

Cities and Urban Land-Use

AP Human Geography ■ Unit 6

AP Human Geography



What we will cover

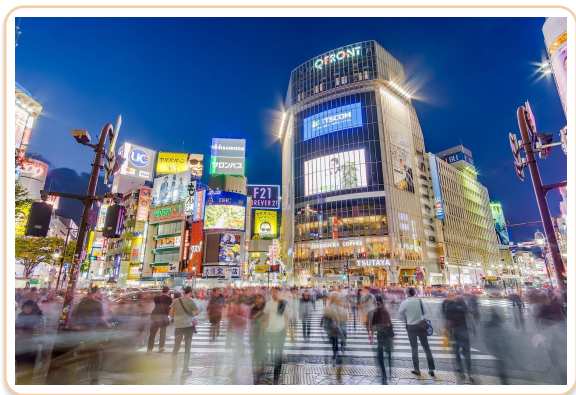
- 1 Urbanization
- 2 World cities
- 3 Size & distribution
- 4 Internal structure
- 5 Density & infrastructure
- 6 Sustainability challenges

1

Growth of cities

Urbanization

- **Urbanization** 城市化: the rising **share** of people in cities
- Began with the **agricultural surplus**; **fastest** in developing countries today
- **Site** 场地: physical setting; **situation** 位置: position to others
- **Transport**, communication and industrial jobs drive growth



Cities concentrate people and activity

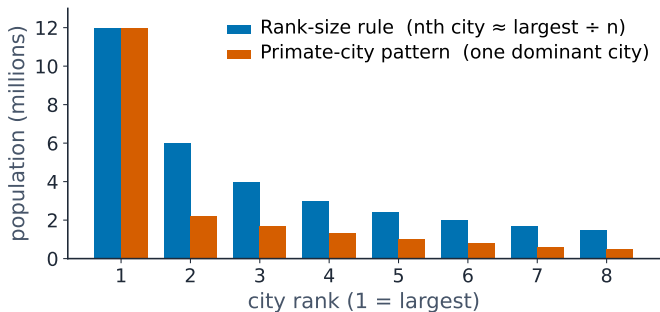
World cities and globalization

- A **megacity** 特大城市 has over 10 million people.
- A **world city** 世界城市 is a command centre of the global economy.
- World cities form an interconnected global network.



World cities command global networks

The Distribution of Cities



AP HuG · U6 · Rank-size rule vs a primate-city distribution

Under the rank-size rule the nth city is about $1/n$ the size of the largest; a primate pattern has one dominant city far bigger than the rest

How cities sit in a country, and inside themselves

central place theory 中心地理论

Christaller: larger centres are **fewer and farther apart**, each serving a wider area of smaller ones

three US models

concentric-zone, sector and multiple-nuclei – three ways to describe the same North American city

Griffin–Ford

the Latin American model: a **spine** of wealth running out from the centre, poverty at the edge

bid-rent 竞租

density and land price are highest at the CBD and fall outward – which is why the tall buildings are central

Where **infrastructure** 基础设施 lags behind growth, **informal settlements** 非正规住区 fill the gap.

What a growing city costs, and what planners do

social

housing shortages, segregation, and the displacement caused by **gentrification** 中产阶级化

environmental

air and water pollution, the **urban heat island** 城市热岛 effect, waste and heavy resource use

economic

strained budgets, congestion, and the cost of extending services to a sprawling edge

the response

smart growth 精明增长, mixed-use and transit-oriented design, **greenbelts** 绿带, **urban renewal** 城市更新

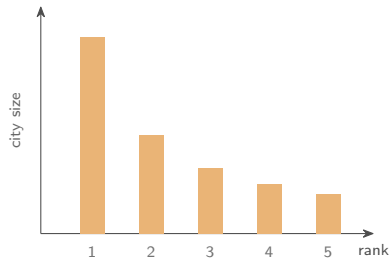
A sustainable city grows **up** rather than **out**, and census and geospatial data decide where the schools and transit go.

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Structure of cities

Size and distribution

- The **rank-size rule** 位序-规模法则: the n th city $\approx 1/n$ of the largest.
- A **primate city** 首位城市 is more than twice the second city.
- The **gravity model** 引力模型: interaction rises with size, falls with distance.



n th city $\approx 1/n$ of the largest

Worked example – rank-size or primate?

Country A: largest 12M, 2nd 6.1M, 4th 3.0M. **Country B:** largest 12M, 2nd 2.5M. Which fits rank-size?

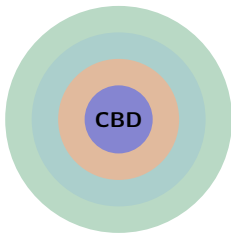
A: rank-size predicts $2\text{nd} = \frac{12}{2} = 6\text{M}$ and $4\text{th} = \frac{12}{4} = 3\text{M}$. Both match, so A follows rank-size.

B: $12 > 2 \times 2.5 = 5$, so B has a primate city.

Test the **second** city first:
more than double $\Rightarrow$ primate,
and you can stop. Only if it
is not primate do you check
whether the **whole** $1/n$ ladder
holds.

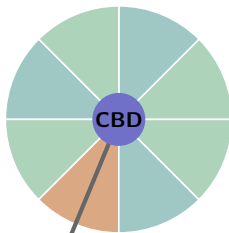
Internal structure

Concentric zone 同心圆模型



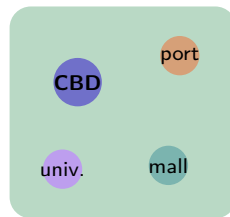
rings around a CBD

Sector 扇形模型



wedges along transport routes

Multiple nuclei 多核心模型

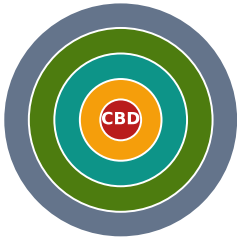


several centres

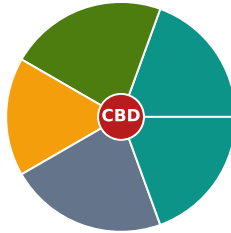
Three **models** of how land use is arranged inside a city.

The concentric-zone

Concentric zone (Burgess)



Sector (Hoyt)



Multiple nuclei (Harris-Ullman)

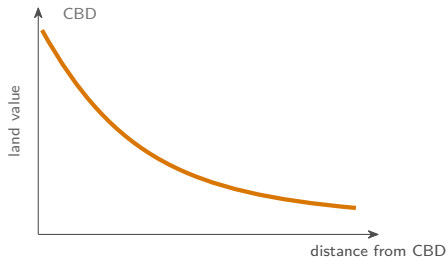


■ CBD ■ wholesale / light mfg ■ low-income housing ■ middle-income housing ■ commuter / industry

The concentric-zone, sector, and multiple-nuclei models each explain city land use differently

Density and infrastructure

- **Land value** 地价 peaks at the CBD, pushing buildings up.
- **Zoning** 分区规划 sets what is built where.
- **Infrastructure** 基础设施 enables growth and development.



land value peaks at the CBD (bid-rent)

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Urban challenges

Change and sustainability

- **Suburbanization** 郊区化 and **urban sprawl** 城市蔓延 consume land.
- **Gentrification** 士绅化 raises values and can displace residents.
- **Smart growth** 精明增长 and **greenbelts** 绿化带 support sustainability.



Uneven growth shapes who gets housing

Key points

Site = physical; **situation** = relative position

Rank-size vs **primate**-city distributions

Three models: **concentric**, **sector**, **multiple nuclei**

Sprawl + gentrification
are key urban challenges

Worked example – the command word is the question

“Compare the concept of a metacity with the concept of a world city.” (real AP question)

“A metacity is defined by size – a continuous urban area of more than 20 million people – while a world city is defined by influence, acting as a command centre for the global economy. Tokyo can be both, but a large metacity in a poorer country may not be a world city.”

Compare needs an **explicit point of difference** (size versus influence), **not** two definitions sitting side by side.

Exam tips

- Separate a city's **site** (physical setting) from its **situation** (position relative to others).
- Apply the **rank-size rule** (the n th city is about $1/n$ of the largest) and spot a **primate city**.
- Match a city description to the right model: **concentric zone**, **sector**, or **multiple nuclei**.
- Link **land value** to density – costly central land is used by building upward.
- Discuss change with **suburbanization**, **sprawl**, and **gentrification**, and **smart-growth** responses.

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Recap

Unit 6 – key takeaways

1

Site vs situation

physical setting vs position
relative to others

2

Rank-size

n th city $\approx 1/n$ of the largest;
primate city

3

Models

concentric zone, sector, multiple
nuclei

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Change

suburbanization, sprawl,
gentrification, smart growth

Check yourself

- 1 Metacity or world city: defined by influence?
- 2 What does the rank-size rule predict?
- 3 What is a primate city?
- 4 Name one cost of rapid urbanization.

Answers 1. world city 2. the n th city is $1/n$ the size of the largest
larger than all the rest 3. one city far
4. informal settlements, strained infrastructure