

10

Urban Geography

CHAPTER OUTLINE

This chapter is organized into the following three parts: Know the Theory, Know the Models, and Know the Concepts. The section on theory contains an explanation of central place theory and related concepts. The models section details the concentric zone model, the sector model, the multiple nuclei model, the galactic city or peripheral model, and the Latin American city model. The concepts section includes parts on suburbanization, gentrification, city types, urban change, economies, and sustainability issues.

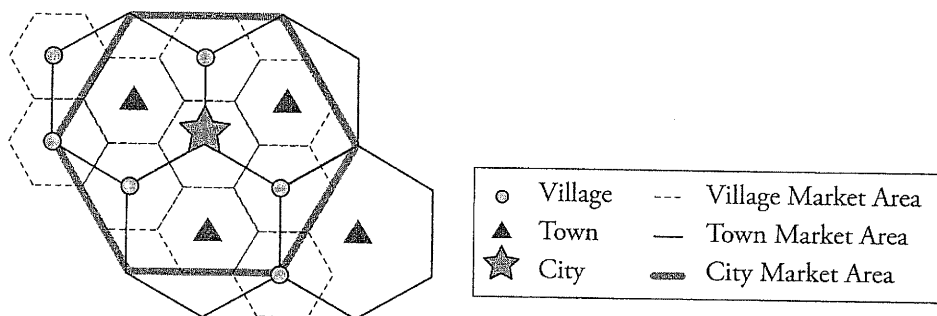
KNOW THE THEORY

CENTRAL-PLACE THEORY

Central to spatial analysis and at the heart of all urban models is the basic concept of **central place theory**. Explained simply, central place theory holds that all market areas are focused on a central settlement that is a place of exchange and service provision.

The **market areas** of settlements, also known as **hinterlands**, overlap one another at different scales. Large settlements have larger market areas, but they are few in number, whereas small settlements have smaller, more numerous market areas. In terms of the size of market areas, large settlements have a larger number of services, for which consumers are willing to travel large distances to access. Small settlements have a smaller number of services, which are closer to consumers.

Research in the 1920s by German theorist **Walter Christaller** showed that there is a hierarchy of places (seven levels, from a small hamlet to the large regional service-center city) across the landscape that followed a regular pattern. Christaller used hexagons to represent individual market areas. Then, he overlapped smaller scale patterns with larger scale layers of hexagonal market areas. The diagram below is a cutaway of three layers of this **urban hierarchy** as a basic example of Christaller's theoretical principles. In this example, the city's market area (or hinterland) contains three towns and five villages. One village and one town lie outside the city's market area.



Use the market areas of food stores as an example to explain the principle. Describe the village with a convenience shop (such as a 7-11, Circle K, Wawa); then represent the town with a grocery store (Safeway, Kroger, Albertsons); and finally, define the city with a big-box warehouse store (Sam's

Club, BJ's, Costco). People are willing to travel different distances for the service of food retailing. These market areas are based on the number of goods available in the store and the volume discount received when purchasing in bulk.

Need a bottle of soda? Just go to the local convenience store for a 20-ounce bottle for \$1.29. Head further to a grocery store, if you desire a 2-liter bottle for \$1.09. And go all the way to the big-box warehouse store if you want a case of twenty-four 20-ounce bottles for \$17.00.

Threshold and Range

The **threshold** of a service is the minimum number of people required to support a business. The **range** is the maximum distance that people are willing to travel to gain access to a service. Keep in mind that these concepts are modified by income and travel time, respectively. Threshold is partly calculated based on the earnings of the local population. For example, a luxury car dealership will have somewhat larger population requirements than a regular car dealer, but will only exist in an area if the population's income will support the business.

Range is calculated not in terms of distance but in **travel time** that a consumer needs to get to a service location. People are poor judges of actual distance, but they can tell you how long it takes to get somewhere. Sometimes traffic patterns become more important than distance in terms of how long it takes to reach a destination. Like the soda bottle example, decisions regarding access to a service are dependent on the amount of travel time and the necessity of the service. The convenience store is mainly for immediate consumption, the grocery store for the week's consumptive needs, and the warehouse store for the month's consumptive needs.

Agglomeration

Why then do we often find the same types of businesses in the same locations? **Agglomeration** is when similar business activities are found in a local cluster. In heavily populated areas, competition within markets is common. Also, planning and zoning rules often push some types of businesses with similar building space requirements into the same local areas. In the case of manufacturers and corporate services, firms will often locate near one another in search of technical knowledge and labor sharing. Likewise, there may be some local advantage for certain types of companies to all locate in one place.

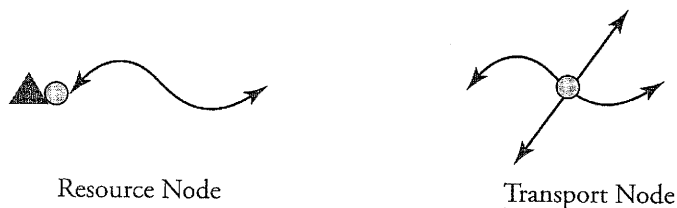
Examples of agglomeration:

- Computer hardware and software firms in the **Silicon Valley** area south of San Francisco: This is due to close proximity to the high-tech **growth poles** of Stanford University and the NASA Ames Research Center.
- Automobile companies in **Detroit**: This was originally due to manufacturing **cost advantages** of location on the Great Lakes for iron ore delivery by water, and proximity to coal in the Midwest and Appalachia.
- Banks in **South Dakota**: The state of South Dakota has **limited banking regulations** and no corporate taxes. Some national banks have facilities where large corporate and institutional accounts are held to avoid the high auditing costs and banking profit taxes of other states.

URBAN ORIGINS

Why do settlements form where they do? For this section, think back to when the cities we know today were just settlements. This section will review the spatial concepts related to central place theory that historically discuss why cities are located in a particular place and how they became prominent places among the mass of other similar settlements.

The origins of an urban place often have to do with one of two categorical factors: access to resources and access to transportation. Towns and cities that were founded due to access to natural resources are known as **resource nodes**. Similarly, places that were founded as settlements due to their location as intersections of two or more lines of transportation are known as **transport nodes**. Lines of transportation can include oceans, rivers, bays, trails, roads, and rail lines. Airports are also transportation nodes. Below is a basic diagram to help you better visualize this concept:



THE GOLD RUSH EXAMPLE: CALIFORNIA

Resource node:	Transport node:
Sacramento, California (gold)	San Francisco, California (port)

In 1839, Sutter's Fort was established as a trading post in what is today downtown Sacramento. The site of the fort was right at the base of the Sierra Nevada Mountain foothills, where gold was discovered at Sutter's Mill in 1849. San Francisco, despite its historical association with the gold rush, had been founded in 1776 at the tip of the peninsula that separates San Francisco Bay from the Pacific Ocean. The literal transport node is the narrow natural canal between the bay and the ocean called the Golden Gate, hence the name of the bridge that spans it. From San Francisco Bay, riverboats moved people and goods inland to Sacramento and brought gold back, forming the resource node that later became the state capital.

Settlement Patterns

Patterns of rural settlements are generally described as being clustered or dispersed. **Clustered rural settlements** are communities in which all of the residential and farm structures of multiple households are arranged closely together. **Dispersed rural settlements** are where households are separated from one another by significant distances. Clustered communities are commonly seen in Europe and New England, where peoples of the same culture group or clan settled nearby one another for social interaction, use of common land-holdings, and security. In contrast, the farm regions of the American South, Midwest, and Great Plains generally have dispersed patterns of settlement, where large

land holdings spread homes far apart. Here many settlers had no cultural or family relations on the agricultural frontier. Thus, they were less likely to settle near one another.

In addition, clustered patterns can have circular or linear settlements. **Circular settlements** are generally a circle of homes surrounding a central open space. Examples of these can be found in medieval-era German and English towns as well as the enclosed villages of tribal herding communities in Sub-Saharan Africa. **Linear Settlements** tend to follow along a road or a stream front, such as the French long-lots (see chapter 6 for more on land survey patterns).

Site and Situation

The concept of **site**, in terms of urban origins, has to do with the physical characteristics of a place or its absolute location. In the same terms, **situation** has to do with a place's relationship with other locations, or its relative location.

Example: New York City

New York City's site characteristic is that it lies on a large, deep, enclosed water harbor at the end of the navigable Hudson River. Other colonial ports had large harbors but lay far inland (Baltimore or Philadelphia), or were not connected to inland waterways (Charleston, South Carolina, or Boston). This site characteristic gave New York an economic advantage during the colonial and postcolonial era.

The city's access to Albany gave traders in New York City a link to large volumes of natural resources and the early manufacturing centers of inland New England. Likewise, New York Harbor lies right on the open Atlantic Ocean with access to the wind-driven sailing trade routes coming from Africa, Latin America, and the Caribbean, and those ships heading back to northern Europe. Together site and situation help explain why New York City's optimal port location became the trade and financial capital of the United States by the early 1800s.

Economic Site Factors Today

Site and situation can still be used today to compare the economic prominence of cities. Economic site factors such as land, labor, and capital can be used to estimate the capacity of industry and services to develop in a particular place. Competition between cities for new business locations and new jobs are intense. How much land is developed, how educated the workforce is, and how much investment capital is available in a city are all important indicators of the potential for urban economic development.

KNOW THE MODELS

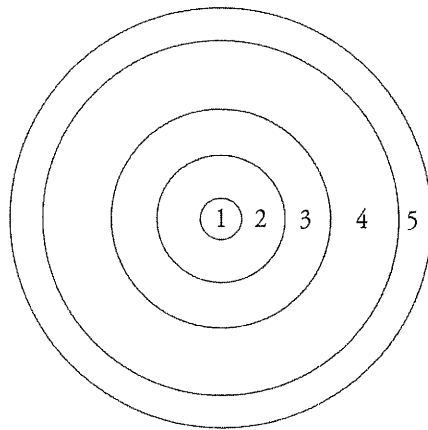
For the AP Human Geography Exam, you will need to know a number of urban models. As with the other models in the course, knowing the structure of the model is only part of the process—that allows you to answer the “where” questions. You also need to be able to explain the “who, why, and how” behind the different parts of the model. And you'll need to give real-world examples of what these theoretical models represent.

If you can explain the different parts of the model and how they are related, then you will easily remember the shape. That is to say, spend more prep time **understanding how the models work** and **what their parts represent**, as opposed to trying to memorize the shape of the model, which will probably be included on the exam.

Another thing that will help you remember and better understand the models is knowing how **the models have changed over time**, both in terms of how cities have changed historically, and in the different ways geographers have looked at the city. As you go from the concentric zone model to the galactic city model, think of each as an evolutionary step along the way to better understanding the changing urban landscape.

CONCENTRIC ZONE MODEL

The **concentric zone model** was first published in 1923 by theorist Ernest Burgess. The model represents the Anglo-American city of the United States and Canada during the height of industrialization. Representations of the model vary but follow this general pattern:



Practical Classifications	Alternate Terms
1: Central Business District	1: CBD, Downtown
2: Manufacturing and Wholesaling	2: Industrial Zone, Factory Zone
3: Lower-Class Housing	3: Working-Class, Blue Collar, Inner City
4: Middle-Class Housing	4: Professional-Class, White Collar, Suburbs
5: Upper-Class Housing	5: Country Estates, Exurbs

Theoretical Classifications	Density Classes
1: Central Business District	1: High-Density Commercial
2: Zone of Transition	2: Low-Density Commercial
3: Zone of Independent Workers Homes	3: High-Density Residential
4: Zone of Better Residences	4: Low-Density Residential
5: Commuter Zone	5: Very Low-Density Residential

The Model Explained

A number of different terms are used to describe the five concentric rings in the model, depending on the textbook or perspective of the researcher. Be familiar with the variations, since you never know how questions or potential answers could be worded. Also, keep in mind that it's a theoretical model and no city is perfectly laid out in nice, even rings. Let's go over some historical and current interpretations of each zone.

The CBD

All cities possess a **central business district**, or **CBD**. In all models, the CBD contains the highest density of commercial land use. This is characterized by **verticality** of buildings such as the tendency to build skyscrapers that maximize the use of one parcel of urban land. The CBD also contains the **peak land value intersection**, or **PLVI**, the downtown intersection surrounded by the most expensive pieces of real estate.

Industrial Zone

In the concentric zone model, the CBD is surrounded by an area of low-density commercial land that contains space-dependent activities such as factories, warehouses, rail yards, and port facilities. More recently in the era of **deindustrialization**, many American and Canadian cities have rebuilt former industrial areas into **festival landscapes**, converting the spaces and buildings into parks, museums, sports stadiums, arenas, convention centers, and outdoor concert venues. Examples include the Inner Harbor of Baltimore, Skydome in Toronto, and Centennial Olympic Park in Atlanta.

Inner City Housing

When the city model was first developed back in the early 1900s, the average worker did not have a car and some did not have access to public transportation. Since walking and streetcars were the main modes of transport, most people tended to live as close to work as possible. This is why high-density housing surrounds both the CBD and industrial zones.

The types of housing structures ranged from poor tenements and small apartments to row houses and townhouses for better-paid workers. Some of these areas today have been replaced or renovated through a process of **gentrification**, the economic reinvestment into existing buildings (discussed later in this chapter). However, most of these inner city neighborhoods retain their underdeveloped industrial-era housing or public housing projects and remain low-income areas.

The Suburbs

In the 1870s, the first planned developments with detached single-family homes began to appear on the periphery of American cities. One such place was Riverside, Illinois. Riverside was the design of Frederick Law Olmstead (the designer of Central Park in New York City), and is an example of the Victorian-era **garden city movement**. Homes were designed to look like European farm houses with front lawns, and were built for the growing urban middle class of Chicago.

Although suburbs also contain garden apartments and townhouses, the detached single-family home has become the most common housing structure. Lots vary in size from a quarter acre to over an acre. We require a comparatively large amount of land for suburban housing. Suburbs continued to grow through the 1920s, but expansion ceased during the Great Depression and World War II.

It was following the war that American suburban growth really took off. The suburbs are home to a mostly middle-class to upper-class population. Today, just over 50 percent of the American population lives in suburban areas, compared to 30 percent in inner cities and 20 percent in rural areas. Redrawing the model for today's day and age, we would vastly expand the "zone of better residences" as the suburbs have pushed outward and become the largest of the concentric zones.

See the section on **suburbanization** later in this chapter.

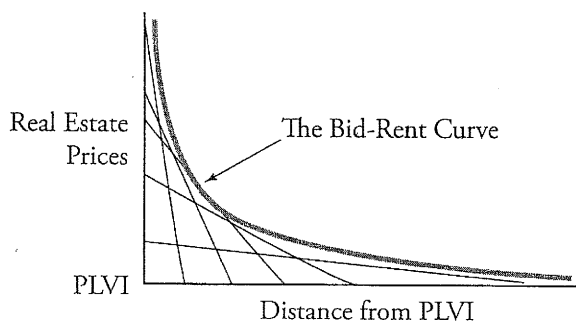
The Exurbs

The "commuter zone" represents a wealthy area of people who own large tracts of land outside the city. Some of these could be described as country estates, while the owners of other exurban homes might be better described as **suitcase farmers**, who worked in the city but kept farms outside of town. Not only could these people afford large homes in the early 1900s, but they could also afford a personal vehicle or daily train ticket into town.

Today, many exurbs still retain the feel of the large country estate homes on multi-acre lots. However, many suburban and exurban areas in large cities have pushed well into traditional agricultural areas. This expansion has prompted the development of a number of regulations, including farmland protection laws, minimum-acreage zoning, and development boundary zones.

Related Topic: The Bid-Rent Curve

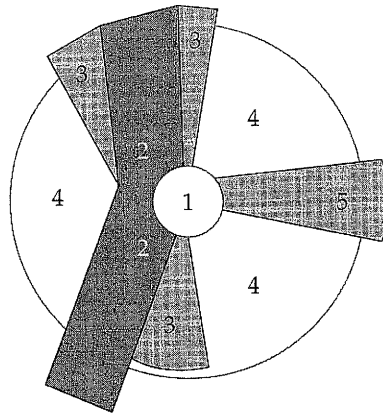
In addition to being a spatial model of the city, the concentric zone model has particular use as an economic model. The bid-rent curve represents the cost-to-distance relationship of real estate prices in the urban landscape. This is very similar to the land-rent curve related to von Thünen's model described in chapter 8. The bid-rent curve is a cost function that shows the exponential increase in land prices as one moves closer toward the peak land value intersection (PLVI).



One way to help remember the principle of exponential cost increase is that space for downtown commercial real estate is sold or leased by the square foot. By comparison, land in the suburbs is sold by the acre. Along the curve, you could plot different land uses. Land for a suburban home or space for a suburban apartment building are not that much different in price. However, land for that apartment building and land for building downtown is vastly different in price.

SECTOR MODEL

The **sector model** of urban structure was first proposed in 1939 by theorist Homer Hoyt. This model also applies to cities in the United States and Canada. In the model, the concepts of the industrial corridor and neighborhood are combined for practical purposes. These result in a much more realistic urban representation compared to the concentric zone model. The model is also used to depict ethnic variations in the city.



Theoretical Categories	Practical Descriptions
1: Central Business District	1: Central Business District, Downtown
2: Industrial Corridor	2: Rail Yards, Riverfronts, or Harbors
3: Lower-Class Housing	3: Ethnic Neighborhoods
4: Middle-Class Housing	4: Suburbs, WASPs
5: Upper-Class Housing	5: Elite Corridor or "The Boulevard"

The Model Explained

This is a standard central place model with the CBD at the center. Hoyt recognized that outside of the core business district, industrial space tended to be organized as a linear corridor surrounding a main transportation line. This could be a main rail line and parallel rail yard, a riverfront, or a harbor area. Warehouses and factories would be on either side of the corridor with equal access to transport.

In terms of residential space, Hoyt saw that a corridor of upper-class housing extended outward from the CBD of several cities. Examples of this include the Upper East Side in Manhattan, the Chicago North Shore, and Grosse Pointe in Detroit. Working-class neighborhoods also radiate out from the CBD along the industrial corridor. Other theorists recognized these lower-class housing areas as being generally **ethnic neighborhoods**, the result of immigration to industrial cities over previous decades.

By comparison, the middle-class areas of the city are broken into wide, separate areas radiating outward from downtown (remember, suburbs don't boom until after World War II). At the time, the socio-cultural makeup of these areas tended to be dominated by **WASPs**, white Anglo-Saxon Protes-

tants. WASPs would continue to be the majority in suburban middle-class neighborhoods until the late 1960s, when middle-class inner city residents, including many white Catholics, began to move out in large numbers.

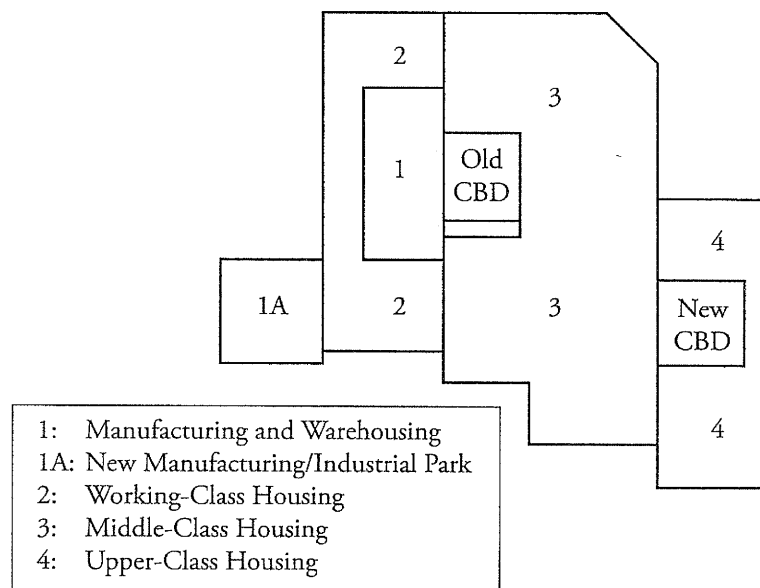
Related Topic: White Flight: Myth or Misnomer?

Many people including social scientists have described the phenomenon of people leaving inner city areas of the United States as “white flight.” In truth, not everyone that left the city was white, and not all whites left the inner city. Regardless of race, many inner-city residents with middle-class incomes moved out to suburban districts to escape the social unrest and economic blight of deindustrialization that characterized the 1960s and '70s in the United States.

Although most non-white suburban migrants integrated into mostly white suburban neighborhoods in small numbers, this was not always the case. Some areas such as Prince George’s County, Maryland, feature distinctly mixed suburban neighborhoods with large numbers of African Americans, many of whom are government workers in Washington, D.C. Conversely, inner-city areas in the United States still have large numbers of whites within a diverse mix of ethnicities.

MULTIPLE-NUCLEI MODEL

In 1945, geographers Chauncey Harris and Edward Ullman proposed the **multiple-nuclei model** of urban structure. This represents another evolutionary step in the conceptualization of the Anglo-American city. In the model, we see the first recognition of **suburban business districts** forming on the urban periphery. Below is a simplified graphic to explain the basic principles:



The Model Explained

Like the sector model, the multiple-nuclei model attempts to practically represent the urban landscape with neighborhoods and commercial corridors. However, the main difference is that instead of all commerce being focused on the center of the city as in the sector model, the term “multiple-nuclei” (the plural of nucleus or center) implies that there is more than one commercial center within the city landscape.

New **suburban CBDs** were emerging in post-World War II cities, and as suburbs spread outward, service industries followed. As will be discussed in the section on suburbanization later in this chapter, service providers came to the suburbs to be closer to their consumers and stay near members of the service workforce.

New areas of industrial development were also locating on the urban periphery. The area labeled 1A represents the new manufacturing locations that were added for war production and after the war. Expansion to the suburbs was necessary since many downtown factory districts had no room for expansion. The urban periphery offered large tracts of land for heavy industry such as aircraft production and new automobile plants.

Related Topic: The “Death of the American Downtown” in the 1970s

The Old CBD, as it is labeled on the diagram on page 278, was an area at risk in the last quarter of the twentieth century. “Deindustrialization” meant old factories and related industry and services in downtown areas closed down. As a result, the labor force moved away and capital investment into downtown real estate dwindled. Having lost many consumers (sources of income and investment), the CBD was no longer the most prominent place in the urban economy.

What was happening was that the country was moving away from a manufacturing-based economy to a service-based economy. As services migrated to the suburbs, so did the money to invest in commercial real estate. Soon the old CBD began to look run-down and dated. Prominent retailers that were once located on Main Street were replaced by discount stores or in many cases sat empty. City government efforts at downtown “urban renewal” projects had little impact. City downtowns had additional problems with crime and homelessness that cost money and diverted attention.

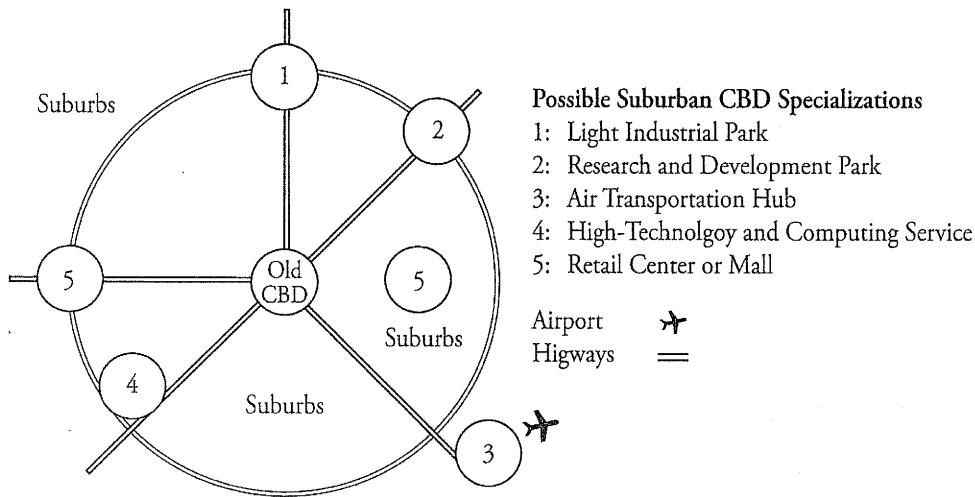
On the urban periphery, new malls and shopping centers flourished in suburban areas. Developers continued their focus on suburban expansion and suburban CBD development until the mid-1990s when a renewed focus on downtowns received business and government attention. Downtown property prices had dropped significantly through the 1980s and early 1990s, and cost-effective opportunities to reinvest in downtown real estate began to emerge. We still see many of these “urban redevelopment” projects in cities today and many have become successful as downtowns have become more appealing and, in some cases, trendy.

See more later in this chapter on gentrification. Also see the chapter on economic geography section on the attempts to create “cool” cities on page 262.

GALACTIC CITY MODEL OR PERIPHERAL MODEL

In the last half of the twentieth century, urban geographers have noticed that many of the new suburban CBDs in the United States and Canada have become specialized toward a particular industrial

or service sector. In many ways, the following model, regardless of what name is used, represents the **post-industrial city** with its several, dispersed business districts. Here is a simplified version:



The Model Explained

The model represents a distinct decentralization of the commercial urban landscape as the economy has transitioned to services as the leading form of production. It's not that manufacturing has disappeared; it has just declined significantly and become specialized. This specialization has meant that new manufacturing facilities tend to be much smaller and require low-cost land to afford to operate. Therefore, these new facilities tend to be in specially designated industrial parks on the urban periphery. They are often subsidized by local governments to reduce costs and increase employment opportunities.

Suburban retailing often occurs in multiple locations around the city. In the diagram above, the retail center closer to the old CBD is likely an older center from the 1950s or '60s among older neighborhoods. The retail center located at the intersection of the belt highway and the artery leading out from the old CBD is likely a newer center built late in the completion of the interstate highway in the 1970s or '80s. The point to take away from this is that **transportation nodes** are common locations for suburban CBDs due to their high level of access. Other types of service specializations are found in suburban CBDs. A few examples, including those shown on the diagram above include:

- High-technology and computing
- Research and development
- Transportation services
- Bio-technology
- Hospital centers
- Telecommunications and call centers
- Banking and finance
- Suburban government centers
- Universities or branch campuses

Related Topic: The Rise of Dulles

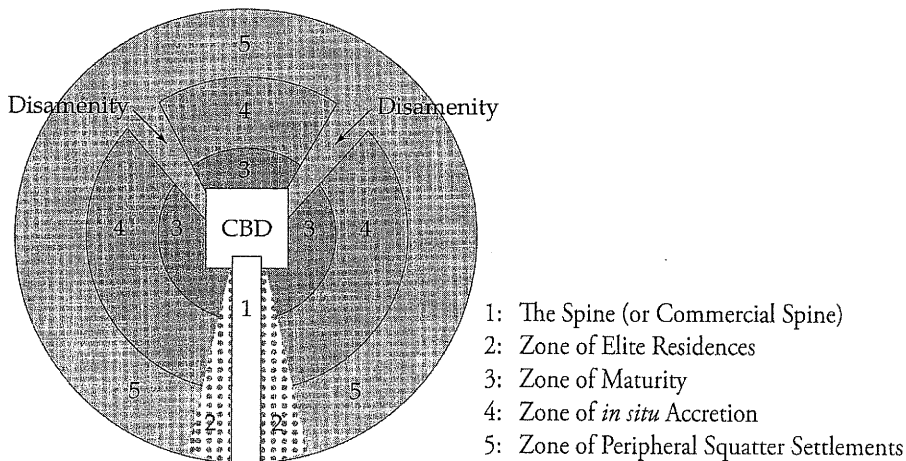
Commercial development around airports is as common as airports themselves. Hub airports, from which airlines service a large number of regional destinations, are especially important for local service and commercial land development.

For example, in the late 1990s, AOL and MCI Worldcom located large corporate headquarter facilities just north of Dulles International Airport in the northern Virginia suburbs of the Washington metropolitan area. These companies chose the D.C. area so they could be close to federal communication regulators and Internet service providers. However, their management workforce needed to travel the country and world on a frequent basis. The Dulles location proved very efficient for business travel.

The only problem was that these immense facilities were built on old farmland where no municipality or mailing address had previously existed. When AOL representatives went to the airport post office to figure out the company's new mailing address, they found out that no postal town or city was listed. The post office's suggestion was to just call it "Dulles." The name stuck and a new place was created.

LATIN AMERICAN CITY MODEL

Whereas the previous models depicted the Anglo-American cities of the United States and Canada, there are also models that depict the common urban landscapes of international locations. Only one of these appears commonly on the AP Exam. The **Latin American city model** was first presented by Larry Ford and Ernst Griffin in 1980. The model was updated in 1996, but not all introductory textbooks show the changes. Here is the model as it appeared in its original form:



The Model Explained

This model is important as an example of the colonial city. The effects of European colonial rule on many cities in Latin America, Africa, and Asia are significant. Often colonial powers demolished old pre-colonial cities and rebuilt them in the European style. In other cases, new cities were built according to specific plans. The Latin American model tends to represent the latter. During the 1500s, the Spanish government in the New World enacted a number of colonial legal codes collectively known as the **Laws of the Indies**. One of these laws dealt specifically with the planning and the layout of colonial cities.

The CBD

Just as it is in Anglo-America, the CBD in Latin American cities is also at the center of the model. Historically, the Laws of the Indies stipulated that each settlement have a central square known as a **plaza**. This was to reproduce the style of European cities such as Madrid, which has at its center the *Plaza de Mayor*. Surrounding the plaza, the centers of government, religion, and commerce are located. Today, the CBD remains the primary location for businesses. This is unlike the United States and Canada, where numerous suburban CBDs dominate the economy. CBDs in Latin America are also vertically oriented and most large cities have a cluster of skyscrapers at their core.

The Commercial Spine

The Laws of the Indies also required that a main boulevard be constructed leading from the plaza to the outskirts of the city. In some large cities today, several boulevards radiate outward from the central square. For example, in Buenos Aires three main boulevards stretch outward from the central *Plaza de Mayo*. In the colonial era, the spine was often the location for the homes of the wealthiest merchants and landowners. Today, many of these old homes have been replaced by office towers and high-rise condominiums. As such, the spine is still an area of wealth and prestige.

The Zone of Elite Housing

Similar to the Sector model, an area of upper-class housing straddles the spine leading outward from the city center. In the colonial era, social status was gained by having your home along these main avenue districts. This remains true today. One of the primary differences between the urban models of Anglo-America and the Latin American model is that in Latin America, the wealthiest people tend to live close to the CBD, whereas in the United States and Canada, the wealthiest people tend to live on the urban periphery.

The Zone of Maturity

This area of middle- to upper-class housing surrounds much of the CBD. The Laws of the Indies segregated housing in Spanish colonial settlements. Only those who are of European descent were allowed to own homes and live within the city limits or walls. The name “maturity” comes from the type of European architecture and building materials used in homes of this zone. Today, many of the colonial era homes are being torn down and lost to commercial redevelopment as the CBD expands, or to the proliferation of high-rise apartment buildings surrounding the city centers.

The Zone of *in situ* Accretion

In the colonial era, this was the area outside of the city limits or walls where people of indigenous or mixed descent made their homes. The name "*in situ* accretion" means growth over time (accretion) in the ground (the Latin, *in situ*). This is meant to describe the building materials and architecture of housing, which relied primarily on local timber and mud brick, known in some areas as *adobe*. Today, these are areas of middle-class and working-class housing. Many are single-family homes surrounded by walls or iron gates. The interiors of these homes may still contain parts of old colonial era homes that they were built on top of or next to.

The Zone of Peripheral Squatter Settlements

Squatter settlements on the urban periphery are home to most of the urban poor in Latin America. By comparison, in the United States, the peripheral suburbs are dominated by middle-class housing and the poor are generally in the inner city areas. These communities are known by several names such as *colonias* in Mexico, *barriadas* in Peru, or *invasiones* in Colombia and Ecuador.

Squatter settlements did not become a common feature of the Latin American urban landscape until the years following World War II. The rise of industrialization and the numerous civil wars fought in rural regions, among other **push and pull factors**, led to an increase in rural-to-urban migration in the region (See chapter 5 for more on rural-to-urban migration). For most migrants new to cities, there was little to no available housing. Part of the reason for this is a lack of real estate investment for low-income housing in Latin American cities. This is different from the United States and Canada, where during the 1800s and early 1900s numerous inner city dwellings were built to house European immigrant workers.

Squatting and Land Tenure

In Latin America, rural to urban migrants have been forced to build their own squatter settlements on the urban periphery. **Squatters** are people who settle on land that they don't own. Often, the land available on the urban periphery is owned by either governments or agricultural landowners. Land that is sitting idle and unoccupied is most commonly targeted by communities of squatters. This is because in many countries, idle land, regardless of who owns it, can be legally squatted upon if the new residents make good use of it. This is the opposite of real estate laws in the United States that favor landowners, but is a common legal standard in many social democracies.

To avoid retributions from landowners and local police, squatters generally settle a new area overnight with a large number of families. This is known as a **land invasion**. A squatter camp can be quickly erected with makeshift homes using available building materials, such as scrap wood, plastic, and blue plastic tarps. These rudimentary homes may give squatters some legal protections, since in some places it is illegal for government to tear down housing of any type without court authority to do so.

Over time, the squatter homes are improved upon and utilize sturdier materials. A thirty-year-old squatter settlement may look like formal housing with brick walls and metal roofs, along with electric power or other utilities. However, as you move through to new squatter settlements further out of the city, the quality of housing declines, as does the availability of utilities and other services such as bus lines.

Through these tactics, squatters attempt to achieve **land tenure**; that is, legal right or title to the land upon which they build their homes. It can take years if not decades to formalize property ownership. Until then, there is always the risk that squatters could be run off the land. To minimize this risk, squatter communities often pool their resources to pay off landowners, bribe local officials, or if money is short, promise local elected leaders the guarantee of votes in exchange for their protection. These political relationships are also important later on to gain government funding for schools, transit, clean water, or other public services.

Zones of Disamenity

These are squatter communities closer to the center of the city. They are built on land that is deemed unsuitable for standard homes and businesses, including steep hillsides, flood plains, old industrial sites, near airports, or on refuse dumps. They are settled because of their availability and due to their close proximity to work opportunities in the city center. For example, *favelas* in Rio de Janeiro rise up the steep hillsides of the city, some built partially on top of one another. The mountainous coastline leaves land available for low-income homes, as most of the flat land is taken for formal housing and commercial development. One problem with settling these areas is that they are often unstable, and a mudslide, flood, or fire can devastate the whole community.

Related Topic: The Updated Model

The updated model of the Latin American city contains a few additional parts that reflect the growth of the region's economy. In the Zone of Maturity, CBD expansion and the growth of high-rise apartments has caused city residents to be concerned that much of the old city character is being lost. In response, a number of cities have promoted the gentrification of the colonial era homes and neighborhoods that remain. Like historical preservation efforts elsewhere, these neighborhoods have value in their tourist appeal and the protection of local cultural heritage. The updated model adds a slice of the Zone of Maturity, which is labeled gentrification.

The Zone of Peripheral Squatter Settlements is expanded in the updated model to reflect the influx of rural-to-urban migration. Within this zone, three features have been added to the model. At the outer end of the commercial spine, shopping malls are common in Latin America; thus a mall is placed here on the updated model. Belt highways have been constructed around a number of major Latin American cities. Therefore, a circular *periférico*, or beltway, is added running through the middle of the zone. Lastly, opposite the mall on the other side of the model, is the industrial park zone. These zones are common and prolific on the outskirts of many Latin American cities, including the *maquiladoras* of northern Mexico, where manufacturing boomed following the passage of the North American Free Trade Agreement (NAFTA).

KNOW THE CONCEPTS

A large number of urban geography concepts may be tested on the AP Human Geography exam. Here are a few categories with examples included.

SUBURBANIZATION

We'll begin with suburbanization due to its many links to the material in the Know the Models section. As a quick review of what was covered in the models, keep these suburban concepts in mind:

- Though many people live in suburban apartments and townhouses, the detached single-family home is the dominant feature on the American suburban landscape.
- The suburbs are predominantly middle-class, economically. However many upper-class suburbs exist, as do some lower-class suburban neighborhoods.
- The first suburban single-family homes appeared in the 1890s. One early example is Riverside, Illinois, outside Chicago, which was designed by Frederick Law Olmstead.
- The original American suburbs were culturally populated by WASPs. This changed between the late 1960s and the 1980s when suburbs become more integrated with Catholic and non-white middle-class populations, who formerly lived in inner city areas.
- In the 2000 census, just over 50 percent of the U.S. population lived in suburban areas.
- Suburbs continue to expand outward and are the largest zones within urban models.

Combine these facts and historical perspectives with the material in the following subsections.

Home Mortgage Finance and Suburban Growth

In post-World War II United States, homeownership increased significantly as a result of **federal home loan programs** such as the G.I. Bill. Several million war veterans and members of the Armed Forces were eligible for guaranteed federal home loans. Other federal programs such as the Federal Housing Administration and the public finance mortgage corporations Freddie Mac and Fannie Mae radically increased the number of mortgages available to the American public with regulated interest rates and limited processing fees.

The result was a massive influx in new home construction during the 1950s and '60s. Prior to World War II, rates of homeownership were limited. After the war, new large-scale housing developments were constructed. Demand was so high that factory-style housing construction methods—using prefabricated parts and specialized construction teams—became common. **Levittowns** were an example of this. In places such as Long Island; suburban Philadelphia; San Juan, Puerto Rico; and other cities, the Levitt Company built large communities of single-family homes in a short amount of time. New Levitt homes could be constructed start to finish in less than 18 days. Many companies copied the Levitt model, and similar communities were constructed around the country during the '50s and '60s.

Service Relocation in the Suburbs

The boom in suburban home construction prompted a number of small service providers to locate in suburban areas. As shown in the multiple-nuclei model, limited suburban business districts began to emerge from 1945 onward. These featured **basic services** like food, the family doctor, fuel, and auto repair, as well as **non-basic services** such as dry-cleaning and gift shops. Later, in the 1970s, the combination of **middle-class flight** from the inner city and the **deindustrialization** of urban manufacturing economies prompted even more and larger service providers to **relocate** to suburban areas.

Two factors causing people to leave cities were at work. First, service providers realized much of their consumer base moved away from the old CBDs that had been the traditional service centers. Simply put, **companies brought the services to where the suburban consumers lived**. Large suburban retail centers and shopping malls became the places of service provision as the same services in the old CBD closed down.

Second, many service firms such as banks, insurance companies, and other white-collar businesses realized their labor force was moving farther and farther out from the old CBD. This influenced many corporate services offices to relocate to suburban CBDs. **Companies brought the service industry jobs to where the white-collar workers lived**. These two factors worked in concert to establish suburban central business districts as the central places of the post-industrial, service economy by the 1980s. As such, the suburban office park replaced downtown office buildings as the contemporary place of business and commerce.

Suburban Sprawl

Suburban **sprawl** is defined as the expansion of housing, transportation, and commercial development to undeveloped land on the urban periphery. In and of itself, suburban expansion is not necessarily evil or bad. The basic question is whether the expansion of suburbs is sustainable. Sustainability within the suburban context can be measured in both economic and environmental terms. Suburban sprawl has been cited as the cause behind a number of problems such as traffic congestion, shortfalls in public school funding, environmental degradation, and economic decline in farming.

A number of suburban political **anti-growth movements** have emerged in the United States and Canada. These groups push for new laws and regulations that slow suburban development and limit approval of new suburban roads and highways. Anti-growth sentiment is especially strong in places where the surrounding rural areas are environmentally sensitive or have historical significance.

An example is Loudoun County, Virginia, where in the 1990s, the county board of supervisors enacted a series of **growth boundaries** that set minimums for the lot sizes of new homes. Supporters were known to exclaim, "Don't Fairfax Loudoun!" in reference to neighboring Fairfax County, which has over a million people in roughly the same-sized area just to the east. On the other side of the argument were real estate agents, developers, and new residents who cited the rapidly increasing home prices in the Washington, D.C., metropolitan area as a reason to increase the local housing supply and loosen the development boundary regulations. Although there have been some changes to the original growth boundaries, much of central and western Loudoun County remains sparsely developed and retains its rural character.

Increased congestion in suburbs from suburban commercial development and sprawl has compelled some suburban residents to move even further away from the city. **Counterurbanization** is

when inner city or suburban residents move to rural areas to escape the congestion, crime, pollution, and other negative aspects of the urban landscape. To maintain their jobs, these people either endure long commutes or participate in the workplace by **telecommuting** and working from home. See more related to sprawl in the section on urban sustainability later in this chapter.

Edge Cities

The concept of the **edge city** was first put forward by journalist (and honorary geographer) Joel Garreau in 1991. Garreau recognized the importance of suburban central business districts to the new service-based economy in the United States and Canada. He also noticed that some suburban CBDs had grown to immense size and economic prominence. Many were built on former agricultural areas and lacked a municipal government, though some were built on towns that expanded into edge cities. To be considered an edge city, a suburban CBD would have the following characteristics:

- Minimum of 5 million square feet of office space
- Minimum 600,000 square feet of retail space
- No city government, except where built atop an existing town
- High daytime population, low nighttime population
- Located at transportation nodes or along commuter corridors

One effect that edge city growth has had in many large metropolitan areas is the large increase in **lateral commuting** between suburbs and edge cities. In some cases, significant amounts of **counter-commuting** have been detected from downtown residences to edge city locations. Traditionally, transportation planners have worked from a hub-and-spoke model of commuting in and out of the old CBD. Large amounts of lateral commuting and counter-commuting have made it necessary to construct transportation plans that have multiple hub-and-spoke traffic flow patterns centered on edge city locations in addition to the old CBD.

The Tyson's Corner Edge City

The quintessential edge city is Tyson's Corner, Virginia. Tyson's is located eight miles west of Washington, D.C., at the intersection of the Capital Beltway and Virginia Routes 7 and 123. The edge city complex of nearly 18,000,000 square feet of office space contains a number of government contracting and telecommunications firms, as well as the headquarters of the National Automobile Dealers Association, USA Today, and Freddie Mac.

At its core are not one but two large regional shopping malls, Tyson's Corner Center and the up-market Tyson's Galleria. In addition, a long string of big-box retail stores can be found along Route 7. Tyson's Corner has more office and retail space than downtown Miami, Florida (not to be confused with the Miami-Ft. Lauderdale metropolitan area).

Examples of other edge cities in the United States and Canada:

Boston Area:	Toronto:	Washington (Maryland):
The Route 198 Corridor	Scarborough	Bethesda
Framingham	Markham	Rockville
Quincy-Braintree	Mississauga	Silver Spring
Waltham	Yorkville	New Carrollton

Chicago Area:	Houston Area:	Washington (Virginia):
O'Hare Airport	Clear Lake	Rosslyn
Northbrook	Greenpoint	Courthouse-Clarendon
Lombard	Greenway Plaza	Ballston
Naperville	Katy Freeway	Reston-Herndon
Oakbrook	Post Oak	Crystal City-National Airport
Schaumburg	Westchase	Dulles Airport

Numerous edge cities can be found in the areas surrounding New York, Los Angeles, and San Francisco. Other metropolitan areas with multiple edge cities include Detroit, Philadelphia, Baltimore, Montreal, Vancouver, Minneapolis, Seattle, San Diego, Dallas-Fort Worth, Phoenix, Atlanta, Orlando, and Miami.

CITY TYPES

In addition to edge cities, described in the previous section on suburbanization, there are a number of city types tested on the AP Human Geography course.

Colonial City

Cities with origins as centers of colonial trade or administration are classified together as **colonial cities**. In the postcolonial era of independence, many of these cities retained their European-style buildings and street networks.

However, newly independent governments have often changed street names and place-names to reflect local culture and social history. For instance, India has renamed the major cities of Mumbai, Chennai, and Kolkata from their respective British colonial names of Bombay, Madras, and Calcutta. Other countries such as Brazil have moved their national capitals away from former colonial capitals. In 1960, the Brazilian government moved from Rio de Janeiro to Brasilia, escaping the congestion of the old colonial capital and building a new modern city planned just for the country's government.

Fall-Line Cities

Larger colonial-era cities in the United States and Canada were most often port locations. The term **fall-line cities** is used to describe the ports that lay upstream on coastal rivers at the point where navigation was no longer possible by ocean-going ships. The fall-line is where a river's tidal estuary transitions to an upland stream at the first set of river falls.

As such, these were economic **break-in-bulk points** (or break-of-bulk) where ships were offloaded and then packed with outgoing trade. In the early part of the industrial revolution, the waterfalls on these rivers could be harnessed for hydropower. Waterwheels turned to drive industrial production of furniture, textiles, and food processing in these early American cities. Thus, many fall-line cities became both centers of trade and manufacturing in the 1800s.

Industrial Fall-Line Cities in the United States:

Boston, Massachusetts
Providence, Rhode Island
Albany, New York
Philadelphia, Pennsylvania
Baltimore, Maryland
Washington (Georgetown), D.C.
Fredericksburg, Virginia
Richmond, Virginia

In Canada:

Montreal, Quebec also lies on the fall-line of the St. Lawrence River. However, it is rarely listed with the other fall-line cities.

Medieval Cities

Medieval cities are urban centers that predate the European Renaissance, roughly 1400 C.E. In addition to Paris, Rome, and London, medieval cities in Europe include Cologne in Germany, Marseille in France, and York in England, all of which were originally settled during the Roman era and developed into significant centers of trade and population during the medieval period.

Outside of Europe, medieval cities include Istanbul, Turkey; Samarkand, Uzbekistan; Kyoto, Japan; and Beijing, China. These all became important centers of trade and governance during the medieval period.

Gateway Cities

Gateway cities are places where immigrants make their way into a country. As a result, gateway cities tend to have significant immigrant populations. Examples of gateway cities include New York City and Miami in the United States; Toronto and Vancouver in Canada; and ports in Europe such as Rotterdam and Hamburg.

Entrepôt

Entrepôt describes a port city in which goods are shipped in at one price and shipped out to other port locations at a higher price, resulting in profitable trade. This type of trade is made possible by the lack of customs duties (import and export taxes) that are common in most other port cities. Entrepôts tend to become large centers of finance, warehousing, and the global shipping trade. Examples include Singapore, Hong Kong, and Dubai.

Megacities

The definition of the **megacity** is a metropolitan area with more than 10 million people. About 20 cities qualify as megacities. You can probably think of the big ones like New York and Tokyo. However, you should keep in mind places like Jakarta in Indonesia (14 million), Dhaka in Bangladesh (13 million), Cairo (12 million), and Mumbai (19 million). Don't try to memorize it, but get to know examples:

Rank	City	Population (in Millions)
1	Tokyo	35.7
2	New York	19
3	Mexico City	19
4	Mumbai	19
5	São Paulo	18.8
6	Delhi	15.9
7	Shanghai	15
8	Kolkata	14.8
9	Jakarta	13.8
10	Dhaka	13.5
11	Buenos Aires	12.8
12	Los Angeles	12.5
13	Karachi	12.1
14	Cairo	11.9
15	Rio de Janeiro	11.7
16	Osaka-Kobe	11.3
17	Beijing	11.1
18	Manila	11.1
19	Moscow	10.5
20	Istanbul	10.1

Megalopolis

The definition of a **megalopolis** is when the urbanized areas of two or more cities merge together, generally through suburban growth and expansion. The name was given by French geographer Jean Gottmann following his travels through the Northeastern United States during the 1950s. Other megalopolises may form in coming decades, which may challenge Tokyo for the world's largest **conurbation**, or combined city.

Examples of Megalopolises:

Northeastern United States: Boston, Providence, New York City, Philadelphia, Baltimore, Washington (also referred to as BosWash). Can also include Arlington, Richmond, and Norfolk, Virginia.

Ruhr Valley: Essen, Dortmund, Duisburg, Bochum

Tokaido: Tokyo, Yokohama

Randstad: Amsterdam, The Hague, Rotterdam

Keihanshin: Kobe, Osaka and Kyoto

Possible Future Megalopolises:

Pearl River Delta: Guangdong, Shenzhen, Hong Kong, Macau

Southeastern Brazil: São Paulo, Rio de Janeiro, Santos, Belo Horizonte

World City

The **world city** designation signifies a metropolitan area as a global center for finance, trade, and commerce. As such, world cities are ranked in levels of importance, and an example of **urban hierarchy** at the global scale. The **first-order world cities** include New York City, London, and Tokyo. The **second-order world cities** include Los Angeles, Washington, D.C., Chicago, Frankfurt, Paris, Brussels, Zürich, Hong Kong, São Paulo, and Singapore. A long list of the **third-order world cities** includes places such as Miami, Toronto, Seoul, Mumbai, Amsterdam, Buenos Aires, and Sydney.

Primate Cities

When the largest city in a country has at least twice the population of the country's next largest city, it can be designated as a **primate city**. In some cases primate cities are several times larger than the next largest city. The situation of **urban primacy** is sometimes blamed when there is uneven economic development within a country. Due to its high population, the primate city can receive a large majority of a country's economic development and investment.

For example, Bangkok, Thailand, is a rapidly developing industrial and service center with an improving quality of life for its residents. By comparison, much of the rest of Thailand remains a chronically underdeveloped rural region without access to many services. Another example: To counter the effects of urban primacy, the French government has regulated industrial investment for

many years, directing portions of public industrial investment to locations away from metropolitan Paris. Regional manufacturing centers such as Marseille, Lyon, Lille, Clermont, and Bordeaux have benefited significantly from this purposeful **decentralization** of industrial development funding.

Examples of primate cities:

Asia/Oceania	North Africa/ Middle East	Latin America	Europe	Sub-Saharan Africa
Seoul, South Korea	Cairo, Egypt	Mexico City, Mexico	Paris, France	Dakar, Senegal
Bangkok, Thailand	Algiers, Algeria	Buenos Aires, Argentina	Lisbon, Portugal	Kinshasa, Dem. Rep. of Congo
Manila, Philippines	Amman, Jordan	Lima, Peru	Vienna, Austria	Nairobi, Kenya
Sydney, Australia	Beirut, Lebanon	Santiago, Chile	Warsaw, Poland	Luanda, Angola

The Rank-Size Rule

Related to the primate city concept is the theoretical notion of the **rank-size rule**. Population geographers have recognized an **urban hierarchy** of city populations, especially in countries with long social histories. Under the rank-size rule, a country's second largest city is half the size of its largest city; the third-largest city is one-third the size of the largest city; and so on, such that the eighth largest city is one-eighth the size of the largest city.

Be able to recognize the formulaic definition for the **rank-size rule**:

The n^{th} largest city is $1/n$ the size of the country's largest city.

However, few countries have city populations that precisely follow the rule. The hierarchy of cities in the United States or in Russia is a close approximation of the rule.

URBAN SOCIETY

In addition to the ethnic and class-based comparisons within the urban models, a few other urban social concepts are important to know. Two significant areas of study are segregation and urban social change.

Segregation

Ethnic neighborhoods are, in some cases, areas of *de facto* **segregation** where no law requiring ethnic or racial segregation exists, yet they nonetheless remain zones of separation. Historically, legal or "*de jure*" segregation existed in the United States in a number of ethnic and racial situations. The segregation laws against African Americans in the "Jim Crow" American South are an example of *de jure* segregation. Asian immigrants in the 1800s were also segregated by law in cities across the country. Today, **Chinatowns** are often seen as cultural districts, but many have their origins as zones where Chinese, Filipino, and Japanese migrants were forced to live.

African Americans have faced discriminatory real estate practices even in northern and western states. Although illegal today, banks and insurers historically engaged in **redlining**, designating neighborhoods on company maps where home mortgage and insurance applications would be automatically denied. The Federal Housing Administration now enforces rules against redlining and cases continue to be prosecuted.

Restrictive covenants were another means of racial discrimination through the real estate system. At the behest of neighbors and local politicians, homeowners added special covenants to their home real estate titles, restricting future sale of a home to white-only buyers. Some covenants also attempted to restrict Jews from buying homes. Such covenants are illegal today under federal fair housing laws. However, title research often uncovers covenants in old titles during home sales—by law these must be ignored.

Even following the Civil Rights Act of 1964, some white urban communities openly engaged in **racial steering**, mainly through the use of real estate agents. When non-whites attempted to buy homes, real estate companies or their agents purposefully drove them to racially specific neighborhoods, regardless of their income or ability to pay for a house. This practice was banned in the Fair Housing Act in 1968, but cases have continued, including three lawsuits in 2006 by state attorneys general against realtors in Illinois, Michigan, and New York.

Urban Social Change

In many cities, a distinct social pattern of **invasion** and **succession** typifies the long-term turnover of neighborhood social and ethnic composition. Over time, one ethnic group or economic class leaves a neighborhood and is replaced by another.

Women and the City

Despite the job losses and outmigration caused by deindustrialization, remaining inner city populations have changed and adapted to the new urban economic landscape. Gender is an important factor in these changes. The percentage of **female-headed households** in urban areas has increased significantly in recent decades. Working mothers are an important demographic group and have been the subject of geographic research.

Geographer **Susan Hansen**, in particular, has focused on the urban transportation patterns of working mothers. Her work shows that the commuting patterns of female heads of household are different from male commuters. Specifically, female heads of household are likely to depend on public transportation and thus must live near bus and subway lines. Their patterns of commuting are not just from home into work. Women heads of household also must access food shopping, health care, and other services and plan their home location accordingly.

Overall, it's important to keep in mind that the **roles of women** in American and Canadian society have changed significantly in recent decades. Women make up half of the urban labor force. Women are increasingly equal (but not yet equal) to men in terms of pay, access to management positions, and political power. Educational statistics show that women are today outperforming men as university students, both in terms of numbers and overall grade performance.

As a result, two sectors of the service economy, health care and education, have seen women surpass men in terms of the number of positions and average pay. Many women hold senior management positions in these sectors, such as hospital administrators and university presidents. Furthermore, medical schools in the United States reported in 2008 that entering classes are 50 percent female for the first time.

URBAN ECONOMIES

Beyond those mentioned in the chapter on economic geography, there are some additional urban geography patterns directly related to economic development.

Gentrification

Gentrification is defined as the economic reinvestment in existing real estate. In recent history, deindustrialization left many older areas of cities neglected and economically depressed. Real estate prices in these neighborhoods devalued and many residents and businesses left. However, by the 1980s, prices had fallen to such a point that reinvestment in certain neighborhoods became profitable. Initially many gentrifiers, or "flippers," saw the opportunity to take old homes and store fronts and convert them into attractive modern accommodations.

This pattern began in many historic areas in the 1970s, when people in the **historical preservation** movement began renovating homes in places such as Greenwich Village in New York City and Georgetown in D.C. Many of the renovations were attempts to recreate homes and buildings near to their original form. But consumer demand for gentrified homes with modern amenities increased. By the 1990s, a whole **cottage industry** in gentrification had emerged where flippers bought old homes at low prices, renovated the homes to contemporary standards, and resold them at handsome profits. Preservation, in these cases, took a back seat to demand for hot tubs, granite countertops, and stainless steel appliances.

In addition to gentrified homes, **commercial gentrification** has occurred in many of the same areas. Formerly shuttered business places were rebuilt as coffee shops, art houses, bars, and restaurants. Mixed-use development is also common. Some old warehouses are converted into stores, office space, and loft apartments in the same building. The phenomenon of gentrification is so widespread that whole newly renovated districts have emerged in many cities.

A few examples of gentrified areas:

New York City:	Greenwich Village, SoHo, Williamsburg
Washington, DC:	Georgetown, Adams-Morgan
Chicago:	Wrigleyville, Hyde Park
Los Angeles:	West Hollywood, Silver Lake
New Orleans:	French Quarter, Garden District
Columbus, Ohio:	Short North-Victorian Village, German Village
Salt Lake City:	Sugarhouse, the Avenues-Federal Hill

In terms of urban social change, it is important to know that neighborhood-scale gentrification has a negative effect of driving out **low-income residents** from the community. As the number of gentrified homes increase, so does the price of even non-gentrified real estate in the area. For many urban poor people, rents increase to unsustainable levels. This is especially hard on elderly residents who have lived in these neighborhoods all of their lives. Finding new homes often becomes difficult, and **displaced elderly persons** can become a costly social welfare program issue for city governments.

Urban Economic Growth

In general, urban governments and investors are concerned with **the infrastructure requirements** of cities. Economic growth tends to occur only in urban areas where utilities, transportation, safety, health, and education needs are met in terms of access and capacity. As was mentioned in the chapter on economic geography, city leaders desire to create downtown areas with services such as specialty retailing, art, music, culture, nightlife, and other “**cool city**” amenities. All of this is done to attract investment to the city in the form of new businesses.

Much of this development is focused on revitalizing old central business districts that have suffered from deindustrialization. Attracting high-paying service industry jobs to old downtowns has become the focus of many city governments. By making the city attractive to young, educated businesspeople, the hope is that major service industry firms in high-paying fields such as technology, computing, research and development, and other **creative industries** such as media and advertising will relocate downtown.

Silicon Valley: Too Much Economic Growth?

Attracting new service firms is not easy, but some places have it easier than others. Companies tend to locate their offices near significant **growth poles** for their industry. Mentioned earlier in this chapter were the high-tech growth poles of Stanford University and the NASA Ames Research Center in the suburbs south of San Francisco. Economic **multiplier effects** around these centers have resulted in a multitude of companies and investment in computer hardware and software development.

The multitude of high-paying technology jobs in recent decades has driven local real estate prices to astronomical levels. As **rare commodities**, standard three-bedroom homes in Palo Alto can cost upwards of \$900,000. A one-bedroom apartment can rent for over \$2000 a month.

Affordable housing for Silicon Valley residents who are not engaged in the technology economy has become a major urban social issue. This is true for a number of other cities in the United States where high pay and limited housing have created **inflated real estate prices**. Cities such as San Diego, Washington, D.C., Seattle, Boston, New York, and Portland, Oregon, saw significant real estate price increases from the late 1990s until 2008. Prices in most of these areas have declined somewhat since the mortgage crash, but affordable homes still remain out of reach for many urban residents, especially as unemployment has increased in 2009.

URBAN SUSTAINABILITY

The sustainability of urban growth and development is measured in economic and environmental terms. Questions of sustainability rarely have simple answers. Political attitudes and practical considerations often create a multitude of problems for urban government leaders and policymakers. Likewise, there tend to be several possible solutions to every sustainability problem. The trick for urban governments is to find solutions that are specific to local needs and that are affordable within the funding capabilities of the city.

Economic Sustainability

In addition to the problem of inflated real estate prices, city governments must address economic sustainability in terms of public services like transportation, utilities, health care access, public housing, and the most expensive: education.

Since deindustrialization, large city governments have had the difficult job of balancing depressed commercial tax revenues with the high cost of maintaining municipal services. One area of criticism lodged at city governments are large municipal payrolls. 80 percent to 90 percent of municipal budgets go to pay the local public workforce. However, to lay off city workers would reduce public services and increase costs of social welfare programs for the unemployed and homeless. New sources of tax revenue are hard to come by. This is why there is development focus on projects like hotel and convention centers (hotel room taxes) and attracting new high-paying service jobs to the old CBD (local payroll taxes).

One approach to combat the high costs of running urban governments is to combine the municipal governments of the core city with the multiple town governments of the surrounding suburbs. The resulting regional municipality would have reduced administrative costs and increased cost efficiency for service delivery. The trick is to come up with a system of shared governance between the involved communities. Regional municipalities have been successful in Canada, where they are common around large cities. In the United States, examples of large regional municipalities include Lexington-Fayette County, Kentucky; Miami-Dade County, Florida; and a metropolitan Pittsburgh municipality is being considered in Pennsylvania.

The Expense of Schools

Suburban governments have similar financial problems. In several areas of the country, the property taxes collected on homes often do not meet the cost and demand for high-quality schools. Think about it; if the typical suburban home produces two children who go into the public education system, and

if schools spend upwards of \$8,000 per student annually to educate them, then property taxes must raise \$16,000 per home each year or be provided by state income taxes. This doesn't include the additional costs of police and fire protection or other local government service programs.

Resistance by homeowners to increased taxes is often expressed by voting down school bond levies, which raise money by increasing property taxes. School systems are caught between a public that does not want to pay higher taxes and parents who demand higher-quality schools. As a result, local school districts are increasingly dependent on state governments to help meet funding needs or are forced to cut extracurricular programs and increase class sizes.

Environmental Sustainability

A number of environmental sustainability issues concern urban governments such as local air pollution, wetlands loss, watershed management, parkland creation, and solid waste management, as well as international issues such as global warming. The problems often center on the question of how urban development will impact the environment.

Urban Transportation

Urban transportation is a frequent topic of environmental sustainability discussion. Traffic **congestion** plagues many cities in the United States and Canada, and there is public pressure on local politicians to come up with solutions. Local leaders are often restricted in what they can do in terms of building highways because of the high cost of road construction and federal clean air regulations that limit emissions. Air pollution from cars has two scales of environmental impact. Locally, **smog** from vehicle emissions is harmful to public health and can create an unsightly haze. Globally, carbon dioxide emissions from cars are a significant source of **greenhouse gases** that contribute to the problem of global warming.

The benefits of **mass transit**, such as having fewer cars on the highway, reduced emissions, and increased accessibility for low income citizens, have become important for almost all cities. There are many public and political supporters of subways, dedicated busways, and street-level light rail networks. Although these systems use up less land than new highways, some property owners whose land is used for these projects complain about their losses. The cost of construction and vehicles is often more than what can be raised from rail and bus fees alone. Who should pay to subsidize mass transit is a contentious issue. It often falls to local governments to find other sources of tax revenue to pay for it.

New Downtown Housing

In addition to gentrified neighborhoods that add to the "cool" value of cities, many cities desire to add downtown housing. This is environmentally beneficial because it stops suburban housing sprawl from encroaching on farmland or sensitive environments such as wetlands, coastal zones, forests, or habitats of endangered species. By having workers live downtown close to their jobs, new downtown housing can also have the added environmental benefit of reducing transportation impacts, fossil fuel use, and air pollution.

City governments work with building developers to target idle downtown land like parking lots and former industrial sites for new construction. Occasionally, even old schools and library buildings

are turned into loft apartment complexes. However, the most popular new approach is **mixed-use buildings** that contain both housing and commercial space. Several large mixed-use developments have been constructed in recent years. These types of developments have been referred to as the "New Urbanism."

Over the previous several decades, many cities have enacted zoning laws, which separate commercial and residential space. One of the significant effects of **New Urbanism** is that it has forced cities to re-examine the sustainability of their zoning codes. Many cities have added new zoning categories that allow for mixed-use development and special planning districts where housing, public transit, and office space is more spatially integrated.

The criticism of mixed-use downtown housing developments is similar to that of gentrification. The purchase and rental prices of many new downtown housing units are so high that only the upper middle-class income earners can afford to live there. To combat this issue, some cities require that a certain percentage of new construction be priced specifically for lower- to middle-income buyers and renters.

KEY TERMS

- bid-rent curve
- CBD (central business district)
- central place theory
- concentric zone model
- edge city
- entrepôt
- fall-line cities
- galactic city model
- gentrification
- Latin American city model
- megalopolis
- multiple nuclei model
- primate city
- redlining
- sector model
- segregation
- site and situation
- squatter settlements
- suburbanization
- threshold and range