

EE460: THAI ECONOMY

Urbanization and Environment

Bhanupong

Lecture 29

Outline

- CBD and agglomeration economies
- Spillover effects and industry location
Urbanization in comparison
- Cost of excessive concentration

Central Business District (CBD)

- CBD refers to the commercial center of a large city
- CBDs are anything but static.
- Within the city, central office functions, since they require frequent contact between firms, will exert a mutual attraction.
- Firms will locate close together rather occupying scattered sites.

If firms can come to locate at the CBD,

- The closer each firm to the CBD, the less costly to it in time and transportation costs in maintaining contact with each other.
- Thus a location near the CBD will reduce the firm's own costs and other costs of maintaining contact with that firm.
- Reilly's law: The law of **retail gravitation** suggests that people are generally attracted to the largest shopping center in the area.

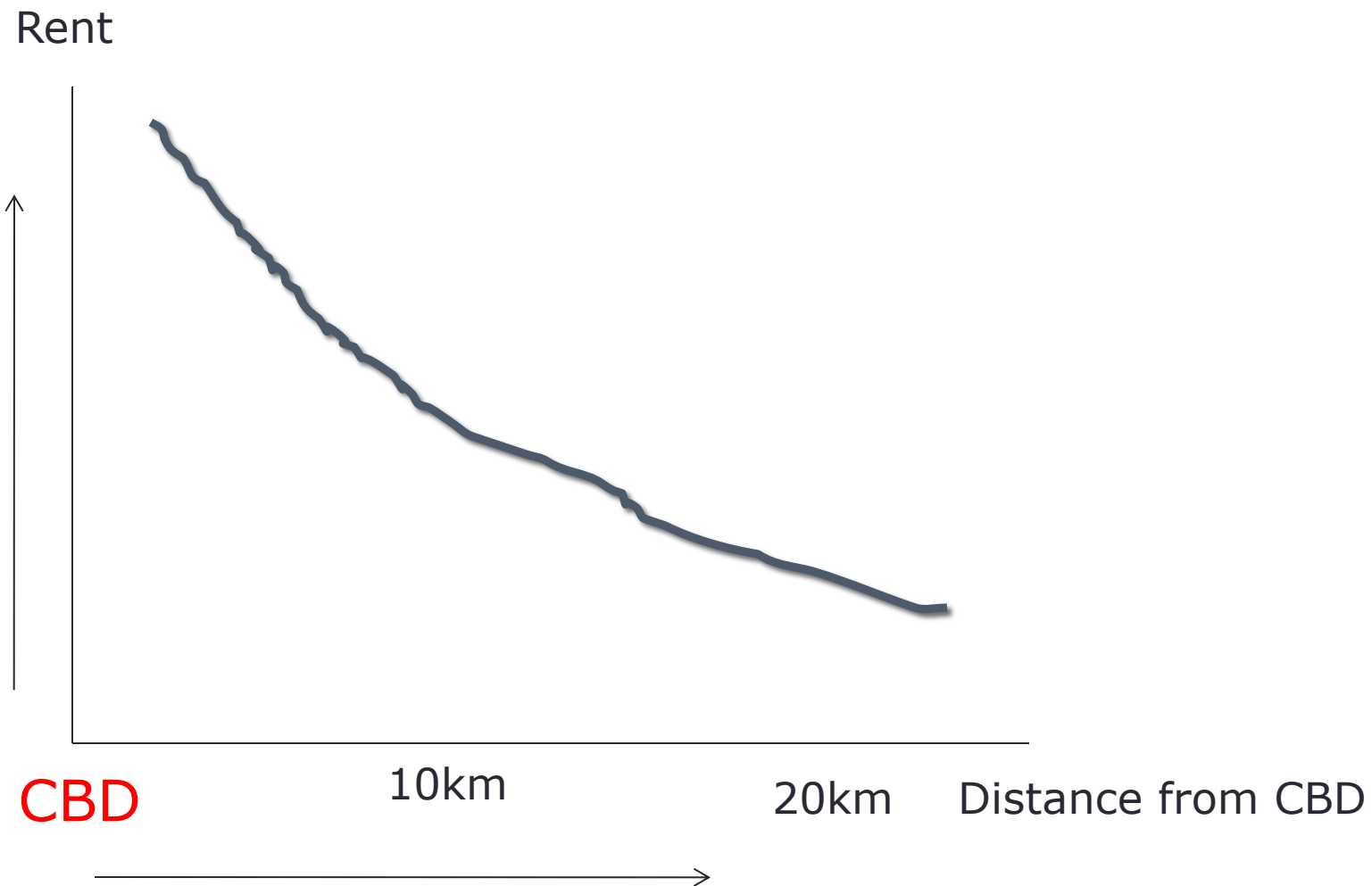
Retail therapy and mall rats

- Non-traded sector
- Private health care services and hospital stock prices
- Shopping malls and the service sector
- Employment-generating sectors

Rent will increase with proximity to the center because:

- (1) Transportation and communication costs will be decreasing and
- (2) Sales will be increasing as distance from the center diminishes.

Rent Gradient



Changing rent gradients: slope and intercept shifts

- Inflation
- Transportation cost
- Traffic jam
- New infrastructure
- De-concentration

A trade-off

- Land prices are required to decline with distance to compensate for higher transportation costs, as individual moves away from the CBD.
- The individual can acquire a larger piece of land in compensation for less convenient access to the CBD.
- This is a trade-off relationship between access to CBD and space.

The rich and the poor

- The cost of commuting depends on distance.
- Wealthy families settle on large plots of relative cheap land toward the city's edge.
- Poor families tend to occupy very small portions of higher priced land near the center.
- In developing countries, there are a large number of slums in capital cities.

Where do you live?

- For the poor family, the increase in commuting costs as distance increases will diminish rapidly the small fund of income available for housing.
- Consequently the poor cannot bid much for locations where commuting cost is expensive.
- The rich, who are prepared to spend large sums on housing, find the barrier of commuting costs rather *inconsequential* and can bid higher prices than the poor for land at distance locations.

Other factors affecting land prices

- Urban land markets are differentiated and can be segmented into sectors by transportation routes.
- Quality of infrastructure and transportation routes in different areas produces different impact on land prices.

Economies of agglomeration

- Firms obtain benefits when they locate near each other.
- Economies of scale and net work effects (network externality).

Economies of agglomeration

- The more related firms that are clustered together, the **lower** the cost of production (firms have competing multiple suppliers, greater specialization and division of labor result) and the greater the market that the firm can sell into.
- Even when multiple firms are in the **same** (competitors) cluster, there may be advantages because that cluster **attracts** more suppliers and customers than a single firm could alone.
- Cities form and grow to exploit economies of agglomeration.

Diseconomies of agglomeration

- Diseconomies of agglomeration take place when additional competition drives down pricing power.
- Large cities attract problems of crowding and congestion.
- It is this tension between economies and diseconomies that allows cities to grow, but keeps them from becoming too large.

Spillover effects

- Economic activity agglomerates in cities because of *local* external economies of scale in production—a plant's productivity is enhanced if other plants are located *nearby*.
- Alfred Marshall(1890) explained spillover benefits for a plant to other plants in the neighborhood in terms of ***Information spillover*** about technology, suppliers, purchases, and market conditions.

Who need a cluster of an industry?

- Industrialization occurs *disproportionately* in urban areas because of opportunities to exploit scale economies of local agglomeration.
- In the cluster, there are scopes for local intra-industry specialization of plants in specific activities

Benefits of Spillover Effects

- Increased diversity of suppliers to local producers.
- Search for workers and matching improvements between workers and firms in local labor markets.
- The proximity of buyers and sellers reduces transportation costs of trade and search costs in retailing.

Where to locate your firm

- Production in **large** metropolitan areas focuses on **services** and **non-standardized** manufacturing.
- **Standardized** manufacturing production tends to be de-concentrated into **smaller** and medium-size metropolitan areas.

Standardized products

- Plants producing ***standardized*** products, such as textiles, steel, ceramics, food processing, *learn mostly from other plants in the same industry locally.*
- They benefit primarily from what are called *localized economies.*
- Urbanization economies are derived from the overall local scale of a metropolitan area.

Non-standardized products

- Firms engaged in non-standardized products benefit from urbanization economies.
- The non-standardized production includes special-order machinery, **fashion apparel**, **entertainment services**, and publishing.
- Plants for non-standardized products need to obtain specialized services beyond their own industry.
- They need **large local market** to test their products; they need to stay in mega or big cities

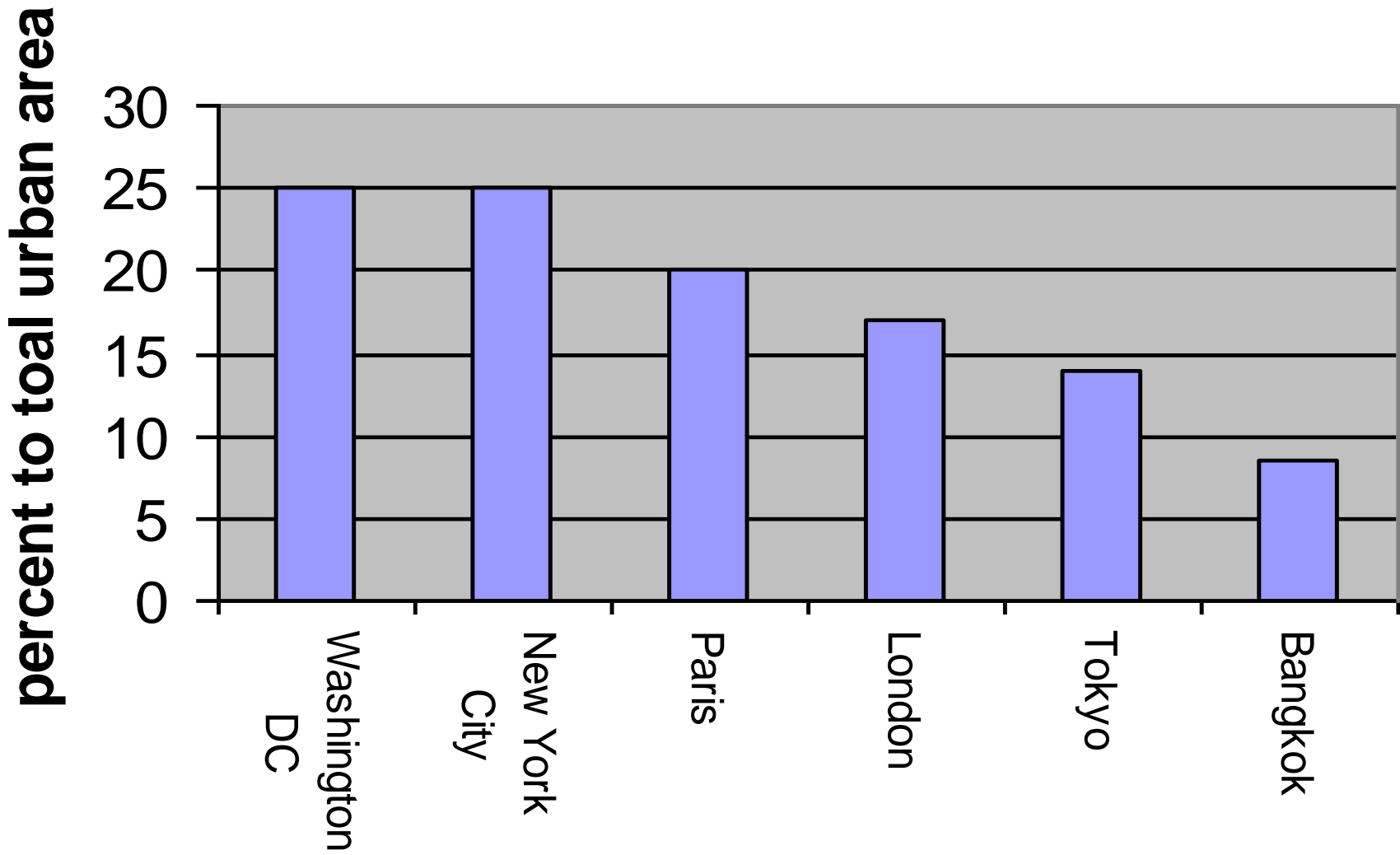
Why too much concentration in mega cities

- Underdeveloped institutions for urban planning and management
- Inadequate human resources
- Externalities of congestion and pollution are relatively *underpriced* in megacities, relative to small cities, encouraging overpopulation in larger cities.

Consequences of heavy concentration

- Excessive concentration significantly **reduces** economic growth.
- **Growth losses** in countries with excessive mega-cities resulting from significantly deficient human and physical capital investment.
- Wages, land and infrastructure costs escalate with mega-city size relative to scale benefits for standardized products, making it more difficult to attract foreign investment and to remain competitive in world markets.

Urban Road Area



The cost of travel and transportation in Vietnam is the highest in the world

- Transport costs in Vietnam account for 11.8% of GDP, compared to less than 4.5% in the US, 4.8% in Singapore, 5.8% in the EU, and 6% in Japan.
- Currently the total surface area for traffic in HCM City accounts for 1.7% to 2% of the total urban land, so the figure may keep rising.
- However, the costs of travel and transport in Vietnam are high, not only from traffic jams but from many other reasons
- Besides official costs such as fuel, labor, vehicle depreciation, the cost of transportation in Vietnam is because transport service providers have to "bear the huge cost that they cannot reveal."
- What are they? They are bribes for traffic police, for poor-quality roads, for prolonged road projects or for poor transport management.

Consequences of traffic congestion

- Huge economic cost
- Alarming levels of CO, black smoke, Hydrocarbon, noise level and particulate matter (PM) .
- Road traffic is responsible for 70% of the dust.
- The main sources of dust are diesel and motor cycle exhaust and construction sites.

Undertaken measures

- Premium unleaded gasoline was introduced in 1991 and absolutely unleaded gasoline in 1996.
- January 2007: large vehicles with diesel engines met European Emission Standards on CO(4.5), HC(1.1), NO_x(8) and PM(0.3)

Policy outcome

- After the move from leaded to unleaded gasoline, and the introduction of premium unleaded gasoline, ***ambient lead*** levels in 2001 were more than 20 times lower than 1991 levels.
- A law in 2004 requires lower sulfur content in gasoline.
- Tax incentives are given to lower-sulfur diesel (ULSD) for 150-ppm sulfur fuels as a first step toward ultra-low 50-ppm sulfur ULSD, in line with European emission control levels.

Cleaner air

- Air quality in Thailand has improved significantly in the past decade.
- Bangkok's air quality is rated ahead of Beijing, Jakarta, New Delhi and Manila, according to World Bank Environment Monitor (73 air monitoring stations across Thailand).
- Bangkok still trails Hong Kong, Singapore Taipei and Tokyo.
- Lead, dust and carbon monoxide in Bangkok and urban areas had decreased to an acceptable level.

Further costs of excessive concentration

- Traffic accidents
- Health costs from exposure to high level of air and water pollution
- Contamination of ground water
- Gastrointestinal and infectious diseases
- Poor air quality
- Time lost due to long commutes

What are PM10 and where from?

- Smaller than 10 microns or 1/7 of the thickness of a human hair.
- PM10 come from motor vehicles, slash-and-burn farming, waste burning, forest fires, heavy industries, and dust from construction sites
- PM 10 is among the most harmful of air pollutants, When inhaled, these particles lodge deep in the lungs and can cause many kinds of respiratory illness
- Source: Pollution Control Department

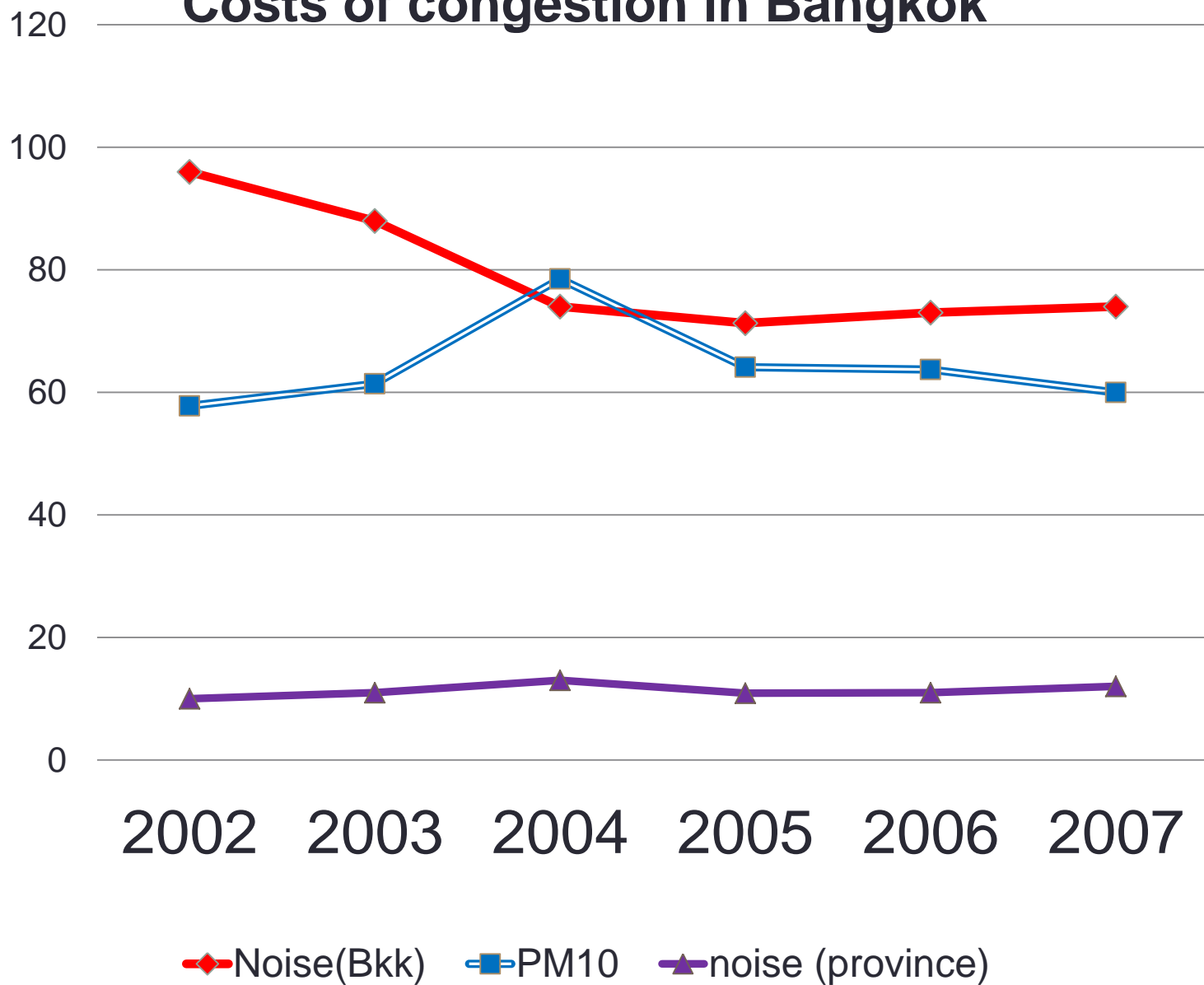
PM 2.5

- The effects of inhaling particulate matter that have been widely studied in humans and animals include asthma, lung cancer, cardiovascular disease, respiratory diseases, premature delivery, birth defects, and premature death.
- The World Health Organization (WHO) estimated in 2005 that “Fine particulate air pollution (PM(2.5)), causes about 3% of mortality from cardiopulmonary disease, about 5% of mortality from cancer of the trachea, bronchus, and lung, and about 1% of mortality from acute respiratory infections in children under 5 years, worldwide
- Short-term exposure at elevated concentrations can significantly contribute to heart disease. A 2011 study concluded that traffic exhaust is the single most serious preventable cause of heart attack in the general public, the cause of 7.4% of all attacks

How to alleviate urban concentration

- Investment in interregional transport and telecommunications to facilitate de-concentration of industry.
- The government creates investment promotional zoning to attract investors to rural areas.
- Fiscal de-concentration: small cities can raise fiscal resources and provide services need to compete with primate cities for industry and population.

Costs of congestion in Bangkok



Noise pollution: Not more than 70db, please?

- **Maximum permissible** level of noise was at 70 decibel.
- The average noise level along the streets in Bangkok in 2002 on the average of 24 hours was in the range **65 to 84 decibel**.
- At the 22 July Circle, 99 % of the data collected exceeded the maximum 70 decibel.

Irrevocable damages

- When exposing yourself to noise, think of three things: How loud, how long, and how close?
- A normal conversation is about 60db. Louder than 85db may damage your ears.
- Repeated exposure to noise-emitting machines and engines such as motorcycles can erode hearing more slowly but result in irrecoverable damaged ears.

Noisy people

- Children become **aggressive** as their parents shout at one another.
- It inadvertently breeds a society full of aggressive people who cannot communicate with one another.
- Some even become suicidal, having suffered from persistent ringing in their ears.

A modern plague

- Environmental noise pollution is a threat to health and well being. More severe and wider spread because of population growth, urbanization, and the use of increasingly powerful and highly mobile sources of noise.
- WHO survey in Bangkok 10 years ago indicates:
- 21.4 % of Bangkok's population who lived along side the roads suffered from sensory neural hearing loss
- In 1990, 13.6% of the Thai population had some form of hearing disability, 3.9% of students in Bangkok, 6.1% of students in rural areas had hearing problem.
- In 2014?
- www.geocities.com/quietbangkok
- www.nonoise.org

Summary

- Business cycles are related to booms and bust in housing markets because there are lags in supply adjustment to price changes.
- This is a trade-off relationship between access to CBD and space, which explains choice of residential location among the rich and the poor in the city.
- Agglomeration economies explains choice of firms and business location as firms receive benefit network externality and spillover effects of being close together.

Summary

- Urbanization in developing countries is so rapid that they cannot prepare for the smooth transformation from rural to urban structure.
- Cost of excessive concentration prevails in mega cities.

BANGKOK DANGEROUS

Areas with excessive levels of pollution.

Benzene*



- Chulalongkorn Hospital
- Chokechai Si Road
- Din Daeng community
- Bansomdejchaopraya Rajabhat University, Thon Buri district

Small dust particles



- Rama IV, Rama VI, Phahon Yothin roads
- Din Daeng area

Noise level:



- Lat Phrao Road
- Tri Phet Road

***Note:** Benzene is a chemical used in manufacturing. It is also present in petrol and tobacco smoke. Contact with low to moderate levels of benzene over a short time can cause headaches, vomiting, disorientation, shakiness, elevated heart rate and loss of consciousness.

State whether you agree or disagree with the following statement.

Provide brief reasons

1. Despite high rent, many poor people choose to live in slums in Bangkok, because of large wage differentials between urban and rural areas.
2. Since defense spending is public goods, the optimal level of military expenditure depends more on the level of threat by enemies rather than tax revenues.
3. The inflation rate in April 2010 was contained at 3 % year-on-year; inflation targeting strategy is effective in Thailand.

State whether you agree or disagree with the following statement.

Provide brief reasons

4. Wider interest spreads of small commercial banks in Thailand indicated that they were less efficient and experienced lower profits than larger banks.
5. An proper exchange rate policy should aim at maintaining the stability of the bath-dollar exchange rate to avoid excessive foreign exchange risk that could lower international competitiveness of the export sector.
6. Other things equal, political violence in 2014 will reduce Thailand's long-term growth path.
7. The gravity model suggests that Thailand should engage in free trade agreements with neighboring countries rather than countries in other parts of the world.

State whether you agree or disagree with the following statement.

Provide brief reasons

8. The sharp rebound of manufactured exports in the first quarter of 2010 underscored the increasing competitiveness of Thailand's manufacturing sector.
9. In 2010, as oil prices increased due to world economy recovery, it was likely that income inequality in Thailand would be worsened.
10. Both Baumal-Bowen cost disease and the Dutch disease have dissimilar impacts on the Thailand's international competitiveness.