

Neo-classical and keynesian approaches to regional development

Theories of regional development inspired by neo-classical economics

Theories of regional development inspired by keynesian economics

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Neoclassical Economics - Assumptions

Microeconomic basis – individuals' (human or enterprise) behaviour

Mathematization of economics (symbols, variables, exact definitions)

Rationality (homo economicus)

Perfect mobility of factors of production

Perfect competition, perfect information

Population size and technology are constant and exogenous (supply limited models)

Methodological individualism

Neo-classical approach to regional issues

- ❖ L. Walras and A. Marshall
- ❖ Simplification of reality (perfect competition etc.)
- ❖ Total production depends on the supply (amount) of sources
- ❖ Allocation efficiency can be achieved only by the market principles
- ❖ Economies of scale
- ❖ State control is denied
- ❖ Regions of the world converge

- ❖ **Regional convergence** is a normal process => theories of regional development inspired by neoclassical assumptions are **theories of „regional convergence“**

External and Internal Economies of Scale (A. Marshall)

❖ *Internal economies (increasing returns and diminishing returns)*

- ❖ Increasing returns are a more common occurrence as they are achieved with increasing production of a particular product which leads to decrease in fixed costs.
- ❖ If, due to the production of a product (specialization), production costs of another product is decreased, diminishing returns are achieved

❖ *External economies (financial or educational returns or agglomeration returns)*

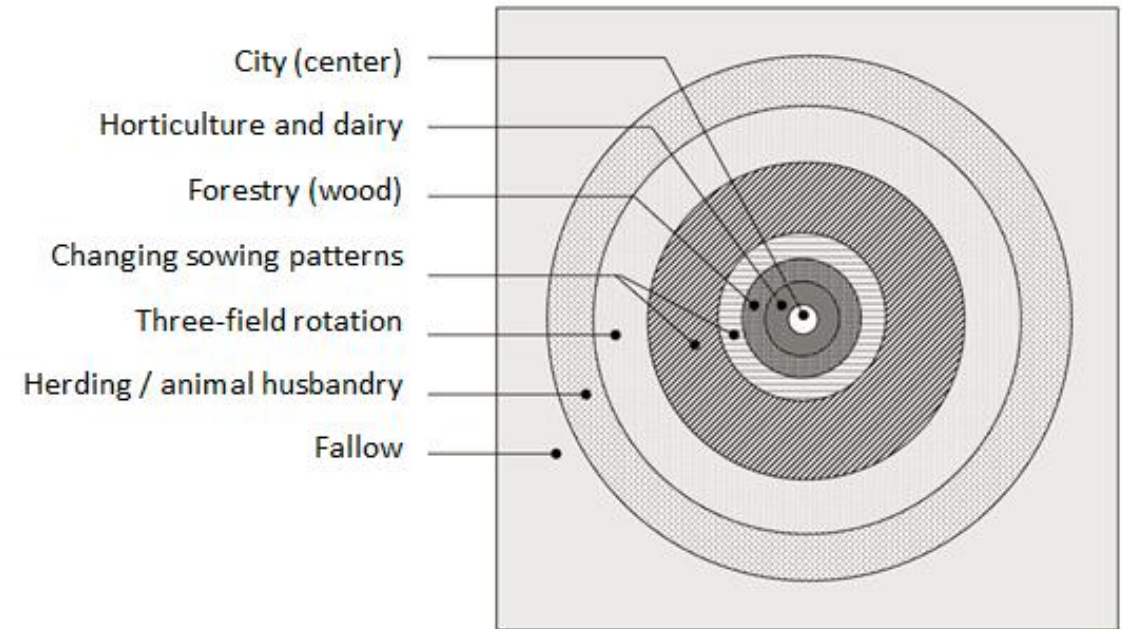
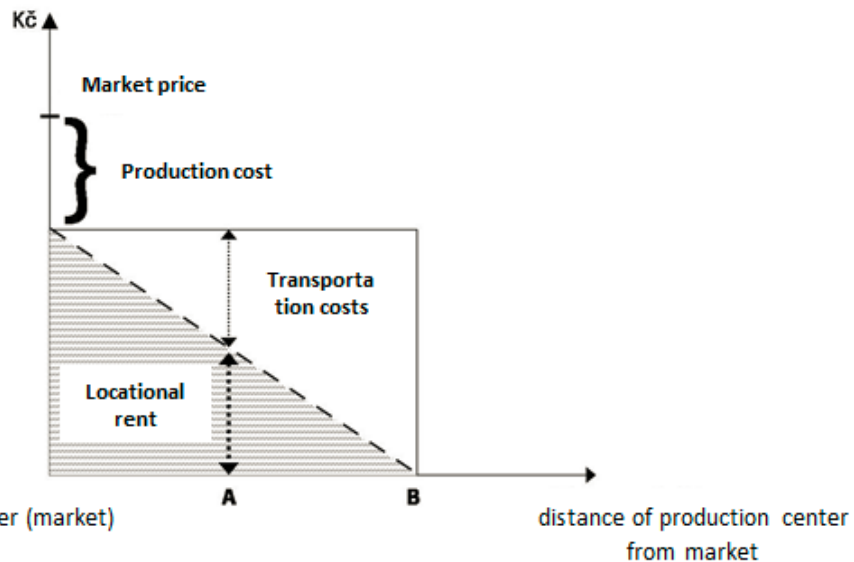
- ❖ depend on external environment of a company, particularly on other economic subjects or public resources
- ❖ *agglomeration returns* are based on the idea that the existence of high concentration of industry, industrial counties or agglomeration economies or clusters, have a significant effect on the economy.
- ❖ The opposite case is *diseconomies of agglomeration* (disadvantages)

Localization theories

- ❖ The oldest part of regional theories (predecessors of RT)
- ❖ Rely on neo-classical basics of economics, particularly the assumptions of perfect competition and the absence of barriers in the space
- ❖ *„every location has certain resources at its disposal and every socio-economic activity has its requirements „ - to find factors influencing space distribution of economies*
- ❖ Very simplified models – not reflecting reality
- ❖ Contributed to the development of theories of regional development - the study of agglomeration and the creation of location factors concept
- ❖ The Von Thünen model of agricultural land use, Central Place theory

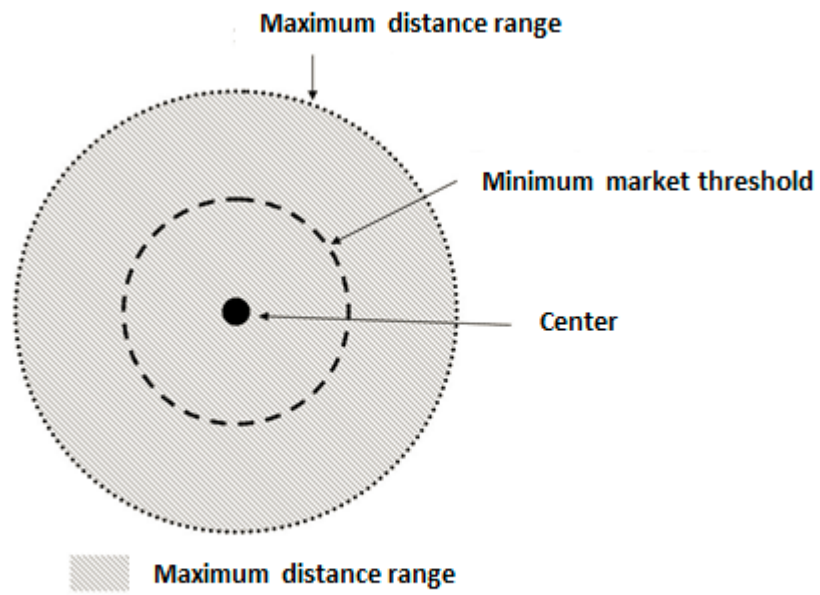
The Von Thünen model of agriculture land (19th century)

- ❖ Model of crops distribution
- ❖ Importance of **transportation costs**
- ❖ The function of **locational rent** – potential profit of the producer

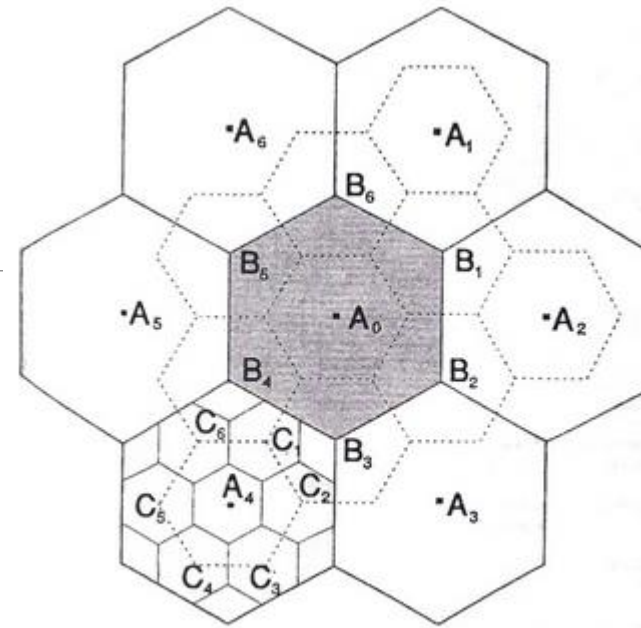


Central Place theory (Walter Christaller – 1933)

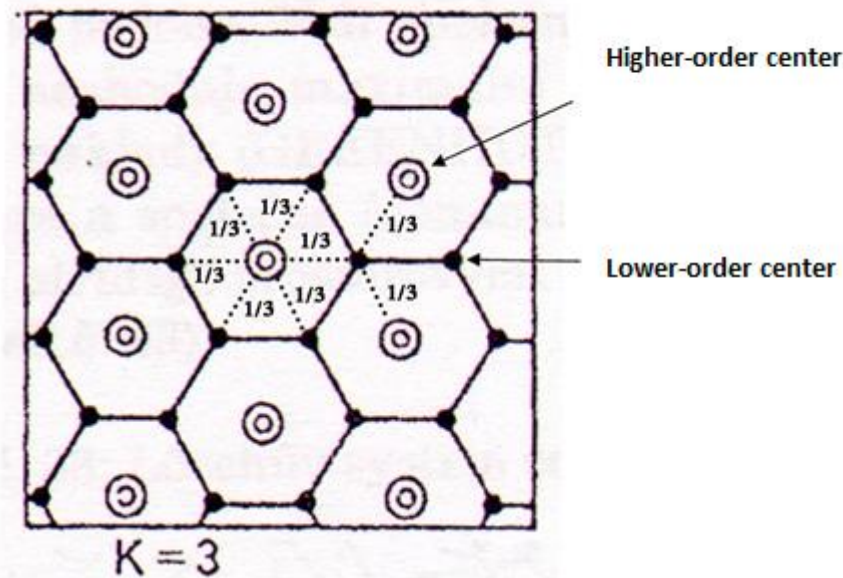
- ❖ To explain the location and size of settlements in an urban system while assuming rational consumer and seller behavior and homogeneous surface
- ❖ The result of Christaller's work is the conclusion that with the neoclassical assumptions of perfect mobility, etc. the optimal solution is *hexagonal lattice* where the hexagons neighbor one another and localized centers are in their middles
- ❖ Focusing services in the centers generates *a hierarchy of central places* (the higher the order of the services provided the higher order the center occupies in the hierarchy)
- ❖ Very inspirational theory – many followers
- ❖ Used in practice (Germany, Netherlands, Israel, Czechoslovakia)



Sphere of influence of the center and the limits of its size



Basic spatial center hierarchy (Source: Ježek, 2002)



One-sector neo-classical model

- ❖ The oldest and simplest attempt to explain regional growth

- ❖ Cobb-Douglas production function $Y = F(K,L) * t$

- ❖ Technological progress is exogenous

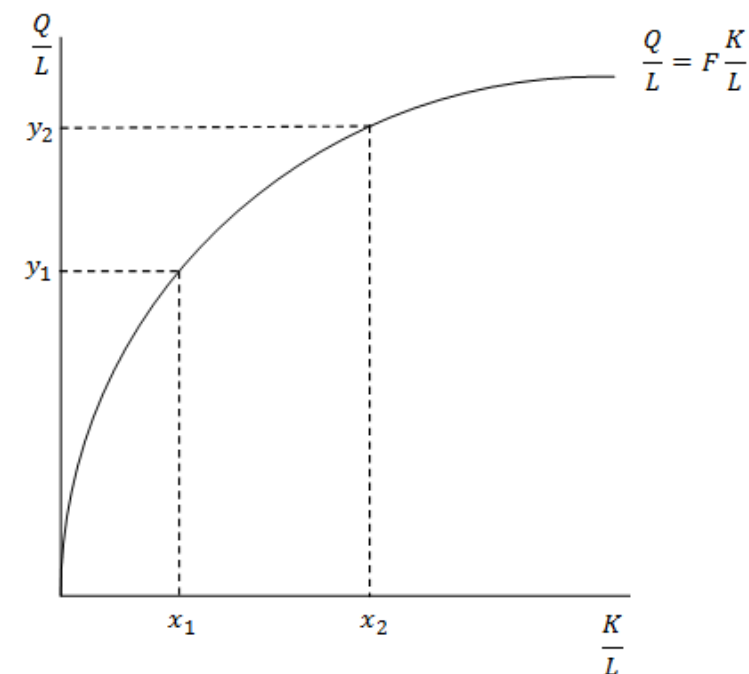
- ❖ The mobility of capital and labour is countervailing =>

Convergence of regions

- ❖ 2 causes of inter-regional disparities in production volume:

 - ❖ Different speed of capital growth, labour force and technological progress

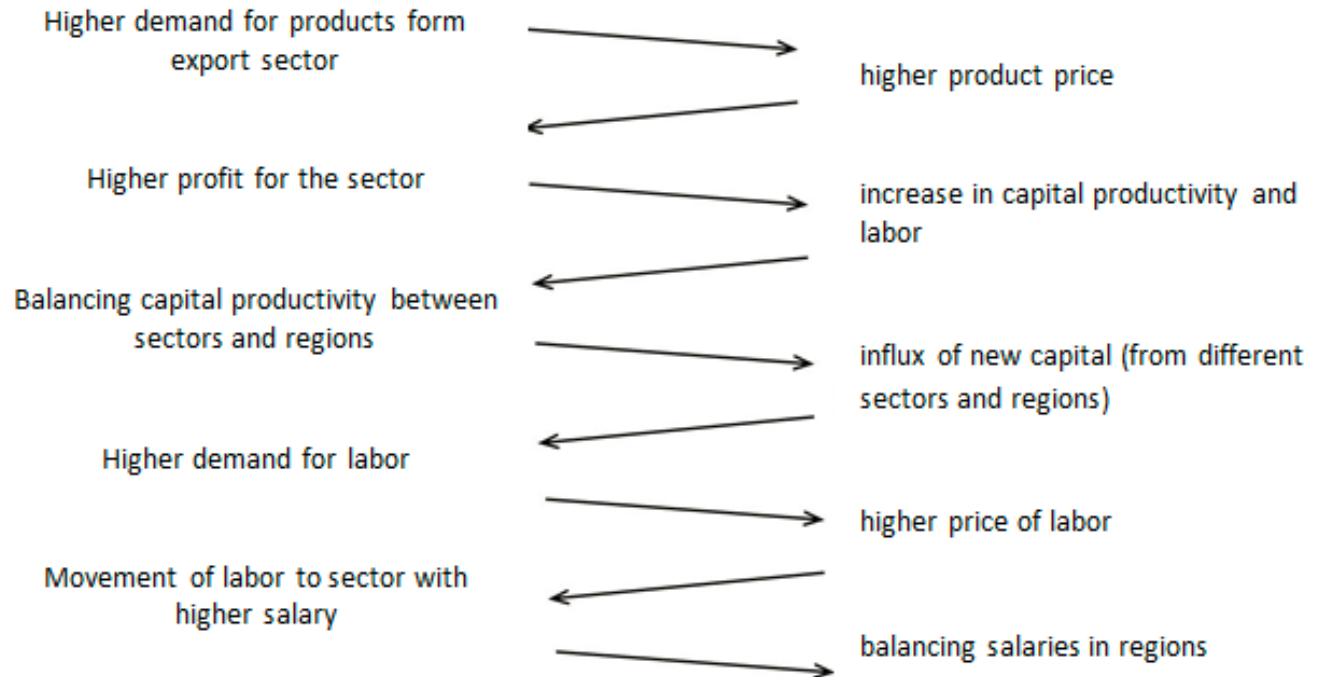
 - ❖ Different function f – different relation between increase in production and increase in Labour supply caused by an increase in capital volume



Two-sector neo-classical model

❖ Existence of more sectors in a region and existence of mutual trade (comparative advantage) but still very simplified model (perfect awareness of subjects, perfect mobility of production aspects and perfect flexibility of prices)

❖ Model moves towards the equilibrium but in a very long time accompanied by structural changes



Growth accounting

- ❖ development of *econometrics* (application of mathematics, statistical methods and computer science to economic data)
- ❖ emphasis on statistical methods, modeling and an extensive use of quantified data (quantitative revolution)
- ❖ the difference in the growth between the regions (countries) is caused mainly by *the change in labor productivity*
- ❖ Technology is the key success (Technology covers also knowledge, human capital, etc.)

New economic geography (P. Krugman, M. Fujita, A. Venables)

- ❖ Develops some old neo-classical regional models using less simplifications (non-perfect competition, internal and external savings)
- ❖ Uses complicated mathematical models
- ❖ It also emphasizes the influence of historical development and feedback of technological advancement on economic growth and regional development
- ❖ Main objective - to find out the extent of market structures and technological conditions as agglomeration mechanisms
- ❖ Krugman – some countries are leaders in production and export in certain industries for a long-term => long-term region specialization
- ❖ Existence of multiple equilibrium – depends on historical development (determination, causality and fatalism)

New growth theory (R. Romer, B. Arthur)

- ❖ „New theory of endogenous growth“
- ❖ Factors of growths – human capital, knowledge, technologies, innovations
- ❖ Causes of regional disparities – difference in the quality of human resources, different level of technologies => each region has different equilibrium
- ❖ Support of science, innovation in the whole economy
- ❖ Regions with similar conditions create convergence clubs which, theoretically, aim to the same equilibrium (conditional beta-convergence). As the conditions (parameters) within a country are more alike the effort for convergence is higher at interregional rather than international level (Blažek, Uhlíř, 2002) – case of the EU countries

Path dependance model (P. David)

- ❖ Not a real economic theory but rather a separated model (idea) – also used by New Economic Geography
- ❖ Based on the idea that coincidental phenomena and events may have a long-term cumulative effect on the organization of space (or activities) and the success of regions
- ❖ The influence of particular occational events on the decision-making and behavior of individuals.
- ❖ It is necessary to study historical processes to understand further development of events.
- ❖ „lock-in“ effect

Regional policy inspired by neoclassical and neo-liberal approaches

- ❖ 1920s – 1930s (UK - an „experimental laboratory“ of economic theory and economic and regional policies)
- ❖ End of neoclassical regional policies – WWII
- ❖ Cause of high unemployment – low mobility of labour (labour stays fixed to a place) compare to high mobility of capital => workers need to move for work even from larger distances => „workers for work“
- ❖ Support for commuters
- ❖ Financial incentives for migrants
- ❖ Accommodation arrangements
- ❖ Retraining schemes etc.

Neo-classical RP – success and failures

- ❖ Passive help to weak and problem regions
- ❖ Selectivity of migration – impact on emigration regions
- ❖ Efficient when regions with different demand for labour exist
- ❖ Social and cultural aspects of migration
- ❖ RP from neoclassical perspective is more less disapproved (exceptions – support of SME, deregulation measures, consultation services)
- ❖ Advantages for companies located into enterprise zones (use of brownfields)

Neoclassical approach to the differences in regional economic potential

https://www.youtube.com/watch?v=b5zp_EJ4LY4

https://www.youtube.com/watch?v=Xt_L8WFKvLc

Keynesian Economics - assumptions

No selfregulation capability of economy

The cause of disequilibrium – difference between savings and investments (Keynes)

Analyses of macroeconomic quantities – rate of unemployment, interest rates, production, aggregate demand

High level of uncertainty

Inflexibility of prices and wages

Distaste to mathematization

Keynesian approach to regional issues

- ❖ The crisis was caused by isolated decision about savings and investments => imbalance
- ❖ Investments from public sector should compensate investments from private sector (to secure proper total volume)
- ❖ Low consumption of investments (demand) will lead to unemployment and recession

Therefore: => state control and interventions are needed

=> regions in the world **diverge**

- ❖ **Regional divergence** is a normal process => theories of regional development inspired by Keynesian assumptions are **theories of „regional divergence“**

Export base theory (D. C. North – 1950s)

- ❖ Employment in: - basic (export) – doesn't have to be industrial product, but also agriculture or service
 - complementary (service) industries
- ❖ Success of the region lies in the development of export sectors which have the role of a multiplier (very stimulating field), and other fields in the region are more or less subject to the export field and to secure its activities
- ❖ Economy's development is determined by the success of its export sector – region has to find (produce) its successful export product/service
- ❖ Demand for products is exogenous
- ❖ Importance of external support and agglomeration advantages
- ❖ Theory based on the empirical evidence from the USA from 19th century
- ❖ No direct implications for regional policies
- ❖ No considerations of trade barriers or currency exchange rate

Harrod-Domar growth model (1940s)

- ❖ Significant divergence tendencies (any deviation from equilibrium causes even bigger disbalance)
- ❖ Domar (1957) – two effects of investments (income effect and capacity effect)
- ❖ Harrod (1948) – four types of rate of growth (natural, guaranteed, anticipated, realized)
- ❖ Pesimistic model – disparities among region will deepen
- ❖ Investments into low-developed regions

Growth poles theory (F. Perroux, J. Boudeville – 1950s)

„It is a blunt and indisputable fact that *growth is not uniform in different places* but growth has different degrees of intensity in different points, or poles, and then it spreads via channels and its final result for the state economy is different in different regions,, (Perroux)

- ❖ the economic development of a regions depends on the intensity of the **propulsive** industries and their interconnection with the **propelled** industries
- ❖ Role of innovations
- ❖ polarization of space – **dominant** and **dominated** regions
- ❖ 4 types of polarization – technological, income, psychological, geographical
- ❖ J. Boudeville - *principal cities systém (growth centers and growth axes)*

Theory of cumulative causation (G. Myrdal – 1950s)

- ❖ emphasis on social disparities – strong impact on regional development
- ❖ a change does not create opposite reaction but other changes which emphasize it

Hypotheses:

- there is a small group of wealthy countries and many more extremely poor countries,
- wealthy countries continue to grow while poor states stagnate (here Myrdal notices the paradoxical fact that the stagnating countries are termed developing countries - the countries which are developing),
- from a global point of view the differences between the rich and the poor are growing larger.
- ❖ market forces lead to deepening of interregional differences
- ❖ *negative* (polarized or back-wash effects) and *positive* effects (spread or trickle-down effects)
- ❖ *international trade* as the main mechanism which causes *market forces to increase inequalities between developed and underdeveloped countries*

Theory of unequal development (A. Hirschman - 1958)

- ❖ Aim of economic policy - *to find hidden or ill-used resources as well as mechanisms to utilize them*
- ❖ Key to success - generating and directing of people's effort in a desirable direction
- ❖ *binding agent* – catalyst of economic growth => *people's effort*
- ❖ not lack of capital, but lack of know-how is the problem
- ❖ Inequalities and disequilibrium are normal – keep the economy active
- ❖ *positive expectations* - "there is nothing more successful than success,,
- ❖ Threat for underdeveloped regions – selective migration

Theory of polarized development (J. Friedman – 1966)

- ❖ „core-periphery“ – two basic types of regions
- ❖ Core regions – high level of autonomy, innovations
- ❖ Linkage effect – innovations create other innovations
- ❖ Conflict between core and periphery regions
- ❖ Importance of decentralization, reduce the dependence on core region (a new strong center can be created)
- ❖ Importance of institutional and behavioral factors

Regional policy inspired by keynesian approaches

- ❖ 1950s – 1970s (1960s – „golden age“ of regional policies)
- ❖ Regional problems = long-term phenomenon
- ❖ State is responsible for solution of unemployment – active employment policies (space redistribution of labour supply => „*work for workers*“)
- ❖ Support and subsidies to problem regions
- ❖ Localization of propulsive industries
- ❖ Investment subsidies, loans, tax relief, direct transfers

Keneysian RP - Success and failures

- ❖ Case of Ireland (1990s)
- ❖ FDI – still a common tool of economic and regional policies
- ❖ High financial demands for public funds, violation of free competition, top-down approach
- ❖ Violent location of industrial enterprises into problematic regions (in crisis period they shut down and that deepened the problems even more)
- ❖ Restrictive development policy (restrictions for firms expanding in the wealthiest regions – e.g. London!!!)

Multiplier - definition

Multiplier generally represents non-dimensional number, that is expressed as the ration of the change in income to the initial change in expenditure that brought it about.

(Pearce 1995).

Multiplier expresses value, that multiplies the change in autonomous expenditures in order to count final total effect of increased investment on product Y

(Samuelson 1995).

Multiplier effect is a tool of state fiscal policy through which state tries to stimulate consumption in a given area and contribute to the increase in GDP and general welfare in a certain territory.

Multiplier - origin

❖ R.F. Kahn

❖ Employment multiplier

❖ Original (primary) and secondary employment

❖ **The relation of Home Investment to Unemployment, 1931**

❖ ratio of a change in total employment to the primary employment

❖ Argument to support of public works

❖ No relation to national income

❖ J.M. Keynes

❖ **The General Theory of Employment, Interest and Money (1936)**

❖ Investment multiplier

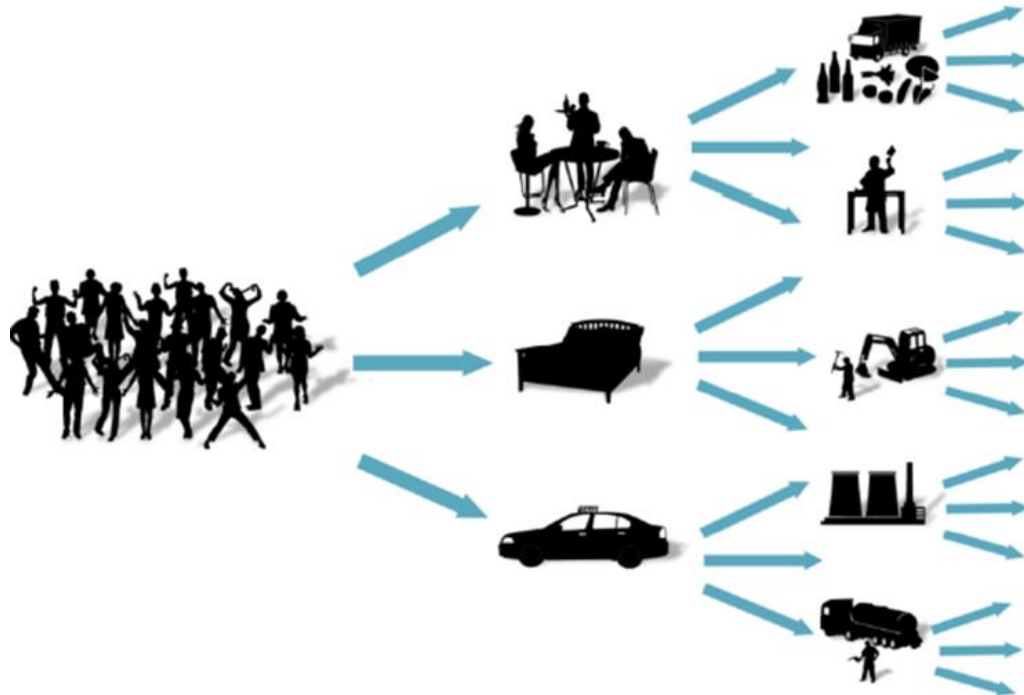
❖ For short-term period and under condition of not full employment

❖ the ratio of the change in national income to the initial change in planned investment expenditure that brings it about.

$$\alpha = \frac{1}{1-c}$$

Multiplier effect

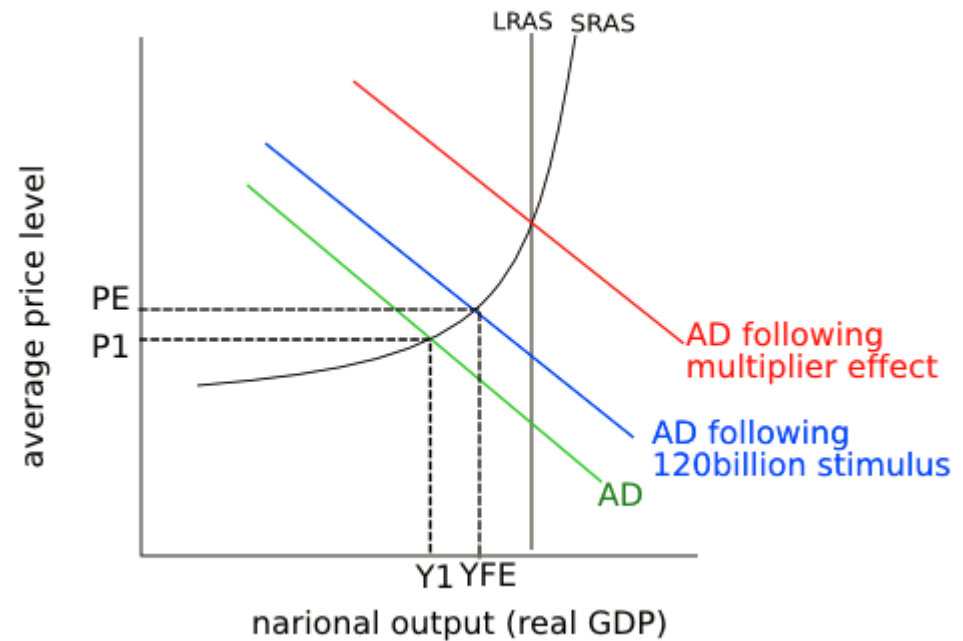
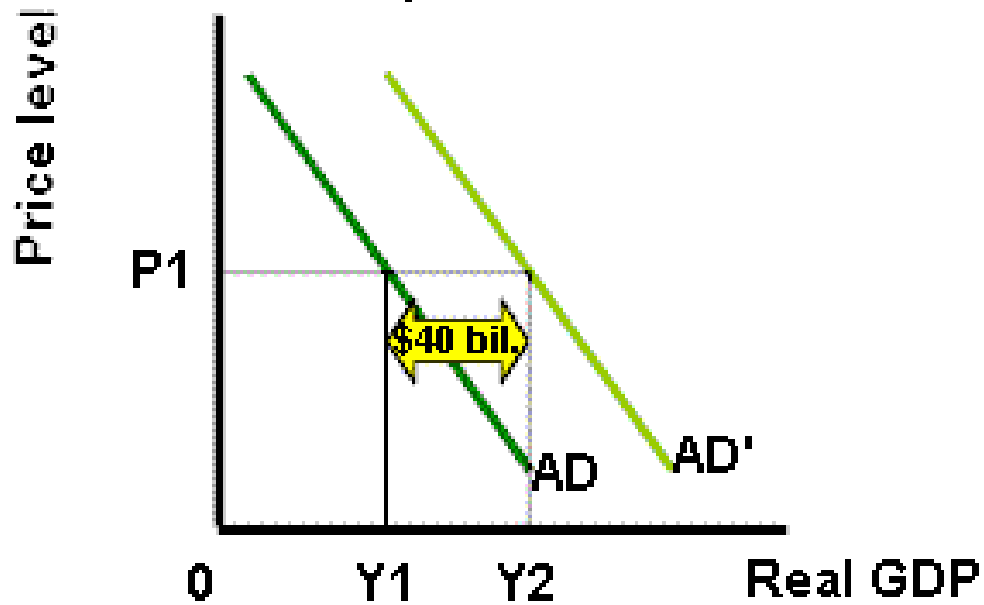
❖ The sequence of events that follow the initial injection



$$\text{Multiplier} = \frac{\text{Change in GDP}}{\text{Change in injections}}$$

Multiplier effect

The Multiplier Effect



Multiplier – a video

<https://www.youtube.com/watch?v=H3nyc8XHrQc>

Multiplier – criticism

To increase social income and thereby cure depression and unemployment, it is only necessary for the government to print a certain number of dollars and give them to the reader of these lines. The reader's spending will prime the pump of a 100,000-fold increase in the national income.

M. Rothbard -- Man, Economy, and State (1993)

The usual way to calculate the likely effects of fiscal policy, meaning increases in particular government expenditures and particular decreases in particular tax rates, is through the use of estimated multipliers. The trouble is that existing estimates of those multipliers tend to vary all over the place, from negative numbers to substantial positive numbers. This does not inspire confidence. We have to understand why the range is so wide, and then find acceptable ways to narrow it. There is a perceptible tendency for those who a priori disapprove of discretionary fiscal policy to find smaller multipliers and those who approve to find larger ones. But I think this tendency can be turned into healthy criticism, and lead, if not to consensus, then to a narrower range.

R. M. Sollow (2011)

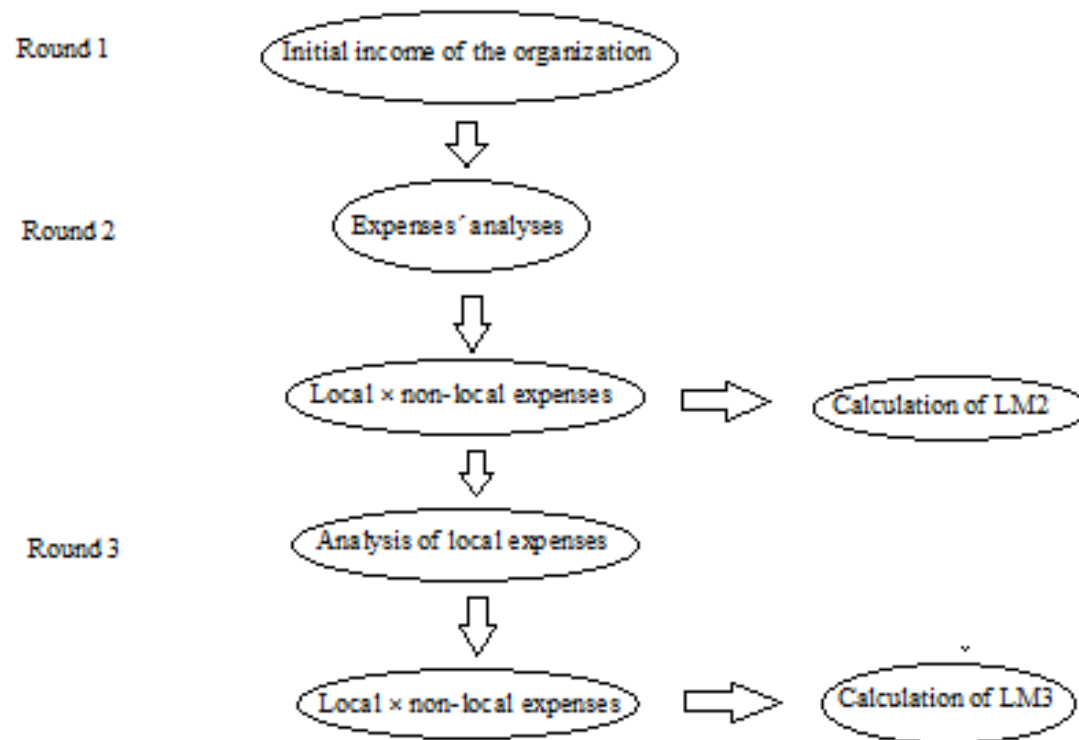
Regional multiplier

- ❖ Is based on very similar conditions and it is calculated in a similar way as the national economy multipliers
- ❖ The values will be usually lower than the values of multipliers of the national economies as the regional economies tend to be more open so the leakages will come faster
- ❖ Smaller areas have limited capacities, hence are forced to use external sources
- ❖ Applied in different sectors of national economy
- ❖ Very frequent is its application within the assessment of economic impacts of tourism industry (cases of particular touristic regions)
- ❖ Multiplier models – REMI model, IMPLAN model, the HERMIN or QUEST models

Local multiplier

- ❖ A tool developed specifically to express certain elements of local economic development
- ❖ A suitable tool to measure economic effectiveness at the local level from the micro perspective
- ❖ A certain value for a selected institution (municipality, local enterprises, local communities, non-profit organisation, or association etc.) or for a group of inhabitants
- ❖ It represents the so-called “retention ability” of an area and it gives the evidence about the money flow and, also indirectly, non-financial relations within a given space
- ❖ It is **supposed** to be an „quick and easy“ indicator usable by local authorities in order to express their contribution to local development

Process of data gathering for LM3



Calculation of local multiplier

$$LM2 = \frac{\textit{round 1} + \textit{round 2}}{\textit{round 1 (initial income)}}$$

$$LM3 = \frac{\textit{round 1} + \textit{round 2} + \textit{round 3}}{\textit{round 1 (initial income)}}$$

In a similar way LM4, LM5 etc. can be determined

Benefits of local multiplier

- ❖ Suitable for local level of development (not many methodologies)
- ❖ Easy to calculate (but difficult to obtain dataset)
- ❖ Better for small and mid-size organizations
- ❖ LM3 Online – commercial product
- ❖ Motivation aspect

Limits of local multiplier

- ❖ Demanding data collection (field research)
- ❖ Simplifications in methodology
- ❖ Imperfections in terminology (Im2)
- ❖ Conceptual barriers

Thanks for your attention!



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