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**From Urban Corridor to Megalopolis:**  
**The “Metropolization” of Taiwan**  

The urban geography of Taiwan forms an urban corridor on the western part of the island. For the last 50 years, the explosive growth of Taiwanese cities has led to the creation of metropolises in the agglomeration of Taipei, Kaoshiung, Taichung and Tainan. Faced with these dynamics, we ponder the possible networking of these metropolises with the existence or the emergence of a megalopolis in Taiwan (similar to the original megalopolis identified in the US connecting Boston, New York, Philadelphia, Baltimore and Washington DC), and ask the following:  
- How have these metropolises evolved in the last 40 years?  
- Can we identify a megalopolis in Taiwan, especially across the new high-speed train corridor?  
- What roles does this urban configuration play in the development of Taiwan, and is it creating risks of territorial imbalances?  
- How does the megalopolis affect the logic of globalization?  
- What are the responses in terms of governance and planning which are elaborated in the face of these metropolitan and megalopolitan issues, where polycentrism acts as a new referential of public policies?  

This research combines quantitative and qualitative analyses in order to enable a permutation of:  
- Theoretical and empirical issues;  
- Global and local scale.

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1 I would like to thank the SEDET for the financial, technical and intellectual support, especially François Moriconi-Ebrard and Cathy Chatel.
The statistic corpus combines different data based on the world database “Geopolis”\(^2\) (MORICONI-EBRARD 1994):
- The evolution of the population of the municipalities (defined by political status) based on the national Taiwanese census data from 1956 to 2007;
- The spatial form of the agglomeration (defined by build contiguous);
- The spatial form of the metropolitan area (defined by the mobility).

The statistical analysis highlights the demographic evolution and, we can categorize the municipalities in 3 classes:
- A positive growth bigger than the national average. In this first class, the cities are particularly attractive and know a natural and a migration growth;
- A positive growth but lower than the national average. In this second class, the cities know a relative decline because some of the population leaves (specially young people) for more attractive territories;
- A negative evolution. In this last class, cities know an absolute decline.

We have done this discrimination for the last decades, and we observed an evolution in the urban configuration of Taiwan. The first part is about the Taiwanese urban context, the second part presents the metropolization process of the island, and the last part questions the possibility of a Taiwanese megalopolis and presents the processes of governance and planning which are developed to answer the questions regarding these new megalopolitan issues.

1. Taiwanese urban context

Its origins

During the Japanese occupation, the infrastructural development took place quickly and consequently modified the Taiwanese territorial configuration (GAMBLIN 1992; DE SACY 2006). In 1900, the Japanese initiated the building of Taiwan's railroad system from Kiro (Keelung) to Takao (Kaoshiung). After this step, the modernizations of these 2 ports were completed to facilitate transport and shipping of raw material and agricultural products. Consequently, during the Japanese occupation, which was between 1895 and 1945, the urban configuration knew a concentration on the north and the western part of the island.

\(^2\) Geopolis is the only scientific database on the population of the agglomerations of the World now in existence: it comprises 50 000 agglomerations and, for each one, data recording the evolution of population over the longest period of history possible.
Figure 1: Territorial organization during the Japanese occupation

The urban growth after the Second World War

In 1960, the national population of Taiwan was 10.720.700, and ten years later, it increased to 14.294.600 people. Accordingly, the nation experienced a population augmentation of 33%.

This inordinate growth period corresponds to the arrival of many individuals from the mainland and also the important native growth. This increase is significant and is especially concentrated in the urban sectors of the island. The four important cities of Taiwan (Taipei, Kaoshiung, Taichung and Tainan) saw a significant demographic explosion. During this decade, Kaoshiung went under a very important growth that particularly caused by the industrial development.

Generally, theses urban areas were still relatively concentrated, so we cannot already name them “metropolis”. Outside these four urban areas and far from them, a few towns and cities experience a negative growth.
Figure 2: Demographic evolution during 1960s

2. The “metropolization” process

Metropolization is generally considered a two-fold process (VELTZ 1996; STORPER 1997; SCOTT 2001; BASSAND 2004). The first process is more global, and emphasizes the development of a system of metropolises within the economic context of generalized concurrence. The globalization-metropolization couple will eventually act as the engine behind the great transformations of the modern world. The second process refers to the internal structuring process of urbanization, as a product of how homes and businesses are located. This controls the spread of urbanization, which leads to the creation of new territorial specialization and new centralities.

The metropolization process contains a paradox with a double movement of concentration of the population and the activities in the bigger cities. At the same time, an opposite movement with a deconcentration of the population and the activities in a dynamic of population-activity sprawl. These two phases correspond to two step of the metropolization process, the first one with a general concentration and the second one with a
deconcentration inside the metropolitan area with a sprawl from the center to peripheral area (MORICONI-EBRARD 2000).

**The first Taiwanese metropolization**

In 1980, the national population accounted for 17.701.200 people. During the 1970’s, Taiwan saw a growth of 24%. The expansion is still significant, yet is lower than during the preceding period.

During the 1970’s, the metropolization process starts. This first step corresponds to a general concentration in the four metropolises. There is an augmentation in all of their regions, from their central areas to their suburban and exurban districts as well. In fact, all the metropolitan parts are still attractive.

At the same time as the metropolises are growing, other cities between them see a regression, thus illustrating a move and a concentration in the direction of the largest cities, further reinforcing the concept of the metropolis.

**Figure 3: Demographic evolution during 1970s**
In 1990, the national population accounted for 20,288,720 people. During the 1980s, Taiwan saw a growth of 15%. The expansion is still significant, but the decrease continues. During this decade, Taiwan continues the first step of the metropolization process.

**Figure 4: Demographic evolution during 1980s**

The second metropolization

In 2000, the national population increased once again to reach 22,184,338 people, a growth of 8% over the span of a decade.

During this fourth period, the demographic development is still positive, yet is lower than in previous eras. The urbanization is now almost generalized, but the various urban regions are faced with different situations and concerns. When the metropolitan area undergoes an important population sprawl, linked to these phenomena, we can observe a differentiation inside the metropolis with an important population sprawl from the central part to the peripheral area.
Taipei, the largest metropolitan area in Taiwan, is still growing but with different evolution in this space. The central part of the Taipei metropolitan area has become less attractive than the peripheral area and loses population. Both the population and the associated activities sprawl from the central part to the suburbs.

The metropolitan area of Kaoshiung and Tainan are still growing but their central part are undergoing a growth lower than the national average. The metropolitan area of Taichung is still growing in all of its regions. The central part is undergoing an evolution higher than national growth. We can explain this fact with the vigorous economic development in the central part of the island (HOUSSEL 2000). Outside of these four metropolises, almost all cities see a decrease in population.

These various evolutions illustrate the beginning of the second step of the metropolitan process with an urban concentration in the biggest cities. However, inside these cities, we can observe a completely different process with regards to sprawl, particularly in the biggest city of the urban network.

**Figure 5: Demographic evolution during 1990s**
3. From metropolization to megalopolization?

In 2007, Taiwan’s national population numbered 22,885,353 people. For the decade 2000-2010, the country can expect an increase of 4%.

The final step of the metropolization process

In recent years, the national demographic evolution is still positive but its vigorousness has continued to decrease. Taiwan’s population growth is now similar to that of European countries. Consequently, only a few territories can illustrate a dynamic of concentration, most notably the peripheral areas of each of the metropolises.

The central sector of the metropolitan area of Taipei is experiencing a less dynamic growth than the national average, while its peripheral area sees an increase that is more significant than the national numbers. The case of Hsinchu can illustrate this type of energetic peripheral development with the Hsinchu Science-based Industrial Park (HSIP).

The metropolitan area of Kaoshiung and Tainan merged to a unique area. The two central areas of this new sum have undergone a different trajectory. Kaoshiung experiences a similar dynamic as Taipei. Since Tainan becomes anew, a peripheral area of a metropolitan area, it faces to another dynamic and again becomes attractive with a bigger growth than during the precedent decade. We can also suppose that the implementation of the second Science-based Industrial Park (SIP) in Taiwan can explain this dynamic.

Generally, the growth of the metropolitan area is more spatial and linked with the population sprawl than linked with the population growth.
The megalopolis

In the 1950s, geographer Jean Gottmann studied the northeastern United States and published a book in 1961 that described the region as a vast metropolitan area over 500 miles long stretching from Boston in the north to Washington, D.C. in the south. This area (and the title of Gottmann’s book) is known as a Megalopolis. The term megalopolis is derived from Greek and means “very large city” Gottmann (1961).

Gottmann’s Megalopolis (sometimes referred to as BosWash, for the northern and southern tips of the area) is a very large functional urban region that “provides the whole of America with so many essential services, of the sort a community used to obtain in its ‘downtown’ section, that it may well deserve the nickname of ‘Main Street of the Nation’” (GOTTMANN, 1961: 8).

Acknowledging that while, “a good deal of the land in the ‘twilight areas’ between the cities remains green, either still farmed or wooded, matters little to the continuity of
Megalopolis” (Gottmann 1961: 42) Gottmann expressed that it was the economic activity and the transportation, commuting, and communication linkages within Megalopolis that mattered most.

We must abandon the idea of the city as a tightly settled and organized unit in which people, activities, and riches are crowded into a very small area clearly separated from its non-urban surroundings. Every city in this region spreads out far and wide around its original nucleus; it grows amidst an irregularly colloidal mixture of rural and suburban landscapes; it melts on broad fronts with other mixtures, of somewhat similar though different texture, belonging to the suburban neighborhoods of other cities. (Gottmann, 5)

The term megalopolis has even come to define something found much more broadly than in just the northeastern United States. The Oxford Dictionary of Geography defines the term as “any many-centered, multi-city, urban area of more than 10 million inhabitants, generally dominated by low-density settlement and complex networks of economic specialization”.

25 years later, Jean Gottmann recognized the theoretical impacts of his work: “the Megapolitan concept seems to have popularized the idea that the modern cities are better reviewed not in isolation, as centers of a restricted area only, but rather as parts of “city-systems,” as participants in urban networks revolving in widening orbits.” (1987: 52). Many urban geographers have studied the concept of Megalopolis in the United States and have applied it internationally. The Tokyo-Nagoya-Osaka Megalopolis with 39 millions of habitants (MORICONI-EBRARD 1993), or the Pearl Delta River Megalopolis are excellent examples of urban coalescence in Asia.
Figure 7: The Asian megalopolises


The Taiwanese megalopolis

The Taiwanese megalopolis has actually been developing over hundreds of years. Communication between Taipei and Kaoshiung and the cities in between has always been extensive. Transportation routes within the megalopolis are dense and have been growing for several decades, especially with introduction of the new high-speed train system.

Today the Taiwanese megalopolitan area includes more than 18 million people, approximately 80% of the entire Taiwanese population. In Japan, we observe a similar proportion with a megalopolis concentrating approximately 80% of the national population. In this Taiwanese megalopolis, each metropolis has a special function: Taipei assumes the
role of global city (WANG 2003; KWOK 2005), Kaoshiung has the role of global port specially for the containers exchange, Taichung and Tainan are the technological areas.

Between these metropolitan areas, many cities are important and the urbanization never really stops, especially with the important sprawl of these metropolises. With the second step of the metropolization, the urban sprawl increases the connection between the different agglomeration and metropolises.

**Figure 8: The Taiwanese Megalopolis**

![Map of the Taiwanese Megalopolis](image)

**When planning networks the megalopolis**

The regional development always faces an important disparity (HOU 2000) between north and south or between east and west. Consequently, the regional planning policies are outdated (TANG 1981).

This trend is linked to the development of connected territories, with the introduction of a new high-speed train line (YEH 2007). To meet these new challenges and to transform the spatial and economic mutations into a real strategy to tackle globalization (LAQUIAN 2005), the government is developing a new national planning approach. Polycentrism is a new
spatial reality (HALL and PAIN 2006) and is becoming a new referential for public policies (GLOERSEN, LAHTEENMAKI-SMITH et al. 2007). The originality of the Taiwanese high-speed train is to deserve a very numerous number of cities (in comparison to the European high-speed train network) in order to support the networking of the cities and metropolises and the emergence of a Taiwanese megalopolis.

**Figure 9: The Taiwanese high-speed train network**

![Image of the Taiwanese high-speed train network]

Source : Bureau of high speed rail, 2007 www.hsr.gov.tw

**Conclusion**

The result of this research highlights the transformation of the Taiwanese urbanization process from an urban corridor between Keelung-Taipei to Kaoshiung, to a megalopolis. We saw the two steps of the metropolitan process beginning with a concentration and leading to a deconcentration with a widening population sprawl and a specialization of urbanization. The dynamic connection between the different urban areas is now supported by the high-speed train corridor. Since the last year, it has been the best tool to support the emergence of a Taiwanese megalopolis.
### Metropolitan Population Data (Source: Geopolis)

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Rest of Taiwan

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Density

| 220 | 254 | 269 | 217 | 219 | 217 |

Taiwan

| 700 | 600 | 200 | 720 | 338 | 010 |
Bibliography


