

PERI-URBANIZATION: ZONES OF RURAL-URBAN TRANSITION

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Keywords: Philippines, China, Thailand, peri-urbanization, exurban, suburbanization, edge city, hyper urbanization, exurbanization

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Summary

This contribution examines the emerging phenomenon of peri-urbanization. It analyses key drivers, dynamics, and outcomes of peri-urbanization, indicating how peri-urbanization manifests itself differently in cross-country contexts. The first section provides an overview of peri-urbanization processes world-wide.

Next, the analysis focuses on East Asia. Two models of peri-urbanization that have emerged in Southeast Asia, the Thai and the Philippines model, are briefly described. Then, through an in-depth case study of the Hangzhou-Ningbo Corridor, the evolution of coastal peri-urbanization in China is discussed. The analysis focuses on the severe stresses—demographic, social, and environmental—accompanying peri-urbanization, and identifies adaptive responses, successful and otherwise, to address them.

1. Peri-urbanization

The term peri-urbanization refers to a process, often a highly dynamic one, in which rural areas located on the outskirts of established cities become more urban in character. This transformation occurs in physical, economic, and social terms, and often in piecemeal fashion. Peri-urban development usually involves rapid social change, as small agricultural communities are forced to adjust to an urban or industrial way of life in a very short time. High levels of in-migration are an important driver of social change. Rapid environmental deterioration and infrastructure backlogs are usually another characteristic of the peri-urban landscape. Typically, peri-urbanization is stimulated by an infusion of new investment, generally from outside, including foreign direct investment (FDI).

In spatial terms, Rakodi defines the peri-urban area as:

“...the transition zone between fully urbanized land in cities and areas in predominantly agricultural use. It is characterized by mixed land uses and indeterminate inner and outer boundaries, and typically is split between a number of administrative areas.”

The peri-urban zone begins just beyond the contiguous built-up urban area and sometimes extends as far as 150 kilometer (km) from the core city, or as in the Chinese case, as far as 300 km. The land that can be characterized as peri-urban shifts over time as cities, and the transition zone itself, expands outward. What frequently results is a constantly changing mosaic of both traditional and modern land use. Peri-urbanization does not necessarily result in an end state that resembles conventional urban or suburban communities. Because so much land is involved, and effective land use guidance systems are virtually non-existent in many countries, it appears that a semi-equilibrium that is neither totally urban nor suburban will result in many cases.

Key characteristics of the peri-urbanization process, particularly in developing countries, include:

- Changing economic structure, encompassing a shift from an agriculturally based to a manufacturing dominated economy;
- Changing employment structure, shifting from agriculture to manufacturing;
- Rapid population growth and urbanization, a phenomenon often not captured in official data because the populations of peri-urban regions tend to be significantly under-counted—in many countries, in-migrants do not officially register as local residents. Many peri-urban areas, furthermore, are still defined as rural, contributing significantly to an undercount of the urban population.
- Changing spatial development patterns and rising land costs.

This highly eclectic and sometimes chaotic pattern of growth produces a monumental public agenda. The pattern of peri-urbanization is often determined initially by the routes of newly built highways, but little of the subsequent growth is properly planned or regulated. A great deal of land speculation is typical, and a boom town atmosphere prevails in which unfettered change outpaces efforts to organize it. Frequently, in developing countries, the requirements of the burgeoning local population for urban

infrastructure, housing, medical services, and education are not adequately met. Environmental degradation proceeds rapidly. Industrial enterprises often have to resort to their own private infrastructure to guarantee adequate water, power, and other needs. In those peri-urban areas where in-migration from distant locales is significant, and the ratio of newcomers to long-term residents shifts radically, community building can be a major challenge. Where expectations of employment attract more job seekers than can be accommodated, or where the local poor are left behind, there also emerges in extended urban regions a need to refocus poverty prevention and alleviation efforts to the peri-urban zone.

1.1. Drivers

The trend towards the dispersal of population and employment to the peripheries of metropolitan cities is becoming a world-wide phenomenon, but the drivers tend to differ. Large-scale investment, especially in manufacturing, is usually the trigger that sets off peri-urbanization. Often foreign direct investment is the driver, but in some cases, such as China, domestic investment is more significant. Peri-urban regions are attractive to foreign and domestic investment for two main reasons. First, peri-urban regions offer large, relatively inexpensive, land plots and less hindered freight transportation, especially by truck, in support of just-in-time production processes. The need for large land plots is reinforced by investor and government preferences to group manufacturing firms in industrial estates. Industrial estates, especially high quality estates, lessen negative environmental impacts and facilitate government monitoring. These estates also provide locators with reliable infrastructure, spatial clustering of suppliers, often one-window approval services, and an intermediary, or buffer, in dealing with government officials and service providers. At the same time, peri-urban locations enable relatively easy access, usually within a 2.5 hour drive, to a major city that offers advanced producer and personal services, and access to major government decision-makers.

A second driver of peri-urbanization is public policy explicitly supporting dispersal of manufacturing away from core, and even suburban, areas. Generally the underlying rationale for these policies is to ease truck traffic, pollution, and reduce the risk of large-scale industrial accidents from manufacturing activities, in the core city. Given the large-scale capital spending involved, and thus their political sensitivity, public policies in support of peri-urbanization are often justified in terms of regional development objectives, i.e., dispersal of employment opportunities, and improvements to the quality of urban life associated with de-industrialization of core cities.

Public investment support for peri-urbanization usually includes the provision of large-scale infrastructure, such as ports, highways, rail links, telecommunication facilities, water reservoirs, container handling facilities, airports, and sometimes, publicly-owned industrial estates. These infrastructure investments, usually delivered by national governments, either through line agencies or state enterprises, are often funded through international borrowing. Increasingly, public authorities attempt to attract private investors to fund these large projects through mechanisms such as Build-Operate-Transfer. Industrial location incentive packages are usually also a component of the public policy package. Such incentives generally take the form of tariff and corporate

tax reductions to investors for a specified period of time, and often include an immigration policy component to enable expatriates to work as high level managerial and technical staff in the industries attracted to the peri-urbanizing areas.

The precise nature of peri-urbanization public policies vary among countries and over time within countries (see section 3 for more details of variation in East Asia). A striking feature common to most peri-urban areas in developing countries, however, is the lack of sufficient investment in social facilities, city building, and environmental infrastructure. For example, about 88% of cumulative public investment to 1999 in Thailand's flagship Eastern Seaboard peri-urban region has been utilized for "production support infrastructure". Frequently high quality regional plans will be developed for peri-urban areas that include proposals for quality community developments, e.g., new towns, but expected private and public sector investment often does not materialize as planned.

Another driver of peri-urbanization is the availability of relatively inexpensive labor, both in situ, in rural areas that are being enveloped by peri-urbanization, and immigrants, particularly from poor regions in the countries in question, seeking employment opportunities. Migration dynamics can be either from rural to urban or step-wise from smaller towns and cities. There is wide variation in the mix of migrant versus in situ labor employed in peri-urban areas in different countries with very significant implications for public policy and potential local conflict. Because of labor mobility, the importance of local labor availability is less important than the availability of qualified labor at virtually all skill levels within the country in question that is willing to relocate to peri-urban areas. Daily commutes from the urban core are not possible for the vast majority of labor, especially production workers, because of the long travel times. When labor migration to these regions exceeds employment opportunities, as in the case of the extended Manila region, it frequently leads to hyper-urbanization.

Residential development can also act as a driver of peri-urbanization—this process is termed suburbanization, or in cases where it jumps further out from the core, exurbanization. Middle and upper-middle class groups seeking more space at an affordable price, may purchase, and live in residences in peri-urban areas even though they do not work in the area. This driver is most important where peri-urbanization is found relatively close to the core city, or where core city personal security concerns are high, such as in Manila, Jakarta, and Johannesburg. Large property developers, often single-handedly shape peri-urban localities by building large integrated residential complexes comprising several gated housing developments catering to a range of incomes, and new commercial centers to service them. These gated communities, situated in peri-urban green fields, are essentially privately financed new towns.

Public policy to relocate slum settlements out of the center city, or to relocate rural communities for large projects, such as dams, is another important driver of peri-urbanization, e.g., in Chongqing, China. Public housing, or suitable sites and services, are not always provided, prompting settlement in fragile, and frequently dangerous, areas, such as wetlands or steep slopes. Relocation decisions rarely take into consideration the availability of employment opportunities and social services. Thus, where population relocation policies are an important factor in the peri-urbanization

process, the informal sector tends to play a much more significant role in the peri-urban economy, and access to social services by migrant populations is usually inadequate.

1.2. Global Variants

While peri-urban patterns are broadly similar, variation in the relative importance, or absence, of different drivers, how these drivers are processed by local institutions, and the socio-economic contexts in which they occur, produce different types of processes and outcomes. The following identifies five major cross-continental variants in peri-urbanization, resulting from differential drivers, economic systems, demographic conditions, and other historical development factors. Variations also occur within each region, as section 3 illustrates.

(i) Africa: Metropolitan areas in most parts of Africa, but also some parts of South Asia, are economically marginalized, having been bypassed by global growth and technological diffusion. For example, in 1998, South Asia and Sub-Saharan Africa attracted about 5 billion U.S. (United States) dollars each in FDI, compared with about 60 billion dollars each to East Asia and Latin America. As a result, the urban spatial patterns of even the largest cities in Africa have not evolved much beyond the traditional urban form. Modern urban functions are still largely confined to the center, creating mono-centric urban regions that display declining density gradients in direct relationship with distance from the city center. In Africa, peri-urbanization is driven to a much greater extent by rural migration, or hyper-urbanization, stemming from push factors such as landlessness, agricultural unemployment, resettlement, and insecurity in some rural areas. Agricultural employment, such as market gardening and farm work, and the informal economy, remain significant sources of work for migrants to African peri-urban areas.

(ii) North America: The edge city is a relatively new peri-urban phenomenon that has emerged in the last 15 years in the metropolitan regions of North America, particularly in the coastal urban regions. Edge city dynamics differ from peri-urbanization in developing countries in two respects. First, its economy is based on services, office, and commercial activities, not manufacturing. Second, although situated in outer suburbia, the edge city is politically, economically, and commercially independent of the central city. Its independence influences flows of commuters, information, goods, etc. For example, commuter flows increasingly tend to be among outer nodes, i.e. cross-commuting, rather than to and from the core city. Surprisingly, the edge city phenomenon has not arisen to any significant extent in the extended urban regions of East Asia. High value services have stayed in the core city to a much greater extent in East Asia than in North America or Europe. This is the case despite public policy attempts to disperse high value service activity in urban regions, such as Hong Kong. This, however, may change. Tokyo has long had satellite centers driven by service activity and the edge city dynamics appear to be emerging in the Beijing extended urban region.

Much farther out from the central cities, often 50 to 100 kilometers, well beyond suburbia, are industrial belts which more closely resemble the peri-urban zones in East Asia. Examples would include automobile manufacturing in Ohio and southern Ontario,

and industrial developments along the I-85 motorway in the south-east United States. The drivers behind the dispersal and location of manufacturing to these peripheral areas—a process that American researchers have dubbed exurban industrialization—are similar to the ones driving the East Asian phenomenon. Because industrialization is in relative decline in developed countries, while high values services are in ascendancy, North American exurban industrialization, in the form of industrial belts, has not attracted as much research and policy attention as emerging post-industrial urban forms and dynamics, such as the edge city.

(iii) Asia: Peri-urbanization in the emerging economies of Asia, especially Southeast Asia and selected areas of coastal China, is largely foreign-investment induced, in a process that Sit and Yang refer to as exo-urbanization. This model is based on labor-intensive, mass assembly, export-oriented industrialization. Seoul, an early case of peri-urbanization in East Asia, is a notable exception as its export-oriented industrialization has been generated by domestic rather than foreign investment, given that nation's mercantilist policies during much of the second half of the twentieth century. Public policy, based on a combination of location incentives and investment in key public infrastructure projects catering to industry, is typically influential in encouraging industrial investment outside the core city, its suburbs, and its original manufacturing belts. At the same time as this, industrialization is inducing rapid urbanization and creating economic growth in these regions, it is also increasing social inequalities and environmental problems that, left unaddressed, can eventually bring the validity of the export-led development model into question.

A unique feature commonly associated with Southeast Asian peri-urbanization is desakota, a term coined by McGee. This term describes corridor development consisting of an intense mixture of agriculture, cottage industry, industrial estates, residential development, and other uses co-existing side-by-side. It typically occurs in zones that were previously characterized by dense agricultural populations, usually engaged in rice cultivation, such as in the case of Bangkok, Thailand, and Jakarta, Indonesia. It has features distinguishable from situations where the core is situated in lightly populated regions of plantation agriculture, as in the case of Kuala Lumpur in Malaysia. There are indications, however, that the desakota pattern is less persistent than originally thought. In the case of extended Manila, there is strong empirical evidence that agriculture is being “squeezed out” of former desakota regions, a process that appears to be directly related to the labor absorption capacity of manufacturing, urban trade, and service sectors.

(iv) Latin America: Peri-urbanization in Latin America, once the standard example of hyper-urbanization, is being shaped by a new set of drivers. Having already reached very high levels of urbanization, rural to urban migration has virtually ended in Latin American countries. Suburbanization, including the relocation of slum communities, and to a much lesser extent, step-wise migration from smaller towns and cities, has become the principle drivers of residential peri-urbanization. The dualism of the core city is carrying over into peri-urban areas. Thus Latin American peri-urban patterns are characterized by the segregation of lower-income populations in the more vulnerable peripheral areas, away from privileged, gated residential developments of the middle class. The Sao Paolo and Santiago extended urban regions epitomize this model. Manila

is an interesting hybrid of the Latin American and East Asian cases—a reflection of shared historical influences with Latin America, having been a colony of Spain and then America, which shaped many of its institutions.

(v) **Transnational Metropolitan Regions:** A new variant of peri-urbanization is occurring along borders, where the core city of the extended metropolitan region is located in one country, and its peri-urban region is situated across the border in another. These transnational urban regions are driven by differential factor endowments between countries such as Hong Kong and Guangdong in Southern China, between Singapore, Johore, Malaysia and the Riau Islands, Indonesia, and between the southern USA and Mexico, where maquiladoras have arisen on the Mexican side of the border. A massive influx of FDI flows across the border into these peri-urban regions, fuels dramatic rates of both economic and demographic growth as employment opportunities, arising from this investment, attract significant numbers of migrants to the border region. McGee refers to this pattern of spatial growth in East Asia, as “the expanded city-state model,” but as the US-Mexican and the Pearl River Delta cases illustrate, it is factor complementarities, more than the spatial constraints of city-states, that drive the process. Where factor differentials between neighboring countries are greatest, this cross-border peri-urbanization is often the most dynamic, provided cross-border flows of capital and goods are politically endorsed.

1.3 What's at Stake?

Particular characteristics of developing peri-urban regions make the stakes, given the wide possible variations in outcomes, especially high. These include:

(i) **Ladders of upward mobility.** Manufacturing employment, predominantly located in peri-urban areas, is more accessible to those with moderate levels of educational achievement. Accordingly, peri-urban employment systems are important ladders of upward mobility, especially for in-migrants. Core cities, by contrast, are increasingly associated with high level tertiary employment with high credential barriers to entry on one hand, and insecure, formal and informal, low-level service sector jobs on the other. As a result, peri-urban economies have the potential to contribute significantly to poverty prevention and alleviation.

(ii) **National competitiveness.** Peri-urban areas are at the intersection of globalization and localization forces. A relatively small number of extended urban regions exert disproportionate influence in terms of national competitiveness—well beyond what would be expected, even given their significant gross domestic product (GDP) and demographic shares. This is particularly the case in East Asia. Thus to an increasing extent, extended urban regions (EURs), including their vast peri-urban areas, are critical in determining national competitiveness, and related national well-being.

(iii) **Environmental deterioration.** Manufacturing activities, and the settlement patterns associated with peri-urbanization, are not environmentally benign. Given the very rapid and high magnitude of demographic, economic, and manufacturing output growth in these areas, the risks of continuing, or even accelerating, environmental degradation are high. Local environmental damage reduces human well-being and

public health, decreases the attractiveness of these areas for investment in high value activities, can reduce agricultural output, and damages the long-term integrity of local agro-ecological zones. Given the scale of major peri-urban areas, environmental impacts can transcend the local, being continental or even global, in impact, e.g. acid rain impacts from coastal peri-urban development in China.

(iv) Institutional fragmentation and rural-oriented administration. Decentralization and local government capacity building are current public policy priorities in many developing countries. Some of the highest stakes in decentralization outcomes, both in terms of potential damage and benefits, are found in peri-urban areas. Highly fragmented, frequently low capacity, and rural-oriented local governance in much of developing country's peri-urban areas mean that decentralization, which leads to significant changes in the functions of local governments, will have disproportionate impacts. Peri-urban areas currently face severe challenges in terms of environmental degradation, including land conversion, employment creation, and social service delivery. The extent to which increasingly empowered local governments can address these challenges in peri-urban areas will significantly determine the well-being of hundreds of millions of people. Of particular concern are cases where decentralization processes are leading senior governments, both national and provincial, to abandon traditional coordination and large-scale investment roles in peri-urban areas. If empowered local governments cannot fill the gap, which is often the case, then the results will not be positive.

(v) Rural-Urban Linkages. Peri-urban areas play an important role in terms of rural-urban interdependence—a process of increasing concern because of its potential to vitalize rural areas. Peri-urban areas, as transition zones, play a vital role in linking urban and rural areas. Rural labor increasingly migrates to peri-urban areas rather than to urban. Remittances and people, through cyclical migration, constantly flow between rural and peri-urban areas. Rural people use peri-urban areas as staging areas and learning systems in rural-urban transition processes. Farmers in peri-urban areas frequently pioneer high value agricultural systems, because of market access and economic pressures related to the high value of land. Last, but not least, with their large populations, peri-urban areas will increasingly wield political power—a new constituency neither rural nor urban.

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Biographical Sketches

Douglas Webster is Senior Consulting Professor at the Asia/Pacific Research Center, Stanford University, California, USA. He has served as Senior Urban Policy Advisor to the National Planning Board (NESDB) of Thailand for the past nine years, as well as frequently advising several other East Asian national and sub-national governments on urbanization policies. Previously, he was Professor of Planning at the Asian Institute of Technology in Bangkok, Thailand, and Director of the Planning Program at the University of Calgary, Canada. He is the author of many academic and professional publications on East Asian urbanization, particularly on Southeast Asian and Chinese peri-urbanization.

Larissa Muller recently completed her PhD in City and Regional Planning at the University of California at Berkeley, USA. She is a frequent consultant on economic and environmental development projects in Thailand. She is also a member of the Stanford research team studying peri-urbanization dynamics in East Asian cities. Her research interests include comparative urbanization dynamics and service economies, with a focus on East Asia.

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