



# Chapter 10 Lecture - A Locationally Fixed, Multipurpose Resource: Land

## The Economics of Land Allocation

### Land Use conversion

- Conversion occurs whenever the underlying bid rent function shifts.
- The U.S. and other countries has experienced rapid increase in urban land area over time.
- Main sources of land conversion include:
  - Increasing urbanization and rapid industrialization
  - Rising productivity of the agricultural land

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## The Economics of Land Allocation

### • Agricultural Land: A Closer Look

- Irrigated acreage has been rising.
- The value of agricultural land should increase with the increased prices of food.
  - Corn and ethanol
- Irrigated land faces challenges in growth.
  - Limited replenish water supply
  - Contamination of water
- The Rise of Organic Food
  - The markets have not only been affected by shifts in agricultural land use, they have also been affected by the type of agricultural being practiced.
  - Organic cropland is the fastest growing sector.

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## Sources of Inefficient Use and Conversion

- Sprawl and Leapfrogging
  - Sprawl occurs when land use in a particular area is inefficiently dispersed.
  - Leapfrogging refers to a situation in which new development continues not on the very edge of the current development, but further out.
- The Public Infrastructure Problem: Inefficiently low internalized can create inefficient favors over more distant locations, such as low marginal cost of driving and free parking.

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## Sources of Inefficient Use and Conversion

- Incompatible Land Uses
  - One traditional remedy is zoning
    - Zoning involves land use restrictions enacted via an ordinance by local government to create districts (zones) that establish permitted and special land uses.
    - One limitation of zoning is that it promotes urban sprawl.
- Undervaluing Environmental Amenities
  - Net benefits from positive externalities may be undervalued by land owners. **How does this affect the MB curves for the land?**
  - One remedy involves direct protection of the assets by regulation or statute

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## Sources of Inefficient Use and Conversion

### The Influence of Taxes on Land-Use Conversion

- Taxes can create incentives to convert land from one use to another, even when such conversions would not be efficient.
- The Property Tax Problem
  - A property tax has two components: the tax rate and the tax base. The tax base is determined by either the market value or an assessor.
  - When this tax does not reflect the current activity's use funded by the revenue from that tax, a bias can be created against land-intensive activities.
  - Considering the estate tax, tax-driven liquidity might dominate land conversion, instead of efficiency consideration

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## Sources of Inefficient Use and Conversion

### Market Power

- The "Frustration of Public Purpose" Problem
  - Eminent domain is the doctrine under which government can legally acquire property for a "public purpose" by condemnation as long as the landowner is paid "just compensation."
  - The transfer is mandatory.
  - The compensation is decided by a legal determination.

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## What Is a "Public Purpose"?

The US Constitution only allows the eminent domain power to be used to accomplish a "public purpose." What exactly is a public purpose?

Although acquiring land for typical facilities, such as parks and jails, is settled legal terrain, recent decisions that justify the use of eminent domain to condemn private neighborhoods to facilitate urban renewal by private developers are much more controversial.

For example, in *Kelo v. City of New London, Conn.* 125 S.Ct. 2655 (2005), the court upheld the city's development authority's right to use eminent domain to acquire parcels of land that it planned to lease to private developers in exchange for their agreement to develop the land according to the terms of a development plan.

Those who support this decision point out that large-scale private developments face many of the same market power obstacles (such as "holdouts") faced by the public sector. Furthermore, since large-scale private developments of this type provide such societal benefits as jobs and increased taxes to the community, eminent domain is seen as justified to prevent inefficient barriers that inhibit development.

Opponents suggest that this is merely using governmental power to favor one set of private landowners (the developers) over others (the current owners of the land).

From an economic point of view should publicly regulated private development such as this be allowed to fulfill the "public purpose" test? When it is allowed, should the developers be under any special requirements to assure that public benefits are forthcoming?

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## Sources of Inefficient Use and Conversion

### Special Problems in Developing Countries

- Insecure Property Rights
  - Lack of clear property rights can introduce both efficiency and equity problems.
- The Poverty Problem
  - Poverty may constrain choices of sustainable use of land.
- Government Failure
  - It occurs when the public policies have the effect of distorting land use allocation.

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## Innovative Market-Based Policy Remedies

- **Establishing Property Rights**
  - It can mitigate or avoid the problems of over exploitation that can occur when land is merely allocated on a first-come, first-served basis.
- **Transferable Development Rights**
  - It is a method for shifting residential development from one portion of a community to another.
- **Grazing rights**
  - Grazing permits to farmers
  - The Taylor Grazing Act of 1934 attempted to prevent overgrazing by setting up a system that involved the issuance of grazing permits to farmers.

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## Controlling Land Development with TDRs

How transferable development rights (TDRs) work in practice can be illustrated with an example. The New Jersey Pinelands is a largely undeveloped, marshy area in the southeastern part of the state encompassing approximately one million acres. This area provides habitat for several endangered species. In an effort to direct development to the least environmentally sensitive areas, the Pinelands Development Commission created Pineland Development Credits (PDCs), a form of transferable development rights.

Landowners in environmentally sensitive areas received 1 PDC in exchange for every 39 acres of existing preserved farmland, 1 PDC for every 39 acres of preserved upland, and 0.2 PDC for every 39 acres of wetlands. To create a demand for these credits, developers seeking to increase the standard density on land in the receiving area, which is specifically zoned for development, were required to acquire 1 PDC for every 4 units of increase. The price of credits was set by the market.

To assure that the market would be vigorous enough, the commission also established a Pinelands Development Credit Bank to act as a purchaser of last resort for PDCs at the statutory price of \$10,000 per credit. In 1990 the bank auctioned its inventory at the price of \$20,200 per PDC. By 1997 developers had used well over 100 PDCs. As of 2013 the average price per PDC had risen to \$37,872.34.

Source: Anderson, R. C., & Lehof, A. Q. (1997). *The United States Experience with Economic Incentives in Environmental Pollution Control Policy*. Washington, DC: Environmental Law Institute.; New Jersey Pinelands Development Commission Website. Retrieved from <http://www.state.nj.us/pinelands/pdcbank/>

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## Innovative Market-Based Policy Remedies

- **Conservation Easements**
  - It is a legal agreement between a landowner and private or public agency that limits uses of the land in order to protect its conservation value.
  - Conservation easements can be either sold or donated.
  - It allows the bundle of rights to be treated as separable transferable units.
- **Land Trusts**
  - A conservation land trust is a nonprofit organization that actively works to conserve land using a variety of means.
  - A community land trust focuses on using land for housing and community service, rather than land conservation.

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## Innovative Market-Based Policy Remedies

- **Development Impact Fees**
  - They are charges imposed on a developer to offset the additional public-service costs of new development.
- **Property Tax Adjustments**
  - States sometimes offer programs to discount property taxes to protect a socially desired use, particularly when undiscounted taxes are seen as an inefficient bias against that use.

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## Urbanization - Context and Issues

- **What is urbanization?**
  - **Urbanization is the agglomeration of population in cities:**
    - Growth of the proportion of the population living in cities.
- **Demographic process:**
  - Urban population growth (natural increase or migration).
- **Infrastructure process:**
  - Expansion of urban infrastructures and land use.
- **Economic process:**
  - Creation of secondary, tertiary and quaternary sectors.
- **Creates a society where values and lifestyles are urban.**

The **quaternary** sector of the **economy** is a way to describe a knowledge-based part of the **economy** which typically includes services such as information generation and sharing, information technology, consultation, education, research and development, financial planning, and other knowledge-based services.

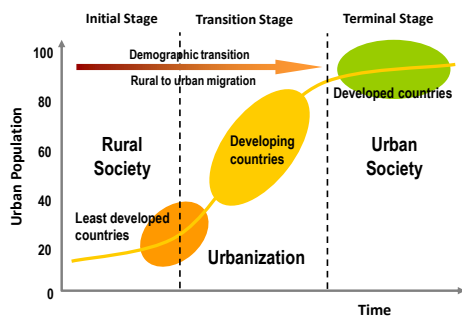
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## Context and Issues

- **Causes of urbanization**
  - Increased social interactions.
  - Institutions representing and supporting a society.
  - Linked with agricultural surpluses.
  - Increased economic efficiency.
  - Specialization, economies of scale and economies of agglomeration.
- **The urban explosion**
  - Urban population growth is the most important change in population geography.
  - About 50% of the global population, 3 billions, lives in cities.
  - Almost all the population growth has occurred since 2000.
  - By 2050, 6.2 billion people will live in cities, more than the current (2000) population.
  - Much of this growth will come in the world's poorest countries

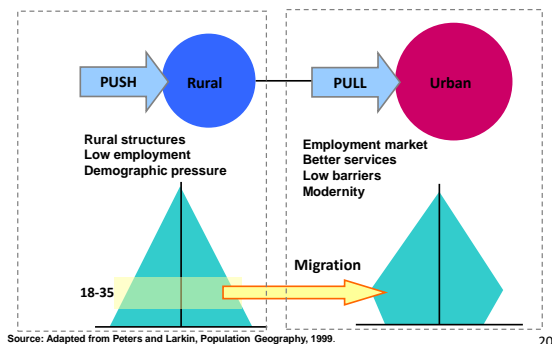
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## Stages of Urbanization



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## Push - Pull Factors for Urbanization in the Third World



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## World City Populations 2020

Here is a list of the top ten most populated cities in the world:

1. [Tokyo](#) (Population: 37,435,191)
2. [Delhi](#) (Population: 29,399,141)
3. [Shanghai](#) (Population: 26,317,104)
4. [Sao Paulo](#) (Population: 21,846,507)
5. [Mexico City](#) (Population: 21,671,908)
6. [Cairo](#) (Population: 20,484,965)
7. [Dhaka](#) (Population: 20,283,552)
8. [Mumbai](#) (Population: 20,185,064)
9. [Beijing](#) (Population: 20,035,455)
10. [Osaka](#) (Population: 19,222,665)

<https://worldpopulationreview.com/world-cities/>

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## The Role of Cities

- **Agglomeration economies:** Urbanization (general) economies, localization (industry or sector) economies.
- Saving on firm-to-firm, firm-to-consumer transportation.
- Firms locating near workers with skills they need.
- Workers locating near firms that need their skills.
- Firms benefit from (perhaps specialized) infrastructure.
- Firms benefit from knowledge spillovers in their and related industries.
- (Also: consumers may benefit from urban amenities.)

### Industrial Districts and Clustering

- Quality of clusters, or Industrial Districts, is a key to sectoral efficiency.
- Unfortunately a majority of developing countries have made only limited progress.
- China: a country that has made huge strides in generating industrial districts over the last decade.

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## Urbanization Costs, and Efficient Urban Scale

- But, cities also entail “congestion costs.”
- Economically efficient urban scale (from point of view of productive efficiency) found were average costs for industries are lowest.
- Generally, differing efficient scales for different industrial specializations imply different city sizes.
- More extensive (expensive) capital, infrastructure required in urban areas.
- Smaller cities may be expected in labor-intensive developing countries.

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## Environmental Problems of Modern Cities



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