“hard (eco) theory”
economic regional development theories
why do cities exist?

adam okulicz-kozaryn

adam.okulicz.kozaryn@gmail.com

this version: Saturday 3rd February, 2018 19:54

outline

a quick and general intro to eco theory

general development theories (Blakely and Leigh, 2009, ch3)

urban eco axioms (O'Sullivan, 2009, ch1)

why cities exist? (O'Sullivan, 2009, ch3)

city size (O'Sullivan, 2009, ch4)

urban growth (O'Sullivan, 2009, ch5)

NECESSARY readings

- Friedman (1970)
- Wirth (1938)
  - http://www.economist.com/node/18111592
  - http://www.economist.com/blogs/prospero/2011/11/triumph-city
  - http://www.governing.com/is-it-time-to-retire-jane-jacobs-vision-city.html

Barro, R. (1991): "Economic growth in a cross section of countries," The Quarterly Journal of Economics, 106, 407–443.

——— (1999): "Determinants of democracy," Journal of Political Economy, 107, 158–183.

Berry, B. and A. Okulicz-Kozaryn (2012): "The city size distribution debate: Resolution for US urban regions and megalopolitan areas," Cities, 29, Supplement 1, S17–S23.

Berry, B. J. L. and A. Okulicz-Kozaryn (2009): "Dissatisfaction with City Life: A New Look at Some Old Questions," Cities, 26, 117–124.

Bettencourt, L. and G. West (2010): "A unified theory of urban living," Nature, 467, 912–913.

Bettencourt, L. M., J. Lobo, D. Helbing, C. Kühnert, and G. B. West (2007): "Growth, innovation, scaling, and the pace of life in cities," Proceedings of the National Academy of Sciences, 104, 7301–7306.

Bettencourt, L. M., J. Lobo, D. Strumsky, and G. B. West (2010): "Urban scaling and its deviations: Revealing the structure of wealth, innovation and crime across cities," PloS one, 5, e13541.

Blakely, E. and N. Leigh (2009): Planning local economic development: Theory and practice, Sage Publications, Beverly Hills CA.

Christensen, C. (1997): The innovator's dilemma: When new technologies cause great firms to fail, Harvard Business Review Press.

Florida, R. (2008): Who's your city?, Basic Books, New York NY.

Frank, R. H. (2005): "Does Absolute Income Matter," in Economics and Happiness, ed. by L. Bruni and P. L. Porta, Oxford University Press, New York NY.

Friedman, M. (1970): "The social responsibility of business is to increase its profits," The New York Times Magazine.

Glaeser, E. (2011): Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier, Penguin Press, New York NY.

Green, G. and A. Haines (2012): Asset building & community development, Sage Publications, Beverly Hills CA.

Jacobs, J. ([1961] 1993): The death and life of great American cities, Random House, New York NY.

Mankiw, N., D. Romer, and D. Weil (1992): "A contribution to the empirics of economic growth," The quarterly journal of economics, 107, 407–437.

O'Sullivan, A. (2009): Urban economics, McGraw-Hill.

Schkade, D. and D. Kahneman (1998): "Does living in California make people happy? A focusing illusion in judgments of life satisfaction," Psychological Science, 9, 340–346.

Stutzer, A. and B. Frey (2003): "Stress That Doesn't Pay Off: The Commuting Paradox," IZA Discussion Paper.

Wirth, L. (1938): "Urbanism as a Way of Life," American Journal of Sociology, 44, 1–24.

ps1

- i post comments in sakai's dropbox as comments.txt
- ask me questions about my comments

ps1 comments

- be specific; eg instead of saying that there is Whites flight from Camden, show numbers...
- think about the phenomenon–is it big or small?
- maybe there are fewer Whites everywhere ?
  - lower fertility than other races...
  - lots of Asian and Hispanic immigration, etc

ps1 comments

- is a number big or small ?
- it depends on the comparison
- all numbers mean nothing without a comparison/base case/yard stick
- say, is my income of $40,000 big or small?
  - yes in Camden, not in NYC (given median)
  - yes for a HS dropout, not for a PhD (given median)
  - yes for a person in 20s, not in 40s (given median)
  - yes in rural China, not in Beijing (given median)
  - yes in 1870, not in 2012 (given median)
- and you can repeat the above given your family, given your field, etc

show most meaningful quantities

- number of single-parent families, number of people in poverty etc
- should be adjusted for population!
- all dollar values should be adjusted for inflation!
  - when you present something ask yourself "so what?"
  - why does it matter ? how it matters? how i can rephrase/redo it so it's more meaningful
- what's new ? what's unexpected ? otherwise, what's the point of creating n-th document that reiterates what everybody knows
- surprise me; in-depth analysis, or broad approach (several disciplines), unique data, etc

show me some sophistication

- do something that only a PhD can do
- eg a basic impact analysis of, say a policy enacted, eg govt takeover of Camden–may start with a graph
  - eg 1918 pandemic is an "intervention" `https://www.stata.com/features/overview/i/graph-editor-life-graph.png`
- RD
  - `http://www.socialresearchmethods.net/kb/quasird.php`
  - `http://changingminds.org/explanations/research/design/regression_discontinuity.htm`

population flight

- many complain about population decline in Camden and Philadelphia
- fine, but... also important who is leaving: most energetic entrepreneurial, etc?
- the other thing is whether we should care about places or about people or both
- maybe better give every poor person in Camden a check for $100,000 than spending millions on the city...
  (with some spending restrictions, so they won't buy LV bags, Lexuses, and drugs)
- `http://are.berkeley.edu/~ligon/Teaching/EEP100/glaeser05.pdf`

lit

- since many of you are doing ps about cities and cities that need redevelopment

  you may have a look at Glaeser (2011), Jacobs ([1961] 1993)

- about the future of the cities
  - convertible cars and apartments

    `http://www.ted.com/talks/kent_larson_brilliant_designs_to_fit_more_people_in_every_city.html`

Glaeser's Triumph of the city

- some overviews
  - http://www.economist.com/node/18111592
  - http://www.economist.com/blogs/prospero/2011/11/triumph-city
  - http://www.governing.com/topics/economic-dev/is-it-time-to-retire-jane-jacobs-vision-city.html
  - slums are a sign of cities vitality...poor will be worse off in less dense areas
  - better market forces than community preservation and organizing

when presenting/comparing data

- graphs are best, second tables, and third numbers in text
  - if you have 1, 2, or 3 numbers put them in text
  - if it's several, eg 6, have a table
- if more than that have a graph
- graphs are almost always the best

data quality is important

- especially if you use non-government (eg census) or non-scholarly(eg PAR) sources
- compare several sources and see if you get similar numbers
- do the numbers look right?

cite!

- most of you don't cite sources enough...

quality trumps quantity

- i'd rather have two very meaningful, careful, to the point pages
- than 20 pages of everything that comes to your mind...

general notes on theories

- last class, we've been talking about data
- don't forget it
- you want to connect data and theory (and literature)
- therories need to be tested in different settings
- see if they work; you may get some counterintuitive results

general notes on theories

- whatever you believe in, you'll find a theory to support it
- hence, testing is important !!! (your paper: have theory(ies) and test)
- i am trying to be impartial...and present a wide range
- O'Sullivan (2009): economics: market forces
- Green and Haines (2012): sociology, public policy: social forces
- Blakely and Leigh (2009) somewhere in the middle...
- today we'll focus on economics, later on others

some key economics papers

- Barro (1991)
- Mankiw et al. (1992)

discussion

- starting today, I'll be talking less and you'll be talking more
- let's have some class discussions
- when i talk about things, please jump in and share your perspective

outline

a quick and general intro to eco theory

general development theories (Blakely and Leigh, 2009, ch3)

urban eco axioms (O'Sullivan, 2009, ch1)

why cities exist? (O'Sullivan, 2009, ch3)

city size (O'Sullivan, 2009, ch4)

urban growth (O'Sullivan, 2009, ch5)

opinion slide: my problem with economics

- economic theories are wrong much of the time
- some are wrong most of the time
- still, most eco theories are somewhat useful
  - they clarify thinking
- the main problem though is that economists think that they and their theories are best in soc sci

Adam Smith

- "invisible market hand", oversimplifying: pub pol/adm should not exist
  - market regulates itself...

    `http://tutor2u.net/economics/gcse/images/demand_supply_excess_demand1.gif`

    `http://www.pcecon.com/notes/noteimages/equilibrium/incrdemsup2.jpg`
- division of labor:
  - if you just do one thing, you get better at it and can do it faster
  - pin factory
  - but less creativity, numbness
  - Smith lived in 18th century...had he lived now he could put

John M Keynes

- no, we actually need government
- market won't regulate itself perfectly
- need government intervention
- eg increase public spending when economy is down to stimulate it
  (see also Paul Krugman, Joseph Stiglitz)
- [interestingly, trump is up for public spending on infrastructure!]

division of labor is great!

- still, division of labor is a must !
- think about it...
- you cannot produce everything you need yourself...
- even simple stuff, like a pen, or a car seat
- you're better off doing whatever you do, getting paid for it
- and paying other people for other things
- everyday things like a car, or a train–think how many people worked on them

problems with division of labor

- you become like an automated machine, and you don't get the whole picture
- in research, too
- eg in medical research people work on very specific specialized tasks
  - the research teams are big: dozens or hundreds of people
  - and then the PI, who is more of a manager than a scientist, puts everything together and gets credit
- we still need great specialization to push research forward
  - but at the same time we need interdisciplinary people with broad (but shallow knowledge)

within and among

- division of labor happens within firms
  - different employees specialize in different things
- and among firms
  - different firms specialize in different things

economies of scale=bigger can do more

- bigger companies can produce cheaper and provide cheaper services
- think local grocery store vs Walmart
  "everyday low prices" "save money, live better"
- but problems: monopoly/oligopoly
  - destroying diversity (local groceries), driving profits for suppliers down
  - outsourcing health insurance to Medicaid
- yes, everyday low prices, but is life better?
  Something Wall-Mart This Way Comes
  `https://www.hulu.com/watch/250057`

how economic growth happens?

- you need several things:
- physical capital
- labor
- technology
- and human capital
- (later we will talk about other capitals)
- for more discussion see Barro (1999)

outline

a quick and general intro to eco theory

general development theories (Blakely and Leigh, 2009, ch3)

urban eco axioms (O'Sullivan, 2009, ch1)

why cities exist? (O'Sullivan, 2009, ch3)

city size (O'Sullivan, 2009, ch4)

urban growth (O'Sullivan, 2009, ch5)

neoclassical economic theory (M. Friedman)

- also called "the invisible hand", based on Adam Smith
- equilibrium of economic systems
- mobility of capital
  - if capital can flow without restrictions, all economic systems will achieve equilibrium
  - it would mean that ghettos would attract capital because of low cost; but they don't
- if the model worked, all areas would have about the same level of development; obviously, it doesn't work...
- but still it influenced deregulation in banking, utilities, etc
- and still an useful theory

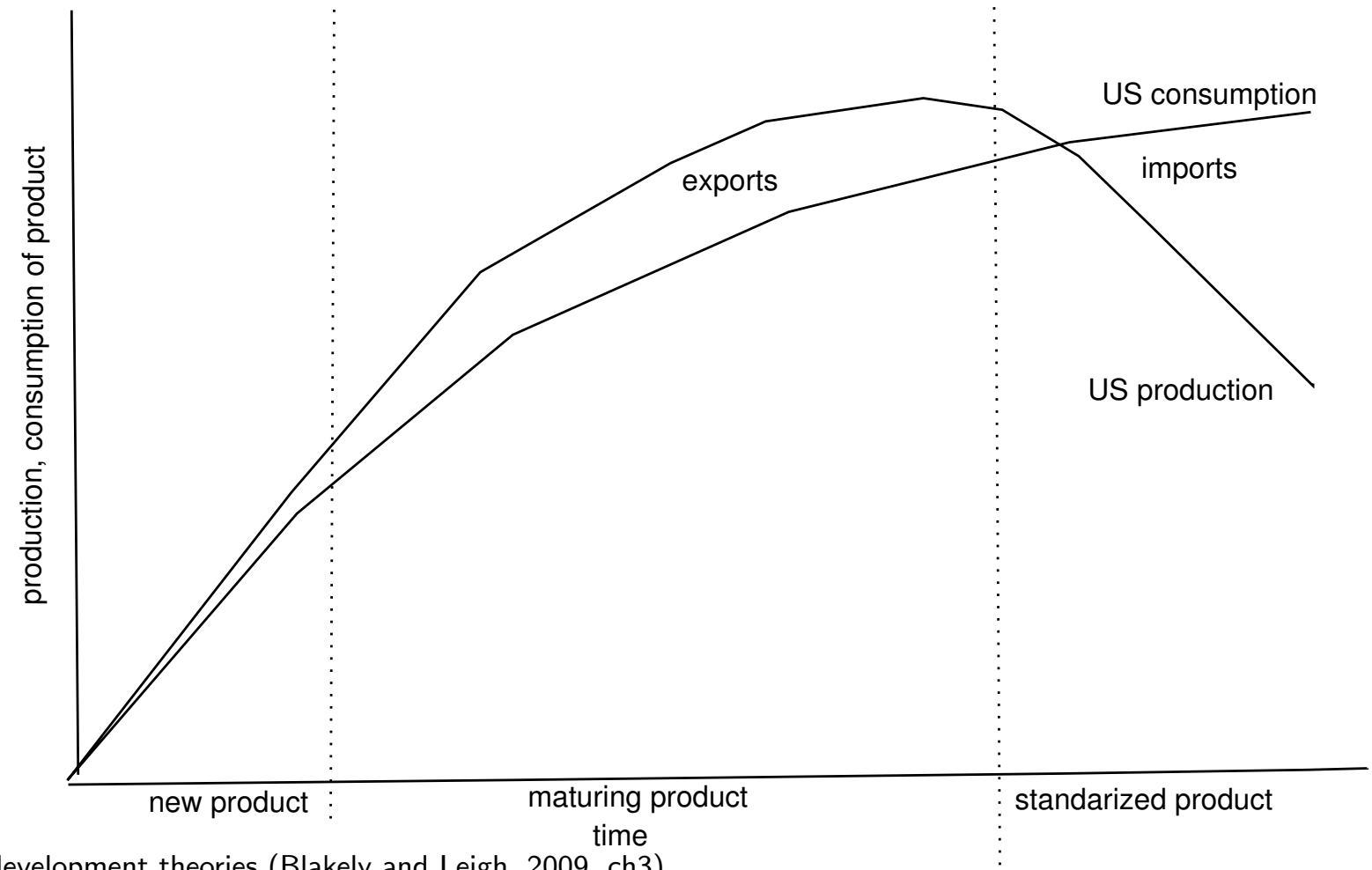
economic base

- localities should use local labor and materials and export it outside
- provide incentives (tax breaks, subsidies) for firms to start export-based businesses
- useful for hi-tech (it can be exported anywhere; eg ipad)
- but it risks being solely reliant on export and hence sensitive to demand fluctuations
- [but most things are produced globally (eg ipad)]

product cycle

- production of a product goes through cycles
  - first, it is expensive to produce, and finds demand among educated and rich
  - then it matures and starts to find buyers in the larger scales, also production process becomes more widely available and less expensive
  - finally product declines

product cycle



location

- how firms chose location? and hence how places grow and decline
- firms chose location that minimizes costs of production and transport
- if a final product weights less than inputs, firm would locate at inputs source
- they are called weight loosing or input oriented
  - e.g steel, ore refining, fruit canning

location

- if a final product weights more than its inputs firm would locate close to the market
  - eg auto assembly, baking
- but transportation costs declined so it makes more sense to think in terms of logistics rather than transport

location

- other things matter too: cost of energy, education, local government, weather, etc
- and other things matter more and more–World is changing fast...
- eg data centers would locate where energy is cheap and where it is cold
  (computers like cold, otherwise need to use A/C)

central place

- most relevant to retail activity
- each urban center is supported by series of smaller places that provide resources (industries and raw materials) to the central place which is more specialized and productive
- and these smaller places are surrounded by even smaller places, and so on

central place

- the urban center contains specialized stores and services that serve the entire region
  - corporate lawyers, investment bankers, heart surgeons, symphony orchestra
  - haircuts and car repairs are everywhere
- theory says that the development of the central place will improve the whole region

  more about central theory later today...some graphs etc

theory in practice-attraction models

- to attract people and businesses...
- ...by offering incentives and subsidies
- it used to be about attracting businesses
- now also attracting population, e.g the creative class (Florida, 2008)
- people bring buying power and skills that attract employers
- there was an ad on Cooper st: become a homeowner in Camden, get $15k in incentives
- R faculty were encouraged during the orientation to live locally

outline

a quick and general intro to eco theory

general development theories (Blakely and Leigh, 2009, ch3)

urban eco axioms (O'Sullivan, 2009, ch1)

why cities exist? (O'Sullivan, 2009, ch3)

city size (O'Sullivan, 2009, ch4)

urban growth (O'Sullivan, 2009, ch5)

the axioms...

- ... are self-evident truths

  actually, they are not that self-evident, but still useful when thinking about regional development
- economists are like physicists – they're pretty sure they know the truth
- the five axioms of urban economics follow

prices and locational equilibrium

- prices adjust to achieve locational equilibrium

  it happens when no one has an incentive to move

- prices for better spots are higher
  - eg you'll pay $1,500 rent for a 1 bdrm in Philly, and $200 in Camden
  - had the prices been the same, everybody would move out of Camden
  - (yes, Camden is loosing population, but there are also other reasons, and if the housing prices were higher it would lose much more people)

self-reinforcement→extremes

- self-reinforcing effects generate extreme outcomes
- like a vicious(virtuous) cycle
- self-reinforcing effect is a change in something ... that leads to additional changes in the same direction
- eg many artists may locate in some city
  - then they will share ideas, collaborate, compete
  - share studios, tool suppliers, etc
- and all of the above would attract more artists and so forth...

externalities→inefficiencies

- externalities cause inefficiencies
- (for economist an inefficiency means that not only the buyer/seller gets benefits/costs)
- externality is something external to a transaction
  - eg driving a car produces air pollution, and its cost is borne not only by you, but by everybody else
  - eg paying for education not only improves myself, but also my social network, community, etc
- [probably there's no transaction with exactly zero externalities]

economies of scale

- production is subject to economies of scale: cost decreases as output increases (think Wallmart); 2 reasons:
  - indivisible (lumpy) inputs that cannot be scaled down
    eg to produce a CPU, you need a bunch of equipment, whether you produce 1 or 1,000 per day
  - factor specialization: the more people you employ, the more they specialize and the more efficient they become: continuity: you don't spend time switching from one task to another; proficiency (experience and learning)
    " A jack of all trades is master of none"
- it's critical for urbanization; if not economies of scale (and division of labor), there would be no cities

competition and profit

- competition generates zero economic profit
- when there are no restrictions on the entry into a market, firms would enter until profit is zero
  (there are always some restriction on the entry)

outline

a quick and general intro to eco theory

general development theories (Blakely and Leigh, 2009, ch3)

urban eco axioms (O'Sullivan, 2009, ch1)

why cities exist? (O'Sullivan, 2009, ch3)

city size (O'Sullivan, 2009, ch4)

urban growth (O'Sullivan, 2009, ch5)

regional development vs cities

- much of regional development is about cities
- over 80 % of the US population is urban
- even more of production, R&D and innovation is urban

why do cities exist?

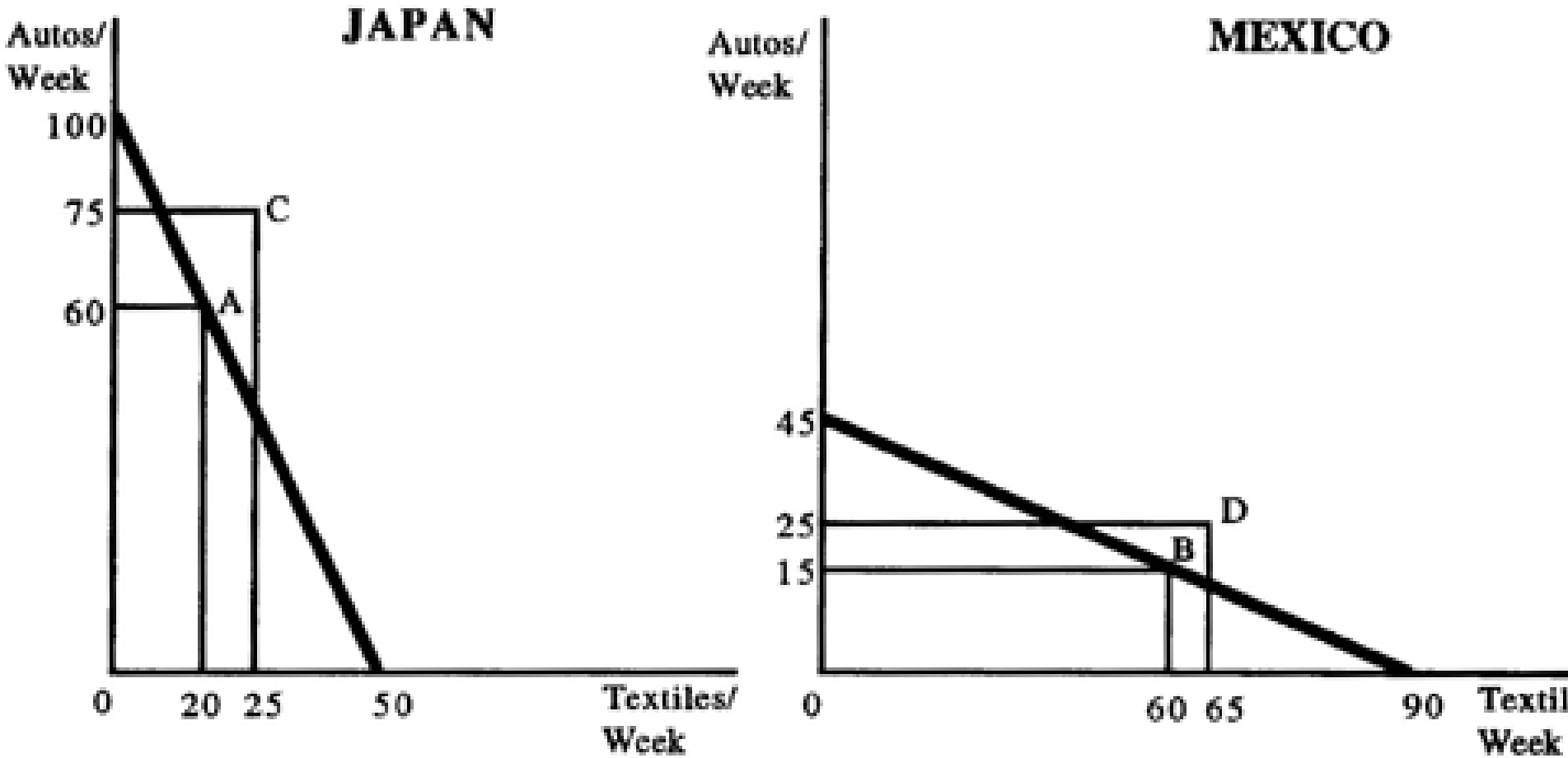
- because people are not self-sufficient (Smith's labor specialization)
- and production, consumption and exchange are easier done in cities
- think of everyday things you use, even the simple ones like a coffee table...

...coffee table

- grow a tree, cut the tree, process it, paint it, ship it from China,
- and you need some equipment that somebody else needs to produce (axe, saw, chemicals for paint, etc)
- how about a car, airplane, washing machine, etc etc
- in everyday life we rely on work of thousands of other people
- and the know-how accumulated over centuries

comparative advantage

◇



//wps.aw.com/aw_miller_econtoday_13/29/7556/1934379.cw/content/index.html

comparative advantage

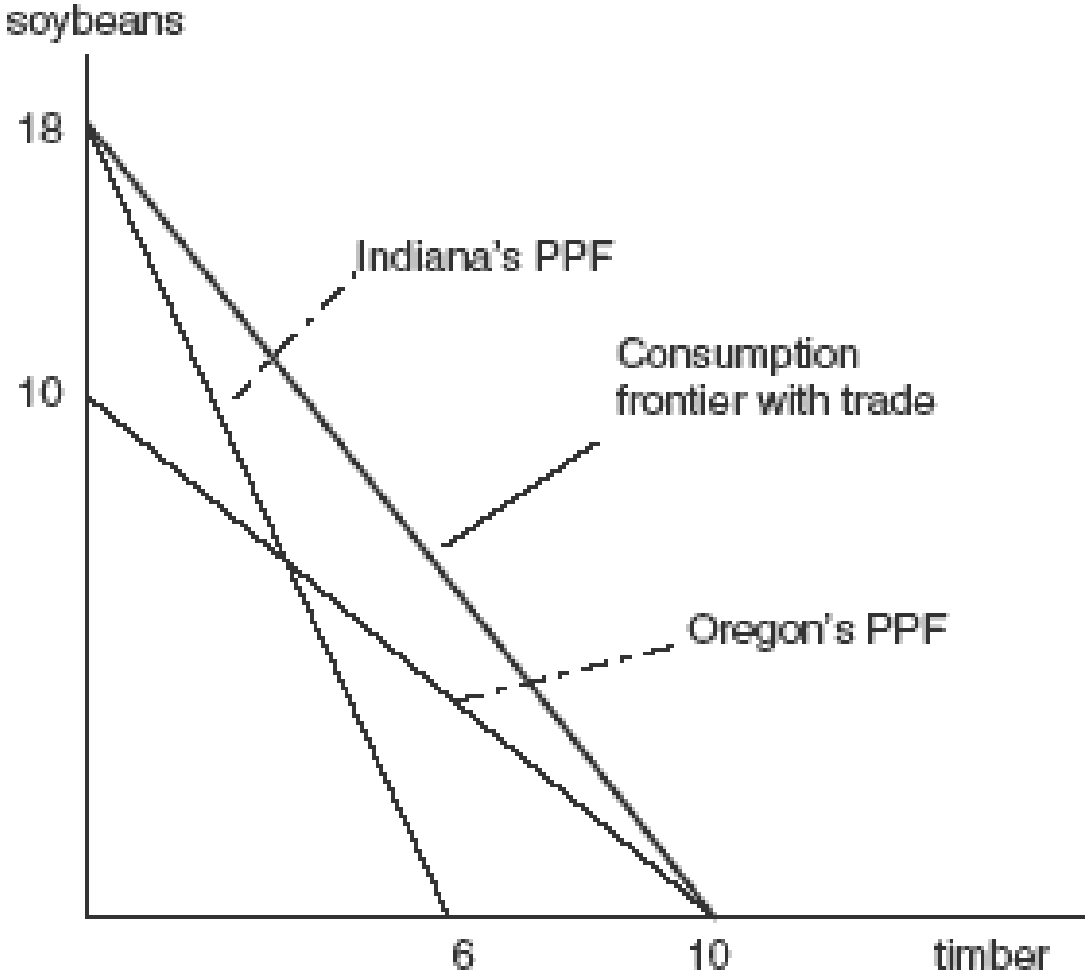
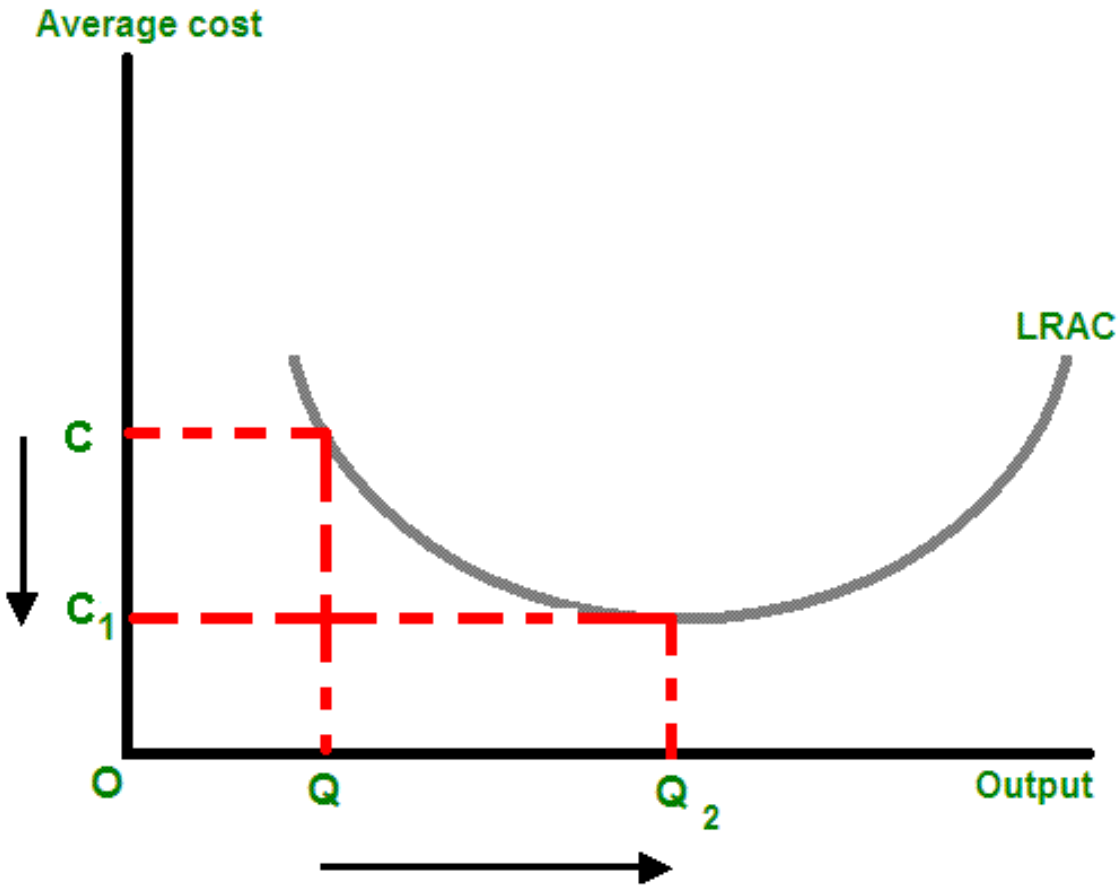


Figure 17.3

◇ http://www.education.com/study-help/article/comparative-advantage-gains-trade/

economies of scale

- increasing returns to scale
- think Wallmart vs your neighborhood store



- http://en.wikipedia.org/wiki/Economies_of_scale

clustering

- businesses cluster...
- counterintiutive, you would imagine competitors to locate far apart in order not to steal customers
- competing firms may cluster to share inputs:
  - labor, raw materials, capital (machines, equipment, etc)
  - eg if you want to start producing movies, you may want to locate in Hollywood for easy access to actors, camera operators etc
  - if you are an IT startup, Sillicon Valley would provide you with an unparalleled opportunities for venture capital

reasons for clustering (O'Sullivan, 2009, p 62)

- to share a supplier of an input that is subject to economies of scale
- to share labor pool
- large cities provide better skill matches leading to higher productivity and wages
- large cities facilitate knowledge spillovers, learning and social opportunity
- agglomeration economies cause self-reinforcing changes in location: the movement of a firm to a city increases incentives of other firms to move, and you end up with NYC, Tokyo, etc

agglomeration (dis)economies

- agglomeration economies=productivity rises with density
- beacuse of: economies of scale + network effects
-
- a term stressing (dis)advantages of economies of scale/clustering
  - input sharing, labor pooling, skills matching, knowledge spillovers
  - crowding, congestion, noise, pollution, alienation, crime

(Wirth, 1938)

trading countries/regions/cities

- and you observe comparative advantage economies of scale and clustering all around
- China with cheap labor produces much of the simple goods
- Iowa is producing lots of agricultural output
- Silicon Valley produces much of the software
- Detroit used to produce lots of cars
- Many stores are located in malls

outline

a quick and general intro to eco theory

general development theories (Blakely and Leigh, 2009, ch3)

urban eco axioms (O'Sullivan, 2009, ch1)

why cities exist? (O'Sullivan, 2009, ch3)

city size (O'Sullivan, 2009, ch4)

urban growth (O'Sullivan, 2009, ch5)

laws

- interesting! some laws governing the city size
  - now we're talking science, like Physics! eg Berry and Okulicz-Kozaryn (2012)
- few big cities, some medium, and lots of small
- Zipf's Law:
  - the number of people in a city is inversely proportional to the city's rank among all cities
  - the biggest city 2x size of 2nd biggest; 3x size of 3rd biggest, and so on
- there are more laws, eg 1.15: "the city constant" (Bettencourt et al., 2010, Bettencourt and West, 2010, Bettencourt et al., 2007)
  - double size and everything greater by 15perc: crime, rd

are big cities good or bad?

- where do you live ? Philly ? Rural NJ ?
- apart from agglomeration dis(economies):
- most of the economic growth, innovation, R&D happens in the cities (Glaeser, 2011)
- but people are less happy in big cities (Berry and Okulicz-Kozaryn, 2009), and there's alienation, impersonality, shallow soc capital (Wirth, 1938)
- but it's even worse in the suburbs (?)
- towns and villages are the best for non-homo-oeconomicus

happiness research

- people are most unhappy when commuting (Stutzer and Frey, 2003, Frank, 2005)
- and they overestimate utility from big houses in suburbs (Stutzer and Frey, 2003, Frank, 2005)
- and underestimate costs of congestion, think California (Schkade and Kahneman, 1998)

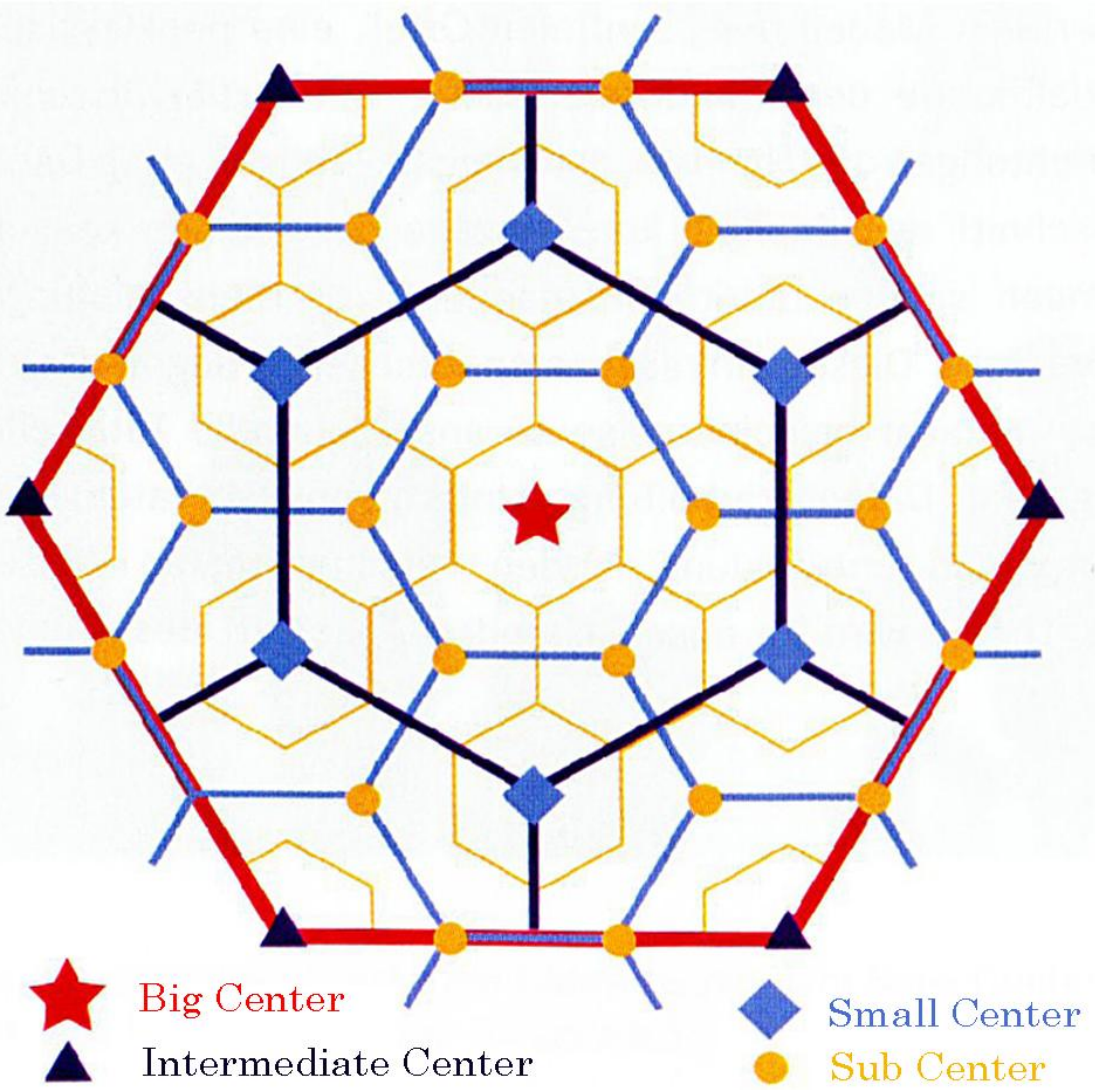
central place theory (O'Sullivan, 2009, p86)

- market size of businesses vary by industries
- eg brain-surgery per capita demand is low

  and equipment for it generates large economies of scale

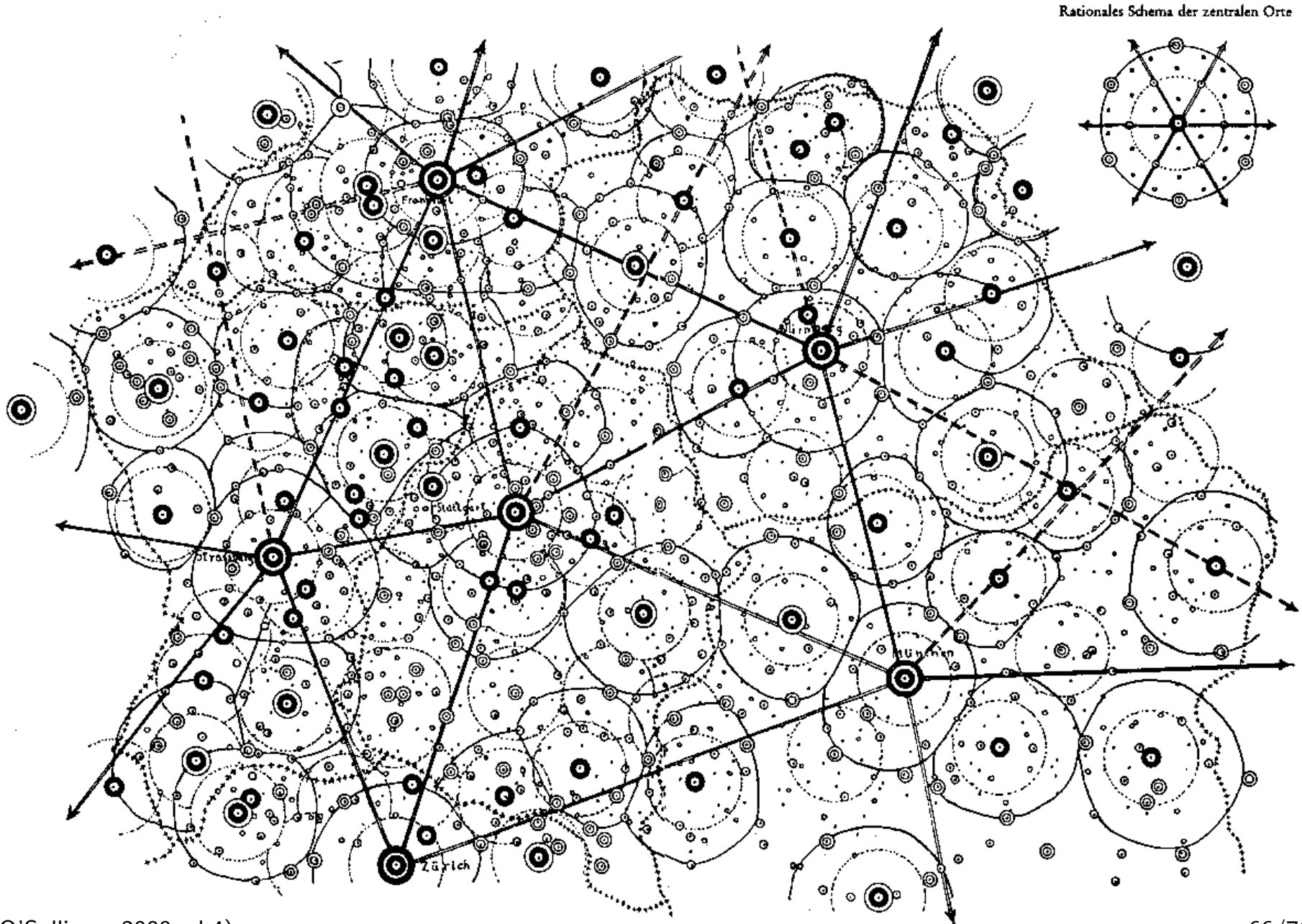
  so brain surgeons will be in big cities serving people from smaller areas all around
- with haircuts it's the other way round

central place hierarchy



◇

central place hierarchy



outline

a quick and general intro to eco theory

general development theories (Blakely and Leigh, 2009, ch3)

urban eco axioms (O'Sullivan, 2009, ch1)

why cities exist? (O'Sullivan, 2009, ch3)

city size (O'Sullivan, 2009, ch4)

urban growth (O'Sullivan, 2009, ch5)

economists see two kinds of growth

- economic growth: increase in per capita income
- employment growth: increase in employment

economic growth comes from:

- capital deepening: more physical capital per worker (Obama: we have fewer horses and bayonets)
- increase in human capital: knowledge, skills from education and experience
- technological progress (innovation Christensen (1997))
- agglomeration economies (input sharing, labor pooling, labor matching, knowledge spillovers)

human capital

- lots of talk about it everywhere...
- politicians talk about headstart, community colleges
- lots of talk everywhere, eg TED

human capital and other capitals

- it not only increases person's knowledge
- but also persons learn from each other
  so there are network effects
  (one reason you're on campus, not in online class)
- also it increases technological innovation
  - HS dropouts don't innovate
  - on the other hand, Jobs and Gates are both college dropouts
- and we will talk more later about creative class (Florida, 2008)

but wait, innovation is key...

- there is a lot of talk about innovation these days
  especially among business people
- an important term is a disruptive innovation
- it's an innovation that disrupts the industry
  like Netflix for Blockbuster
- and Blockbuster spent millions fighting traditional
  competition only to find out it fought the wrong war
- see Christensen (1997) and
  `http://www.claytonchristensen.com/`

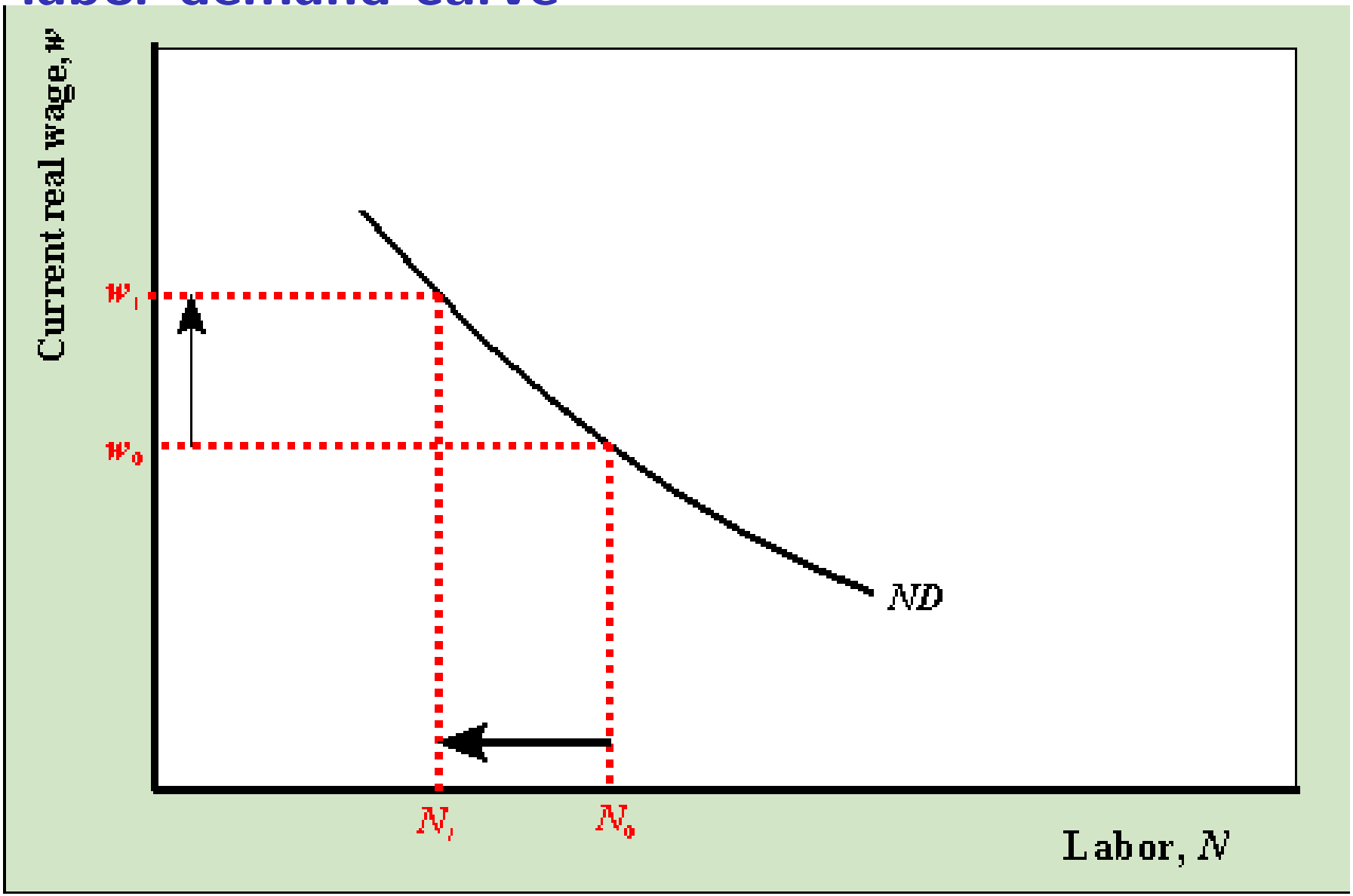
production and employment (O'Sullivan, 2009, p96)

- local: haircuts, bakery
- export: steel, software...etc
- multipliers: increase in export employment is great for local employment

labor demand curve

- labor demand is negatively sloped:
- substitution effect: increase in wages leads to firms to substitute capital, land, materials for relatively expensive labor
  - and computers!(drones, etc)
  - again, better become a friend with computers (learn programming)
- output effect: wage increase leads to product's price increase

labor demand curve



◇

◇ http://faculty.washington.edu/ezivot/econ301/labor_demand.htm

next week...

- let's have a look at next week...