1.223	1.708[11]	2.694	3.278	3.600	5.312	128
4	Shenyang		250[2]	527[7]	772	1.121	2.300	2.423	2.800	4.135	105
5	Wuhan		750[2]	1.584[5]	1.242	1.062	1.427	2.226	2.560	3.338	176
6	Guangzhou		. [3]	830[8]	1.022	1.413[11]	1.599	1.867	2.500	3.222	134
7	Chongqing		351[2]	298[5]	528	1.003[12]	1.773	2.165	2.400	2.734	71
8	Harbin		200[3]	320[8]	468	760	1.163	1.595	1.670	2.592	162
9	Chengdu		423[2]	441[9]	458	727	857	1.135	1.250	2.540	258
10	Xi'an		. [2]	188[5]	218	503	787	1.368	1.600	2.277	249
11	Nanjing		300[2]	522[8]	440	1.137[11]	1.092	1.455	1.750	2.208	134
12	Taiyuan		80[2]	139	177	252[11]	721	1.053	1.350	1.838	204
13	Changchun		70[4]	. [6]	360	630[11]	855	988	1.200	1.809	147
14	Dalian		237[2]	586[8]	504	723[11]	892	1.590	1.650	1.588	103
15	Lanzhou		110[2]	103[9]	122	204[11]	397	732	1.450	1.455	351
16	Jinan		300[2]	437[5]	472	591[11]	680	882	1.100	1.395	138
17	Kunming		.	170	184	300	699	900	1.100	1.355	124
18	Anshan		.	. [10]	120	166	549	833	1.050	1.259	170
19	Qingdao		131	318[6]	592	788	917	1.144	1.300	1.230	45
20	Fushun		181	118	215	513	679	1.019	1.080	1.220	105

. no figure available

1) 1913; 2) 1922; 3) "Xian administrative area; 4) 1926: Dairen only; 5) 1929; 6) 1936; 7) 1927; 8) 1934; 9) 1935?; 10) 1928; 11) 1946; 12) 1947;

Sources: 1900 : MURPHEY, 1953 (Shanghai); CHANG, 1965 (Beijing).
1920 : Chinese Yearbook 1923; TREWARTHA, 1951
1930 : Chinese Yearbook 1943; TREWARTHA, 1951
1938 : ULLMAN, 1961
1948 : ULLMAN, 1961; TREWARTHA, 1951
1953 : SHIGER, 1953
1958 : ULLMAN, 1961; CHEN, 1966
1970 : CHEN, 1973
1984 : Statistical Yearbook of China - 1985

TAB. 7: POPULATION GROWTH OF METROPOLITAN CITIES IN INDIA 1901 - 1981

No Metropolis	1901	1911	1921	1931	1941	1951	1961	1971	1981	Growth 1901-81 INDIA=100	Growth 1951-81 INDIA=100
1 Calcutta[1)]	1.488	1.718	1.851	2.106	3.578	4.589	5.737	7.031	9.194	276	111
2 Bombay[2)]	928	1.139	1.380	1.398	1.801	2.994	4.152	5.971	8.243	421	195
3 Delhi[3)]	406	414	488	636	918	1.744	2.659	4.066	6.220	764	285
4 Madras[1)]	594	604	628	775	930	1.542	1.945	3.170	4.289	332	198
5 Bangalore[1)]	159	189	237	306	407	779	1.200	1.654	2.922	927	349
6 Ahmadabad[1)]	186	217	274	314	595	877	1.206	1.742	2.548	678	212
7 Hyderabad[1)]	448	502	406	467	739	1.128	1.249	1.796	2.546	250	140
8 Pune[1)]	164	173	199	250	324	606	791	1.135	1.686	495	198
9 Kanpur[1)]	203	179	216	244	487	705	971	1.275	1.639	377	147
10 Nagpur[1)]	167	119	165	242	329	485	690	930	1.302	363	187
11 Jaipur[1)]	160	137	120	144	176	291	410	637	1.015	285	277
12 Lucknow[1)]	256	252	241	275	387	497	656	826	1.008	157	114

1) Urban Agglomeration 2) Greater Bombay 3) Union Territory

Sorces: CENSUS OF INDIA 1901 - 1981

strative sectors. We shall call this relationship between the pertinent primacy index (PI) and the demographic primacy index (MQ) the *Primacy Ratio* (PR); so PR = PI/MQ. In other words: The axiom PI>MQ or PR>1 must be considered the crucial attribute of metropolitan primacy.

To determine the phenomenon of "metropolization as a development problem" it is of essential importance from the development-policy aspect that the over-concentration of every major function of life has again occured - in their vast-majority - principally in the metropolises (including the capitals) of Third World countries with strictly centralist governments - just as in the majority of the European nations up to the 20th century and in the communist bloc up to the present day.

In this connection an opinion must be given on a line of argumentation which is often stressed into this discussion: The often quoted argument that a substantial number of metropolises within the western world (e.g. Paris, London) show the same pronounced primacy is true essentially only regarding the demographic aspect, at best to some of the cited functions but never (36) to this extent and totality (Tab.8).

In the literature concerned, "primacy" is simply treated as equal to the so called "primacy index" as defined by JEFFERSON (1939, p.226ff.). The "primacy index" is arrived at by computing the ratio of the population of the largest city with the next ranking or, in a system, with the combined population of a specified number of cities next in rank below the largest city.

Regarding China we can refer to CHANG (1976, p.402f.), PANNELL (1981) etc.; for India BHATTACHARYA (1976), RAZA et al. (1981) can be named in this context. In short: the whole spectrum of the term "primacy" is reduced to one particular demographic aspect.(37)

3.2 Metropolitan Primacy in China and India: Basic Results

As far as the "real" primacy of the metropolitan cities in *China* is concerned comparatively detailed information on all cities is included in the data recently released by the Chinese government.(38) Together with the data published yearly in the "Statistical Yearbook" we get the most comprehensive data set in comparison not only with regard to India but to all countries of the Third World. The most relevant primacy indices for the 20 metropolises are compiled in Tab.9. Although not complete, this table contains data of almost all important dimensions: Population (I), Agriculture (II), Industry (III), Services (IV), Transport & Communication (V), Education & Health (VI), Investment (VII) and Public Finance

TAB. 8: PRIMACY OF LARGE METROPOLITAN CITIES: BOMBAY - SHANGHAI - PARIS

No.	Indicator	BOMBAY Year	GB[1]	B.M.R.[2]	SHANGHAI Year	Shiqu	Quanshi	PARIS Year	A.U.P.[3]	R.P.[4]
	State/Province		Maharashtra			Jiangsu (+ Shanghai)			France	
	Area (000 qkm)	1981	308		1984	108		1982	547	
	Population (Mill.)	1981	62.8		1984	73.8		1982	54.4	
	I DEMOGRAPHIC PRIMACY									
1	Area (sqkm)	1981	603	4.350	1984	340	6.186	1982	1.000	12.012
2	% of total area	1981	0.2	1.41	1984	0,3	5,73	1982	0,2	2,20
3	Population	1981	8.243	10.724	1984	6.881	12.048	1982	7.156	10.057
4	% of total population	1981	13,1	17,1	1984	9,3	16,3	1982	13,1	18,5
	II FUNCTIONAL PRIMACY									
5	Net Domestic Product (%)[5), 6)]	1980	33,2	38,7	1984		38,6	1981		26,8
6	NDP/Capita - Metropolis: remaining areas	1980	7:1	4,7:1	1984	6,6:1	3,2:1	1981		ca. 3:1[7)]
7	Income Tax (%)	1984[8)]	88,8					1981		39,3
8	Industry: Employment (%)	1983[8)]	45,8	56,7				1982		22,0
9	" : Gross Output Value (%)	1983[8)]	47,0	58,4	1984	39,3[9)]	52,3	1982		ca. 25,0
10	Cargo handled by Ports (%)	1981	21,0		1981	17,3[9)]			-	
11	No. of Telephones (%)	1984	78,7		1984	41,3	51,0	1983		19,9
12	University & College Students (%)	1982	40,3	40,3	1984	43,4	48,4	1974		30,8
13	Hospital beds (%)	1980	32,8	37,3	1984	19,7	29,9	1974		16,7
14	No. of Doctors (%)				1984	31,8	39,4	1982		22,0
15	TV-sets (%)	1980	82,3	91,3				1983		19,6
16	Bed capacities of 3-, 4- & 5-star hotels (%)	1983	87,4	89,2	1985	> 50[10)]		1984	16,3	
17	- de luxe category (5-star)	1983	87,4	87,4	1985	> 70[10)]		1984	44,1	

1) Greater Bombay; 2) Bombay Metropolitan Region; 3) Agglomération urbaine Parisienne; 4) Région Parisienne;
5) see Tab. 2 & 3, col. 7 & 13; 6) Explanations: see Note 47; 7) Total taxes; 8) Large & Medium Scale Industry only;
9) Export only; 10) Estimated figure

Sources: BOMBAY - Tab. 3 & 11 + GOVERNMENT OF MAHARASHTRA (Ed.), Statistical Abstract of Maharashtra State for the year 1979-80, Nagpur 1984; MIDC, Bombay (Ed.) Unpublished Records; INDIAN POSTS & TELEGRAPHS DEPARTMENT, MINISTRY OF COMMUNICATION (Ed.), Annual Report 1983-84, Delhi 1985.

SHANGHAI - Tab. 2 & 11.

PARIS - INSEE (Ed.), Tableaux Economique de L'Ile-de-France 1984, Paris 1984; CONSEIL REGIONAL d'Ile-de-France (Ed.), Panorama d 'Ile-de-France, Paris 1984; PLETSCH, A. (1981); Les Cahiers de l'Institut d'Amanagement et d'Urbanisme de la Region d'Ile-de-France, No 68-Juin 1983, Paris; SERVICES DE TOURISME MICHELIN (Ed.), Michelin France 1984, Paris.

(author's calculations)

TAB. 9: FUNCTIONAL PRIMACY OF METROPOLITAN CITIES IN CHINA I: national level (Figures in %)

No.	INDICATOR	S=Shiqu Q=quanshi	Shanghai	Beijing	Tianjin	Shenyang	Wuhan	Guangzhou	Chongqing	Harbin	Chengdu	Xi'an	Nanjing	Taiyuan	Changchun	Dalian	Lanzhou	Jinan	Kunming	Anshan	Qingdao	Fushun	Primacy Index (4-6)	Primacy Index (4-23)	Primacy Ratio (4-6)	Primacy Ratio (4-23)	Primacy Ratio (7-23)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
I	POPULATION																										
1	- Population: city proper (shiqu)	S	0.67	0.56	0.51	0.40	0.32	0.32	0.26	0.25	0.25	0.22	0.21	0.18	0.17	0.15	0.14	0.13	0.13	0.12	0.12	0.12	1.74	5.23			
	" : " & counties (quanshi)	q	1.16	0.91	0.77	0.51	0.58	0.68	1.35	0.36	0.83	0.53	0.45	0.22	0.56	0.46	0.24	0.33	0.32	0.25	0.60	0.20	2.84	11.31			
II	ECONOMY: AGRICULTURE																										
2	- Gross agricultural output value	S	0.00	0.25	0.39	0.35	0.12	0.16	0.11	0.07	0.16	0.10	0.08	0.11	0.08	0.12	0.04	0.06	0.07	0.04	0.05	0.03	0.64	2.39	0.37	0.46	0.50
		q	1.43	1.01	0.89	0.57	0.48	0.60	0.94	0.18	0.84	0.42	0.45	0.16	0.71	0.57	0.10	0.36	0.22	0.30	0.85	0.14	3.33	11.22	1.17	0.99	0.93
	ECONOMY: INDUSTRY																										
3	- Gross industrial output value	S	7.97	3.75	3.49	1.86	1.84	1.69	1.13	0.96	0.95	0.84	1.24	0.76	0.70	1.00	0.71	0.72	0.54	0.88	0.98	0.74	15.21	32.75	8.74	6.26	5.03
		q	10.59	4.01	3.58	1.90	1.96	1.90	1.65	1.08	1.19	0.95	1.39	0.77	0.77	1.31	0.77	0.78	0.64	0.98	1.21	0.78	18.18	38.21	6.40	3.38	2.36
4	-- Light industry	S	8.78	3.23	3.97	1.34	1.71	2.20	1.05	0.87	0.77	0.85	0.91	0.42	0.51	0.72	0.35	0.79	0.55	0.26	1.22	0.21	15.98	30.71	9.18	5.87	4.22
		q	11.96	3.54	4.08	1.39	1.86	2.47	1.55	1.06	1.06	0.96	1.05	0.43	0.59	1.07	0.36	0.85	0.57	0.33	1.51	0.24	19.58	36.93	6.89	3.27	2.05
5	-- Heavy industry	S	7.18	4.26	3.02	2.37	1.96	1.19	1.21	1.05	1.12	0.84	1.57	1.10	0.89	1.28	1.06	0.64	0.53	1.50	0.74	1.25	14.46	34.76	8.31	6.65	5.82
		q	9.24	4.46	3.08	2.40	2.06	1.34	1.74	1.10	1.29	0.94	1.71	1.11	0.94	1.54	1.17	0.71	0.71	1.61	0.91	1.31	16.78	39.37	5.91	3.48	2.67
6	-- Metallurgical industry	q	14.38	4.87	3.65	2.64	5.29	1.28	2.41	0.80	1.82	0.35	0.77	2.52	0.20	0.97	1.51	0.51	1.59	7.05	0.41	1.09	22.90	54.11	8.06	4.78	3.68
7	-- Chemical industry	q	11.60	6.62	4.56	2.08	1.39	3.14	1.92	0.91	1.26	0.78	1.82	0.82	0.56	1.57	1.15	0.84	0.83	0.23	2.03	0.37	22.78	44.48	8.02	3.93	2.56
8	-- Machine building industry	q	13.48	4.81	4.22	3.60	2.03	2.59	2.00	1.66	1.60	1.61	1.77	0.73	1.68	1.60	0.61	0.87	0.63	0.57	1.16	0.32	22.51	47.54	7.93	4.20	2.96
9	-- Textile industry	q	15.32	2.59	4.39	0.73	1.98	1.13	1.32	0.77	0.78	1.39	0.91	0.36	0.26	1.04	0.32	0.86	0.41	0.36	1.79	0.22	22.30	36.93	7.85	3.27	1.73
10	-- Clothing industry	q	13.61	6.31	4.64	2.02	2.96	2.23	1.24	1.03	1.41	1.08	1.90	0.48	0.89	1.87	0.61	0.83	0.50	0.48	1.54	0.28	24.56	45.91	8.65	4.06	2.52
11	-- Paper & educational articles	q	12.92	6.70	4.59	1.60	1.62	2.84	1.38	0.87	1.74	0.79	0.89	0.43	0.71	0.51	0.28	1.27	0.45	0.18	1.09	0.26	24.21	41.12	8.52	3.64	2.00
	ECONOMY: SERVICES																										
12	- Total value of retail sales	S	2.84	2.40	1.41	1.07	0.90	1.37	0.60	0.77	0.55	0.57	0.61	0.39	0.51	0.48	0.38	0.42	0.38	0.30	0.39	0.28	6.65	16.62	3.82	3.18	1.18
		q	3.92	3.01	1.68	1.22	1.13	1.82	1.22	0.88	1.06	0.74	0.87	0.43	0.88	0.86	0.42	0.57	0.51	0.45	0.81	0.36	8.61	22.84	3.03	2.02	1.68
III	TRANSPORTATION & COMMUNICATION																										
13	- Cargo handled at principal seap.	S	32.76	-	5.24	-	-	5.43	-	-	-	-	-	-	-	13.07	-	-	-	-	8.06	-	38.00	64.56	21.84	12.34	7.61
14	- Tourists: Foreigners	S	16.61	20.58	1.63	0.55	1.44	17.62	1.17	-	-	5.48	3.60	0.18	-	0.97	-	-	-	-	-	-	38.82	69.83	22.31	13.35	8.91
15	- Telephones	S	4.67	4.44	1.77																		10.88		6.25		
		q	5.76	4.49	1.83																		12.08		4.25		
IV	EDUCATION AND HEALTH																										
16	- Students enrolled in institutions of higher learning	S	5.78	7.21	2.84	2.48	5.03	3.01	2.12	2.25	2.26	3.82	3.55	1.70	2.55	1.85	1.33	1.73	1.51	0.18	0.60	0.17	15.83	51.97	9.10	9.94	10.36
		q	6.44	7.38	2.84	2.48	5.03	3.01	2.23	2.35	2.45	3.82	3.55	1.70	2.55	1.85	1.33	1.73	1.56	0.18	0.60	0.17	16.66	53.25	5.87	4.71	4.32
17	- Hospital beds	S	1.62	1.43	0.94	0.87	0.87	0.68	0.63	0.73	0.58	0.58	0.43	0.68	0.47	0.36	0.42	0.44	0.48	0.33	0.29	0.31	3.99	13.14	2.29	2.51	2.62
		q	2.46	1.60	1.10	0.87	1.03	0.93	1.39	0.86	1.06	0.79	0.61	0.73	0.71	0.75	0.46	0.53	0.64	0.49	0.58	0.40	5.16	17.99	1.82	1.59	1.51
18	- Professional medical personal	S	2.40	2.47	1.58	1.16	1.16	1.11	0.78	0.82	0.82	0.76	0.73	0.66	0.62	0.45	0.48	0.57	0.52	0.39	0.45	0.30	6.45	18.23	3.71	3.49	3.38
		q	3.06	2.67	1.78	1.23	1.37	1.38	1.50	0.91	1.28	0.97	0.86	0.69	0.85	0.71	0.52	0.67	0.68	0.50	0.68	0.38	7.51	22.69	2.64	2.01	1.79
19	- doctors	S	2.83	2.78	1.62	0.97	1.10	1.17	0.77	0.86	0.85	0.80	0.75	0.68	0.64	0.42	0.50	0.66	0.60	0.34	0.46	0.23	7.23	19.03	4.16	3.64	3.38
		q	3.51	3.02	1.85	1.02	1.25	1.40	1.52	0.95	1.33	1.04	0.87	0.72	0.82	0.63	0.53	0.76	0.78	0.43	0.67	0.28	8.38	23.38	2.95	2.07	1.77
V	INVESTMENT																										
20	- Investment in capital constr.	S	4.95	4.18	2.94	1.07	1.00	2.13	0.70	0.75	0.76	0.87	1.18	1.21	0.61	0.73	0.63	0.36	0.47	0.25	0.28	0.32	12.07	25.39	6.94	4.85	3.82
		q	6.38	4.68	2.96	1.08	1.03	2.25	1.02	0.84	0.86	0.95	1.21	1.22	0.64	0.90	0.72	0.37	0.63	0.26	0.29	0.35	14.02	28.64	4.94	2.53	1.73
21	- Foreign capital invested	q	7.92	7.46	3.09	0.55	0.53	9.88	0.31	0.04	0.54	-	0.02	0.00	-	0.30	0.20	0.05	0.11	-	1.18	0.39	18.47	32.57	6.50	2.88	1.66
VI	PUBLIC FINANCE																										
22	- Financial revenue	S	9.86	2.89	2.61	1.14	0.94	1.37	0.70	0.47	0.56	0.32	0.75	0.40	0.33	0.31	0.28	0.46	0.40	0.73	0.81	0.04	15.36	25.37	8.83	4.85	2.87
		q	10.93	3.11	2.73	1.15	1.00	1.48	0.95	0.51	0.69	0.38	0.83	0.41	0.37	0.33	0.30	0.50	0.47	0.76	0.95	0.04	16.77	27.89	5.90	2.47	1.31

Sources: see TAB 2 (author's calculations).

(VIII). All in all these 8 dimensions are subdivided into 22 single indicators most of them separated according to the *shiqu* and *quanshi* figures (col.3). The data are proportionately computed according to the *national* level. - Their interpretation will be summarized into the following main topics (BRONGER 1984, p.145):

(i) First and foremost the eminent primacy ratio with respect to the three large metropolises in particular (Shanghai - Beijing - Tianjin, Tab.9, cols.24 & 26) and less but still pronounced regarding the remaining 17 metropolises (col.28) reveals an up to the present strong primacy of these metropolitan cities.

(ii) The primacy is particularly pronounced, as could be expected, in the secondary sector, even outstanding in certain single industrial branches. This is expecially relevant for important consumer goods regarding our three major metropolitan cities as indicated in Tab.10:

Tab.10: Proportion of Output of Major Industrial Products of Metropolitan Cities* in China - 1984

Product	Shanghai	Beijing	Tianjin	Primacy Index	Primacy Ratio
Sewing machines	31.5	4.8	10.0	46.3	16.3
Bicycles	19.6	0.2	18.3	38.1	13.4
Wrist watches	29.0	3.6	9.8	42.4	14.9
Chemical fibres	24.0	5.8	7.1	36.9	13.0
Cloth	11.1	2.0	3.3	16.4	5.8
Woollen piece goods	18.9	7.9	6.0	32.8	11.5
Leather shoes	9.7	4.7	6.7	21.1	7.4
Washing machines	10.6	8.9	1.8	21.3	7.5
Radio sets	24.2	3.5	1.7	29.4	10.4
TV sets	22.2	5.9	6.1	34.2	12.0
Cameras	35.2	4.2	7.4	46.8	16.5
Motor vehicles	2.9	11.3	3.2	17.4	6.1
Tractors**	21.7	-	20.6	42.3	14.9

* Provincial level

** 20 horse power and over

Source: Statistical Yearbook of China - 1985, p.350ff. (author's calculations).

Compared with this, a more surprising feature is the still high concentration in the educational sector particularly with regard to the university and college level: more than 50% of the country's total enrollment (no.16, col.25) resulting a primacy ratio of almost 10% !

(iii) The historically grown core regions including the North-Eastern Region (former Manchuria) - out of our 20 only 3 relatively minor ones (Taiyuan, Lanzhou and Kunming) - still show a heavy *regional* concentration of metropolitan primacy. This reveals that the governmental policy of deconcentration is to be viewed as only partly successful.

(iv) This seemingly far-reaching statement is supported by the up to now outstanding primacy of *Shanghai* compared to all other metropolitan cities. It exceeds the next ranking metropolis, the capital city of Beijing, in 40 out of the 46 single indicators (Tab.9 & 10). In 9 cases the primacy index amounts to more than double, in 5 more than triple and in even 9 indicators it surpasses the capital city by more than 5-times! All in all, Shanghai has to be considered as the absolute economic center of the subcontinent: its GNP/capita (of Shanghai province!) exceeds the national average by 6-times (39) in 1980, (according to our calculations by 5.2-times in 1984 - Tab.2, col.13) - a high factor when compared to Manila (3:1), Bangkok (3:1) and Seoul (2:1) (40), the three most outstanding primate cities in the Far East! (41)

In most aspects these statements find their confirmation when compared to the large I n d i a n metropolitan cities (Tab.11).(42) Like in China we can find a functional partitioning here too: Analogous to Shanghai, Bombay represents the outstanding economic center of the subcontinent (see: Indicator No.8,9,10,11 & 13) whereas Delhi's role as the capital is illustrated inter alia by the fast growing number of high-standard hotels.

*

Based on the per capita income as an important or at least a widely used indicator of economic development China and India show an almost equal extent of *regional* variation of development (Map 3): India with a ratio of 3.14 : 1 (Punjab : Bihar), China with an even higher 3.38 : 1 ratio (Liaoning : Guizhou). It should be noted that this variation is already quite high when compared to the industrialized nations. In the USA this ratio amounts to 1.9 : 1 and in West Germany even only to 1.3 : 1 (43) - apart from the fact that the level of economic development is far higher in these countries.

TAB. 11: PRIMACY OF LARGE METROPOLITAN CITIES (> 5 Mill.) - INDIA : CHINA

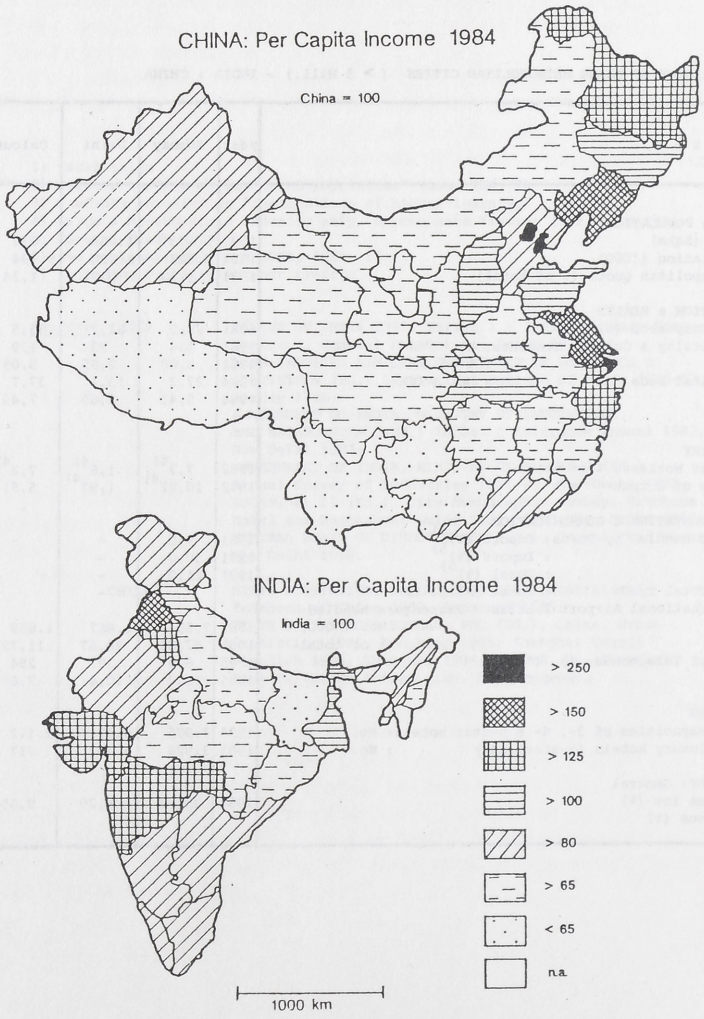
Indicator	year	Bombay	Delhi	Calcutta	year	Shanghai	Beijing	Tianjin
I AREA & POPULATION								
1 Area (Sqkm)	1981	603	1.483	852	1984	340[1]	2.738[1]	4.276[1]
2 Population ('000)	1981	8.243	6.220	9.194	1984	6.881[2]	5.755[2]	5.312[2]
3 Metropolitan Quota (% of total)	1981	1,20	0,91	1,34	1984	0,65[3]	0,48[3]	0,40[3]
II EDUCATION & HEALTH								
4 Literacy rate (%)	1981	68,2	62,7	65,5	1982	91,5	92,6	91,5
5 University & College Students: No. ('000)	1981	134	73	139	1984	81	101[4]	40[4]
: % of total	1981	4,88	2,65	5,05	1984	5,78	7,21[4]	2,84[4]
6 Hospital Beds : No. ('000)	1984	27.2	13.1	37.7	1984	35.1	30.9	20.3
	1984	5,41	2,60	7,49	1984	1,62	1,43	0,94
III INDUSTRY								
7 No. of Workers: % of total	1982	7,3[5]	1,6[5]	7,2[5]	1981	5,2	2,9	2,6
8 Value of Output: - " -	1982	10,82[5]	1,97[5]	5,51[5]	1985	7,97	3,75	3,49
IV TRANSPORTATION & COMMUNICATION								
9 Cargo handled by Ports: Export (%)[6]	1981	9,0	-		1981	17,31	-	
: Import (%)[6]	1981	30,0	-			6)	-	
: Total (%)[6]	1981	21,0	-			6)	-	
-.- Total Trade : Total (Mill. t)			-		1984	100.66	-	16.11
10 International Airport Traffic - Passengers handled:								
No. ('000)	1985	7.597	4.867	1.859	1984	620[8]	1.090[8]	10[8]
% of total	1985	47,88	30,67	11,72	1984	10,40[8]	18,29[8]	0,17[8]
11 No. of Telephones: No. ('000)	1985	605	387	284	1984	130	123	49
: % of total	1985	16,3	10,4	7,6	1984	4,7	4,4	1,8
V TOURISM								
12 Bed capacities of 3-, 4- & 5-star hotels: No.	1983	7.575	9.811	2.112	1985	5.659		
- luxury hotels (5-star) only : No.	1983	3.924	4.403	717	1985	1.241		
VI ECONOMY: General								
13 Income Tax (%)	1984	25,63	8,29	9,55				
Revenue (%)					1984	9,86	2,89	2,61

1) total shiqu
2) relates to "Non-agricultural population" (see: TAB. 2)
3) Students enrolled in "institutions of higher learning"
4) Large & Medium Scale Industry only. Approximate figures (for Calcutta)
5) Foreign Trade only
6) see explanations in: HANDKE, 1986: 17 f.
7) including Domestic airport traffic

Sources: INDIA CENSUS OF INDIA 1981, Series 1 - India. Primary Census Abstract. General Population, Delhi 1983;
TATA SERVICES LIMITED, DEPARTMENT OF ECONOMICS & STATISTICS (Ed.) Statistical Outline of India 1986-87, Bombay 1986;
GOVERNMENT OF INDIA, MINISTRY OF INFORMATION AND BROADCASTING (Ed.) India. A Reference Annual 1982, New Delhi 1982;
GOVERNMENT OF INDIA, MINISTRY OF PLANNING (Ed.) Annual Survey of Industries 1981-82, New Delhi 1985;
ESCAP, et al (Ed.), City Monographs: Bombay, Yokohama 1982;
Hotel and Restaurant Guide India 1983, New Delhi 1983;
CENTRAL BOARD OF DIRECT TAXES (Ed.), Unpublished Records, New Delhi 1986.

CHINA: STATE STATISTICAL BUREAU, PRC (Ed.),Statistical Yearbook of China 1985, Hongkong 1985;
STATE STATISTICAL BUREAU, PRC (Ed.), China. Urban Statistics 1985, Hongkong 1985; Shanghai Tongji Nianjian 1986, Shanghai 1986; HANDKE, W., Shanghai. Eine Weltstadt öffnet sich, Hamburg 1986.

MAP 3:



Design: D. Bronger

Cartography: W. Gebhardt

These results, however, veil significantly the urban-rural development incline, especially between the larger metropolitan cities and the remaining predominantly rural and thus agriculturally structured regions. This aspect leads us to the second spatial component of the phenomenon "metropolization". So far the metropolization resp. the primacy of the metropolitan cities in China and India have been discussed within the *national* context. Such reflections, however, overlooks the fact that India and China are each, not only a country resp. a state politically but also a continent with 16% resp. 22% of the world's population, i.e. more than the next ranking four (USSR, USA, Indonesia, Brazil) resp. seven (& Japan, Bangla Desh, Pakistan) states combined. As the primacy of London or Paris, Bangkok or Manila is never discussed in relation to Europe resp. SE-Asia we have to examine the primacy of the Chinese and Indian metropolitan cities also within their *regional* context which corresponds demographically already to the largest states: the federal state of Uttar Pradesh in India would rank equal to Japan on 7th place and the province of Sichuan on 8th rank among all countries of the world. Five Chinese (44) and three Indian (45) provinces resp. states would exceed all European as well as SE-Asian states.

A number of relevant primacy indices for Chinese metropolises are therefore computed according to the provincial level (Tab.12). The analysis reveals at least two kinds of results:

Firstly: The primacy of the Chinese metropolitan cities within their province is to be considered as highly pronounced with almost no exception. In computing the primacy ratio it even comes close to the primacy indices of the three before mentioned outstanding primate cities in respect of most of the sectors - a certainly surprising result despite the limitation and also superficiality of such a brief comparison.

Secondly: Particularly the fact that we find a specific clear-cut primacy (Lanzhou!) in the newly developed "interior" regions (Shanxi, Shaanxi, Yunnan and expecially Gansu) discloses at the same time a pronounced metropolitan-rural development incline *within* the regions of China.

Although such detailed data are not available for India we can observe the same phenomenon for Indian metropolitan cities too. Based on approximate per capita income figures (46) the following compilation gives at least an idea of the striking difference regarding the economic development between the larger metropolitan cities and "their" surrounding region - in comparison with the metropolitan cities of the United States (cf. Tab.12).

TAB. 12: FUNCTIONAL PRIMACY OF METROPOLITAN CITIES IN CHINA II: Provincial Level

No.	Province/ METROPOLIS (shi)	Population (000)	M.Q.[1]	Groß Agricultural Output Val.	Groß Industrial Output Value	Total Value of Retail Sales	Students enr.i.Inst. of Higher Education	Hospital Beds	Total Doctors	Investment in Capital Construction
1	2	3	4	5	6	7	8	9	10	11
1	Jiangsu	73.760	11.65	0.71	45.49	30.78	70.10	24.79	40.17	58.16
	- SHANGHAI	6.726	9.12	-	39.36	25.33	43.43	19.63	31.76	46.95
	- NANJING	1.865	2.53	0.71	6.13	5.45	26.67	5.16	8.41	11.21
2	Hebei	72.330	12.59	8.67	61.83	38.76	73.03	32.42	43.15	62.88
	- BEIJING	4.983	6.89	3.41	32.03	24.43	52.41	19.56	27.26	36.94
	- TIANJIN	4.124	5.70	5.26	29.80	14.33	20.62	12.86	15.89	25.94
3	Liaoning	36.550	18.26	14.54	54.61	38.08	82.81	31.47	41.56	46.04
	- SHENYANG	3.173	8.68	9.33	22.67	19.12	43.81	14.68	20.58	20.82
	- DALIAN	1.334	3.65	3.24	12.21	8.61	32.76	6.08	8.86	14.23
	- ANSHAN	1.089	2.98	1.13	10.77	5.43	3.21	5.52	7.24	4.82
	- FUSHUN	1.077	2.95	0.84	8.96	4.92	3.03	5.19	4.88	6.17
4	Jilin	22.840	6.24	3.14	26.17	16.50	69.74	13.14	22.63	31.33
	- CHANGCHUN	1.425	6.24	3.14	26.17	16.50	69.74	13.14	22.63	31.33
5	Heilongjiang	32.950	6.73	2.02	21.37	18.01	59.22	16.64	21.31	14.61
	- HARBIN	2.217	6.73	2.02	21.37	18.01	59.22	16.64	21.31	14.61
6	Shanxi	26.000	5.22	4.13	31.29	15.65	65.99	18.77	19.59	25.69
	- TAIYUAN	1.356	5.22	4.13	31.29	15.65	65.99	18.77	19.59	25.69
7	Shandong	76.370	2.95	1.09	26.14	11.28	49.41	12.38	20.06	14.47
	- JINAN	1.111	1.45	0.59	11.08	5.86	36.56	7.40	11.81	8.08
	- QINGDAO	1.140	1.50	0.50	15.06	5.42	12.85	4.98	8.25	6.39
8	Hubei	48.760	5.95	2.32	35.99	19.07	80.69	16.68	21.68	26.97
	- WUHAN	2.899	5.95	2.32	35.99	19.07	80.69	16.68	21.68	26.97
9	Guangdong	61.660	4.03	3.19	32.41	16.99	72.42	13.20	22.44	26.62
	- GUANGZHOU	2.486	4.03	3.19	32.41	16.99	72.42	13.20	22.44	26.62
10	Sichuan	101.120	3.51	3.15	37.37	17.17	65.01	14.28	18.05	34.16
	- CHONGQING	2.031	2.01	1.27	20.33	8.94	31.46	7.44	8.59	16.30
	- CHENGDU	1.523	1.50	1.88	17.04	8.23	33.55	6.84	9.46	17.86
11	Shaanxi	29.660	5.68	4.66	40.94	25.64	78.41	20.41	24.07	36.31
	- XI'AN	1.686	5.68	4.66	40.94	25.64	78.41	20.41	24.07	36.31
12	Gansu	20.160	5.68	3.59	50.73	27.87	84.20	25.42	25.35	36.87
	- LANZHOU	1.145	5.68	3.59	50.73	27.87	84.20	25.42	25.35	36.87
13	Yunnan	33.620	3.21	2.90	36.03	17.49	84.26	15.88	20.31	25.51
	- KUNMING	1.080	3.21	2.90	36.03	17.49	84.26	15.88	20.31	25.51

1) shiqu: non-agricultural population; col. 4 - 11: Figures in %
Sources: See TAB. 2

As far as India is conerned the theorem of a positive correlation between the size of the metropolis and the extent of the (economic) development disparities apparently seems to be valid. The ratio between Bombay and the district with the lowest index value amounts to 24:1. The respective ratios for Calcutta, Madras, Hyderabad and Lucknow are 22:1, 19:1, 14:1 and 8:1 respectively. As far as China is concerned comparable complete figures are so far available only for two privinces - Jiangsu and Liaoning - both on top of the level of development (Map 3; Tab.2). At least the four (47) cited metropolitan cities similarly show a far above national as well as provincial economic development level topped by the largest metropolis Shanghai (see also: Tab.2, col.7). - In contrast to our Indian and Chinese metropolitan cities those of the USA present a completely different picture with an almost equal level of development especially regarding their concerned states (col.6). It seems we can deduce from these results another theorem i.e. a causal connection between the level of development of a certain country and the dimension of the primacy of the concerned metropolis(es).

4. Reflections for Future Research

Our results manifest that the economic primacy of the metropolises of our two subcontinental states, India and China, continues to be outstanding and unbroken up the the present - especially in comparison with the metropolises of the industrialized nations of the western world. In other words: It seems that the efforts of both governments towards the reduction of the regional disparities cannot be considered as successful yet.

This conclusion, however, is linked directly with the decisive question which in the last analysis has remained unsolved: What role does the metropolis play in a country's overall development process? In what way does it impede or encourage the development of the other regions of the country? Is HOSELITZ's paradigm of "generative" versus "parasitic" cities, i.e. of the development-promoting effect of the cities in the industrialized nations as compared with their parasitical nature in the Third World countries fully valid? To explain this by means of a concrete example: On the one hand, the brain drain not only from the surrounding areas but, as far as the large metropolises are concerned, from vast parts of the entire country undoubtedly deprives an important resource of development out of these regions with the parallel of a threatening socio-economic polarization between the metropolitan and the rural scene. On the other hand, the share of income tax of Bombay as the number-one economic center amounts to more than 25%, together with Calcutta and Delhi to almost 45% of entire India (Tab.11) - i.e. the development budget of the different governmental levels for the regions lagging behind is financed to a large degree by the funds produced by the metropolitan cities. From this point of view the surrounding backward regions are of parasitical nature and not the metropolitan cities.(48)

This means that the investigation of tax systems (including the legislation concerned) plus the investment policy should be a major objective of metropolitan research and thus of developing-country-research in the future.

Finally, these reflections lead us to the question of whether the emergence of a metropolis with its pronounced primacy is an inevitable but passing stadium in the process of development and, accordingly, depends upon the level of development so far achieved by a country. Was it possible for only one dominant city or metropolis - and accordingly a few in the subcontinental states - to evolve at that early stage of development (London, Paris and subsequently Berlin - up to 1945 - can be cited as historical parallels) and is this burden lessened only *after* a higher standard of development has been achieved?

Notes

(1) North-America, Europe, Soviet-Union, Japan, Australia & New Zealand.
(2) For the following see more in detail: BRONGER, 1985, p.71ff.
(3) The arbitrary quality of each delimitation is unquestionable. There is also no readily apparent reason for our decision of > 1 mill. except that 1.000.000 is a convenient round number.
(4) LILIENTHAL, 1962, p.5, cited in: BREESE, 1966, p.7.
(5) For China and India: see Tab.6 & 7.
(6) The budget of the central Indian government is only slightly higher than the budget of North-Rhine-Westfalia, a state within West Germany.
(7) The aspect of planning has to be reserved for a special study. Regarding the example of Bombay see: BRONGER, 1986, p.48-95.
(8) Regarding the concept of "comparative regional research" see: BRONGER, 1977, p.146-175.
(9) For a detailed discussion of the following considerations see: BRONGER, 1985a, p.71-79 (for the present); BRONGER, 1985b, p.94-110 (for the past).
(10) Except for the three cities of provincial status (Beijing, Tianjin, Shanghai) the city-wise population figures of the Census 1964 have never been published (see: AIRD, 1978).
(11) In 1981, we number 2,127 *xian* (including 57 "banners") compare to 412 districts and approximately 4,500 *talukas* in India. On statistical average nearly 500,000 are allotted to one *xian* compare to ca. 150,000 to each *tahsil*.
(12) The term "urban agglomeration" is also very vaguely defined. According to the latest Census it is defined as "the continuous urban spread consisting of a core town and its adjoining urban outgrowths which may be either urban in their own right or rural"

(CENSUS OF INDIA 1981 - Series 1 - India, Paper 2 of 1981, p.23).

(13) "New China News Agency", Beijing, Sept.17, 1959; cited in: CHANG, 1965, p.319. These extensive territorial enlargements occured mainly in 1958 and 1959.

(14) INDIA: An urban place has to fulfill the following three criteria (this distinction remained almost unchanged since 1951):
- minimum population of 5,000
- at least 75% of male working population is non-agricultural
- density of population of at least 400 per sqkm (CENSUS OF INDIA, 1981).

CHINA:According to a State Council resolution passed in Nov.1955 urban areas (cities and towns) have to meet any one of the following three criteria:
- seat of a municipal people council or a people's council of the *xian* (county) level or above, regardless of population size
- minimum resident population of 2,000, at least 50% of which is engaged in non-agricultural work
- places of 1,000 to 2,000 population of whom 75% were employed in non-agricultural work (see inter alia: CHEN, 1966, p.7).

The Census of 1982 adopted a new definition: "A town is a center of industry and commerce or handicrafts with a population of over 3,000, of which more than 70 percent are not involved in agriculture; or a place with a population of 2,500 to 3,000, of which 85 percent are non-agricultural people, which are under direct administration of county government." (Cited in: ORLEANS/ BURNHAM, 1984, p.797; see also AIRD, 1983, p.615.)

(15) The shown area (Map 1) refers already to Delhi Union Territory, i.e. by far the largest area among all Indian metropolises (Tab.3, col.2). Computed to Beijing's municipal area, i.e. including the neighbouring districts of Gurgaon, Rohtak, Sonipat, Meerut and Ghaziabad (= 16,875 sqkm), Metropolitan Delhi's population would number to 13,869 million, i.e. exceed that of Beijing by 50% ! - The "Delhi National Capital Region" defined a total area of 32,500 sqkm with an approx. population of 19,5 million in 1981 (MISRA, 1981, p.239).

(16) According to DAVIS, 1959.

(17) This figure is also officially adopted as city population.

(18) More in detail see: BRONGER, 1982, p.154.

(19) Excluding the three provincial cities (see: note 10).

(20) I.e. those with more than 50,000 sqkm resp. >5 million inhabitants.

(21) Including Beijing and Tianjin; both are entirely sourrounded by Hebei province.

(22) Including Shanghai which formerly belonged to Jiangsu province.

(23) See the instructive survey of China's space-policy in: WHITNEY,

1970, p.26-72.

(24) For Chinese urban figures of earlier times see: CHEN, 1973; SKINNER, 1978. For a critical assessment of the 1953 urban figures see further: ORLEANS, 1972, p.57ff.

(25) Figures exclude Assam and Jammu & Kashmir.

(26) A major reason for this surprising result, however, is the fact that the population figures of Shanghai from 1930-1953 relate to 893 sqkm, for 1958 to 1,756 sqkm, 1970 to 223 sqkm and 1984 to 340 sqkm (for details see BRONGER, 1985b, Tab.2 and the sources cited there).

(27) The growth rates are as follows (counted as in Tab.6 & 7):
Djakarta (1961-1980): 143
Bangkok (1947-1980): 156
Manila (1948-1980): 152
Seoul (1960-1980): 228

(28) In contrast to: CHANG, 1974, p.1.

(29) Fundamentally: TIEN, 1973; further: CHEN, 1973, p.66ff.; KÜCHLER, 1976, p.140ff.; CHANG, 1976, p.401f.; PANNELL, 1981, p.3f.,101f.; BUCK, 1981, p.116f.; KWOK, 1981, p.148f.; FUNG, 1981, p.210f.

(30) MA, 1981, p.112.

(31) Especially see: BUCK, 1981, p.116; KÜCHLER, 1976, p.140f.

(32) MURPHEY, 1980, p.48. Regarding Shanghai see the very detailed compilation in: BANNISTER, 1977, p.259-263 using more than 50 different sources for the period from 1941-1975!

(33) ZUKANG, 1982, p.3.

(34) ibid., p.5.

(35) For the following see: BRONGER, 1985, p.87ff.

(36) This statement is valid for the metropolitan cities of the I.C.s of Western and Northern Europe as well as North America only. Due to their highly centralized political system the metropolises (and capital cities) of the socialist countries show a comparable pronounced primacy as those of the D.C.s. Even Tokyo has achieved a similar dominance in Japan in the course of the present century (SCHÖLLER, 1976) and this has actually resulted in "serious disturbances in the equilibrium of the socio-economic structure" (ibid. p.97).

(37) Unfortunately even up to the present "primacy" is used solely in the same, i.e. purely demographic meaning. See inter alia: LLOYD/DICKEN, 1978, pp.77ff.; HAGGETT, 1975, p.360.

(38) See the sources cited in Tab.2.

(39) ESCAP, 1982, p.113.

(40) Approximate figures for 1980.

(41) BRONGER, 1985, Tab.3.

(42) Since the coverage of some primacy indices does in some respects vary considerably from country to country - e.g. inconsistency of

the term "industry" etc. - such a comparative confrontation between metropolises of different countries is by no means unproblematic.

(43) Excluding the city states of Hamburg, Bremen and Berlin.

(44) Jiangsu, Shandong, Hebei, Guangdong, Sichuan.

(45) Uttar Pradesh, Bihar, Maharashtra.

(47) As overall economic data like NDP or per capita income doesn't exist on a district (INDIA) resp. Xian (CHINA) level we have to use an index which gives at least an approximate indicator to characterize the overall level of economic development. As far as India is concerned the CENTRE FOR MONITORING INDIAN ECONOMY, Bombay has worked out a rough proxy indicator. The nine indicators used and the set of weights for each of them is given below:

Indicator	Weight (%)	
	For all districts other than 9 districts indicated in the next col.	For 9 districts* with urban population of 72% or more
I Agriculture	50	0
1. Per capita value of output of 18 major crops; average of 1975-76 to 1979-80	25	0
2. Per capity bank credit for agriculture: June 1980	25	0
II Mining and Manufacturing	20	35
3. Number of mining and factory workers per lakh of population: 1974	8	14
4. Number of household manufacturing workers per lakh of population: 1981	4	7
5. Per capita bank credit for manufacturing sector: June 1980	8	14
III Service Sector	30	65
6. Per capita bank deposit: June 1980	10	25
7. Per capita bank credit to services: June 1980	10	25
8. Literacy (%): 1981	5	10
9. Urbanization (%): 1981	5	5
TOTAL	100	100

* The nine districts are: Greater Bombay, Calcutta, Delhi, Madras, Hyderabad, Ahmadabad, Bhopal, Chandigarh and Yanam in Pondicherry.

Regarding China, only two appropriate indicators, "gross output value of agriculture" and "gross output value of industry" are available on city (*quanshi*) level. They have been weighted on a 67:33 ratio basis. For a detailed explanation see: MACHETZKI, 1982, pp.652f. As far as the cities (*shiqu*) are concerned the figures are equally computed to the 9 urbanized districts of India.

(47) Because of their comparatively large area of >1,000 sqkm (Dalian) or even >3,400 sqkm (Shenyang, Tab.2, col.2) these metropolises have not been considered in this context (Tab.13).

(48) NISSEL, 1977, p.2.

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