

Impact of local market development on sustainable (stable) city development

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Abstract. The researchers investigate the problems of city development and retail trade systems in relation to the sustainability of urban economic development. In particular, the authors describe the problems of strategy development related to more sustainable development of the retail system. The most important tasks for planning the development of the retail system in terms of sustainability of the urban economy are to preserve the traditional trading environment and address the problem of "dead" shopping centers. Recommendations are made to eliminate "food deserts" using modern information technologies.

1 Introduction

Market economy development by different scientific schools is characterized by two mutually exclusive trends. Some scientists think of it as generally stable and on a smooth trajectory of sustainable growth, while others argue that it is unstable and has recurring periods of ups and downs.

According to the former, most of the market economy's fluctuations are due to either individual optimal adaptation to changes in the environment or inefficient state management. In this case, the role of national and regional economic policy is reduced to the thesis "do no harm". That is, scientific schools of this direction recommend avoiding active influence on the economy, believing that the "invisible hand of the market" will contribute to the desired results.

According to the second opinion, market economy is inherently unstable and in the process of its functioning will repeatedly experience periods of ups and downs, it is necessary to apply economic policy at the national and regional level, which would allow stabilizing all market processes.

Most of the modern management models of national and regional economies used by large central banks and governments are "in the middle" between these two extreme positions of academic schools. In particular, these models assume that, in the absence of external shocks, the economy will enter a stable trajectory. However, generally agreeing with this criterion of the model, it should be noted that market forces themselves tend to cause ups and downs, that is, when planning the sustainable development of national and regional economies it is necessary to take into account both exogenous and endogenous factors. This idea is well covered in economic literature [10, 12].

2 Methods and materials

The main reason for the exogenous factors of the existing models of functioning and sustainable development of the market economy lies in their linear nature. According to Blanchard [5], national economies function on the basis of linear models, he writes: "In creating a model, we thought of economics as a system with approximately linear links, constantly exposed to various shocks. Indeed, the analysis of such models shows:

- aggregate economic results over long periods of time have a stable growth trajectory (on a macroeconomic level);
- a significant part of economic theory assumes that market forces will favor stable results (on a regional and macroeconomic level).;
- the system of stable shocks of economy is manageable and flexible, which allows analyzing market economy indicators using linear regression methods.

In the linear setting, the models of functioning and development of market economy reflect in a certain period of time, either stability or instability, that is, there is an alternation of downs or rises, in a nonlinear setting, market economy as a dynamic system can be globally stable and simultaneously unstable locally. This mathematical postulate makes the following conclusion possible: in a market economy, the national economy may be relatively stable and stable, while the regional economy may be in a mode of fluctuation. Considering the regional economy from this point, we can de facto allow the interpretation of economic fluctuations as a result of the impact of endogenous factors (internal market forces), which, as is well known, arise in many dynamic environments.

3 Results and discussion

Fluctuations in local markets caused by endogenous factors undoubtedly affect the final parameters of sustainable development of the regional economy. This problem is widely discussed in the regional science in general, but there is a limited number of works that study the spatial location of different types of retail facilities for sustainable urban development.

The purpose of this research is to analyze the domestic and foreign experience of studies on the impact of local market development on the sustainable development of urban economies.

The formation and development of local markets is based on such economic activity as retail trade. The development of the retail system in cities, which includes shopping centers, large stores, parks, along with new areas emerging on the outskirts of cities, has changed the development of urban environment around the world. According to Lang[8], in the context of the development of the urban environment, residential buildings and retail stores are the first decentralized activities, which are therefore the main drivers of the urban economy. The retail sector within the local consumer market is important because it: provides goods and services to urban residents and visitors; provides employment for a large part of the population, providing income to the municipal economy in the form of taxes to local budgets; promotes the development of municipal property; supports the viability of local markets, which is closely linked to the flow of people in shopping areas and the growth of urban areas [19].

Population growth in Russian cities, which began in 2000, led to the expansion of cities towards their suburbs changed the structure of local markets in general, and retail trade in particular, which adapted to new conditions, applying innovative strategies.

Three types of sustainability in urban development were identified: environmental, infrastructure and economic [8, 12] using equilibrium and evolutionary approaches. The equilibrium approach was used to determine environmental and infrastructure sustainability, while the evolutionary approach was used to determine economic sustainability in urban development, which is related to retail system sustainability. The essence of the evolutionary approach, according to scientists Niele Wrigley and Les Dolega, includes the ability to adapt to regional economic transformations, embodying the "Schumpeterian" potential of systems to create new trajectories of growth of the urban economy [21]. This idea of the evolutionary approach has a strong link with market relations in the retail system in the context of sustainability of the urban retail system, determining the ability of its various elements (different types of retail objects) to adapt to changes [9].

The structure of local markets in Russia has undergone significant changes since the 2000s, due to the emergence of large retail outlets, shopping and entertainment centers, both in the city centers and in their suburbs, with retail (small food and non-food stores) affected by the impact of chain retail. However, as practice shows and the number of "dead" shopping centers is growing all over the world, particularly in the U.S., Europe and Russia. A kind of balance in the retail system, which should adapt to market dynamics and increase the economic stability of local markets, should ensure its participants.

The main participants of this process are local self-government bodies and entrepreneurs who make decisions in this segment of the local market. When designing a strategy for development of sustainability of the municipal economy it is necessary to take into account that they have opposite objectives: local governments are trying to maximize public welfare and economic sustainability of the urban environment, while entrepreneurs are trying to maximize profits.

In our opinion, the situation in this context can be beneficial for both participants of the process if two conditions are met:

- entrepreneurs are informed about local consumer market development strategies and programs, as well as about the economic, social and environmental benefits of planning to increase the city's economic sustainability;
- local government bodies take into account the interests of entrepreneurs and stimulate the development of various segments of the local consumer market.

In this meaning, government and business should have common goals to build an effective sustainable retail system, which is possible with the following objective restrictions on:

1. Reducing trade in small retail stores in the city center;
2. Occurrence of inequality due to limited access to large retail outlets (centers) outside the city for households with limited physical capacity and low income;
3. Physical wear and tear, including long-term downtime and refusal to repair or upgrade existing small non-stock stores;
4. Replacement of high-quality retail or mass consumption goods with low-quality discount goods in large retail outlets[11].

Increasing sustainability of the retail system development is an important strategy to reduce the negative impact on the development of local markets and, ultimately, on the regional economy.

The market approach regulates supply and demand, allocates resources and provides incentives for entrepreneurship and innovation, but it has many drawbacks in terms of urban sustainability, as economic decisions do not take into account social and other benefits (human health, equity and quality of the urban environment).

The issue of economic sustainability is deeply linked to the continued viability of urban shopping centers and small stores, as most facilities outside the center, such as grocery

supermarkets, regional shopping centers, and non-food supermarkets, have resulted in the closure of retail spaces, in particular local retailers in urban areas [17].

The hierarchical principle of central place theory [7, 18] is central to changes in the retail system. Higher quality goods are becoming scarce in the city center, so longer trips are needed to buy these goods; at the same time, inexpensive "lower quality" goods can also become attractive in these remote centers, because the range and price allow large malls to successfully compete with smaller and more dispersed retail stores.

Large stores and shopping centers can become especially problematic in small cities (150-400 thousand inhabitants), because if their number is disproportionately large, they have a negative impact on business in the centers of small cities much stronger than in megacities[2, 6, 13, 14]. The emergence of supermarkets leads to the elimination of off-network retailing in small cities, which leads to a reduction of employment in retail and wholesale trade[1], and a multiplier effect of sustainable development of the city, as it does not provide career growth and sufficient wages to employees of small stores.

The experience of Western countries shows that, for example, in Canada and the U.S., the use of flexible financing mechanisms by attracting private capital can improve the condition of city streets in city centers through video surveillance, street cleaning, support for the image of the place and its safety, which ultimately affect the success of business.

The policy adopted in the UK supports the vitality of retailing in urban areas by applying strategic approaches that include the development of market plans and concepts, the introduction of advertising technologies, and urban renewal programs. At the same time, most retail facilities are more creative than local governments, improving the appearance of the city center and providing employment opportunities and community initiatives.

The availability of grocery stores in the city center is one of the most important tasks to strengthen the sustainability of the urban economy, as high prices for transportation services generate unfair treatment of certain social groups such as the elderly, disabled, unemployed, single-parent families, low-income families and families without cars. Indeed, since most major shopping malls and supermarkets can only be reached by private car, many households may not pay the associated fuel costs if the food can be found in urban areas at a reasonable price.

Practice shows that large retail outlets offer less varied but affordable food products, so people are forced to leave their area for cheaper goods, and small stores in their area are forced to close. Such neighborhoods in the central part of the city are called "food deserts", and they have become the subject of in-depth economic research, which reveals the problems of social exclusion and inequality in relation to different groups of population[8].

In particular, the methods of systematic analysis of urban retail policy were used; methods of detecting the location of "food deserts", assessment of food availability [3, 16] and to measure.

Foreign researchers found out that in order to improve transport accessibility it is necessary to support transport infrastructure (bicycles, electric scooters), change zoning and parking rules in the central areas.

To implement this kind of strategies (studies of food deserts) in Russian cities, we propose the use of GIS-technologies (geographic information systems) in conjunction with accessibility indicators that assess the density of population, the proportion of vehicle owners, the index of accessibility of public transport, the index of pedestrian accessibility (including bicycle).

It is proposed to use the regional science toolkit as the implementation methods of such assessments: minimum distance and coverage methods to assess the availability of supermarkets at the district level; spatial and network methods using GIS technologies for pedestrian accessibility and public transport accessibility; spatial expansion methods to

determine the number of trips as a function of consumer characteristics (age, income level and household structure).

When planning the sustainable development of the retail system in an urban environment, it is necessary to take into account the relationship between the attributes of the shopping centers, such as mall size, number of stores, tenant mix, design, visibility and accessibility, and the characteristics of the shopping area, such as population size, income and age structure, housing, employment structure, distance to potential consumers.

It is also necessary to note the retail trade models associated with estimating the existing distribution of retail supply and demand based on demographic, socio-economic, geographic information systems, location analysis, and commercial zoning data. Using multi-dimensional incentive models, primarily financial ones, local governments increase budget surpluses through local sales taxes.

Malls have a significant impact on the urban economy and local markets. Due to the fact that their share in the retail system is relatively high (i.e. higher than that of non-network retailers) and they are increasingly becoming sources of land rental income, because, built in a certain place, they support the development and growth of the urban environment, creating a multiplier economic effect.

Local governments prefer these forms of trade because of the taxes they collect, the ease with which they control sales in shopping malls, and the federal ones because they demonstrate how developed and urbanized the area is, which is a sign of progress and the spread of consumer culture.

However, for traditional small retail stores on the city streets the situation is reversed, they face economic instability (fluctuations) as their competitiveness is less and their ability to adapt is lower. Therefore, the central business districts of cities, especially small ones, risk losing part of their trading market players i.e. independent retailers.

4 Conclusion

The government faces a complex problem that is to organize and strengthen the economic stability and sustainability of urban development, taking into account the interests of all subjects of the local market. Therefore, planning an urban development strategy must take into account a careful consideration of the tenant mix in urban shopping centers, critical values of population density by district, reasonable limitation of opening new shopping centers, development of pedestrian zones and development of public transport will encourage people to visit the city centers and, therefore, to make more frequent purchases in small stores.

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