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LOGISTICS AS ONE OF THE BASIC BRANCHES OF THE NATIONAL ECONOMY

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1. The economic importance of transportation

Development can be defined as improving the welfare of a society through appropriate social, political, and economic conditions. The expected outcomes are quantitative and qualitative improvements in **human capital** (e.g. income and education levels) as well as **physical capital** such as infrastructures (utilities, transport, telecommunications).

Transport plays a crucial role in economy bringing goods and services to customers as well as transporting passengers to work or acting for pleasure purposes.

The *development of transportation systems* takes place in a socioeconomic context. While development policies and strategies focus on physical capital, recent years have seen a better balance by including human capital issues. Irrespective of the relative importance of physical versus human capital, development cannot occur without both interacting, as infrastructures cannot remain effective without proper operations and maintenance. At the same time, economic activities cannot take place without an infrastructure base. The highly transactional and service-oriented functions of many transport activities underline the complex relationship between its physical and human capital needs. For instance, effective logistics rely on infrastructures and managerial expertise.

SERVICE	SUPPORTING INFRASTRUCTURES
 Transportation	Roads, bridges, tunnels, rail tracks, ports, harbors, airports, distribution centers.
 Water supply	Dams, reservoirs, pipes, treatment plants.
 Water disposal	Sewers, used water treatment plants.
 Irrigation	Dams, reservoirs, canals, sprinkling systems.
 Waste disposal	Landfills, incinerators, recycling facilities, compost units.
 Telecommunications	Telephone exchanges, telephone and cable lines, oceanic cables, cellular towers, fiber optic cables, web servers.
 Power	Power plants, transmission & distribution lines, pipelines.

Where transport investments are ‘transformational’, they can also influence the location of economic activity, for instance allowing businesses to relocate to more productive locations with better access to skills, other resources and customers. Investing in transport connectivity can not only influence the amount of economic activity in a region, it can also influence where it is located.

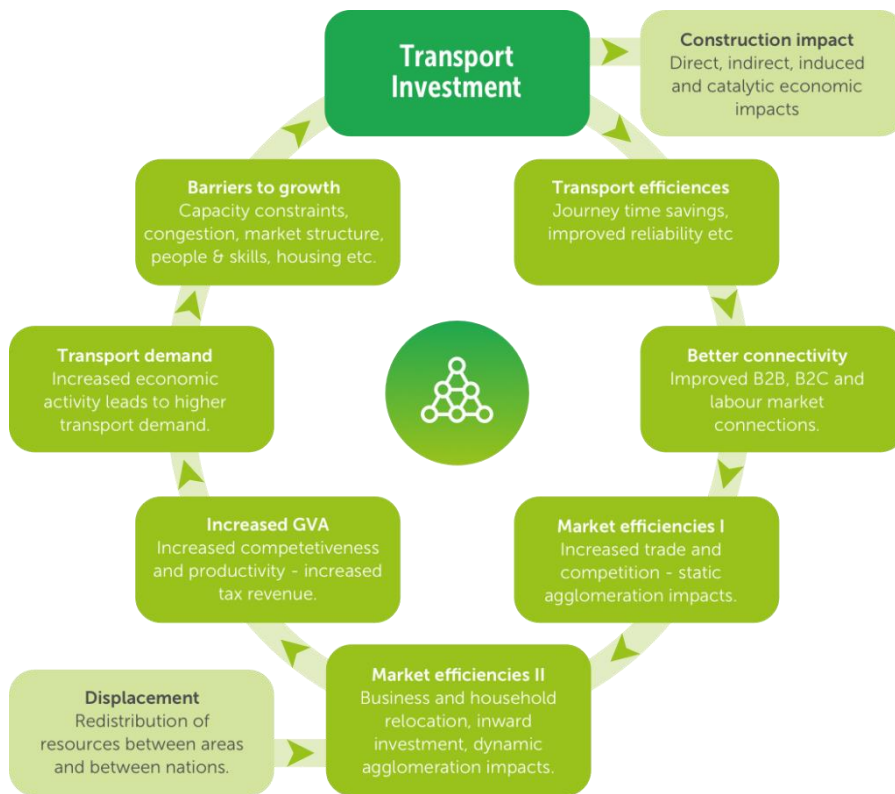


Figure 1.1 Transport investment and economic growth

Figure 1.1 sets out a framework showing the ways in which transport investment, under the right circumstances, can drive economic performance. The figure highlights how direct impacts from investment can create market efficiencies which in turn can lead to changes in productivity and economic growth.

Logistics is a means of increasing the competitiveness of the enterprise in the market by achieving the optimum of activity due to the reduction of transport costs.

Today, companies have a good infrastructure and record keeping, which continues to improve through technological promotion. As time has progressed, so has the importance of logistics, in fact this rise has brought factors such as warehousing and other facilities closer to large towns and cities. Logistics is affecting businesses within towns and cities, bringing more jobs into these locations.

Logistics is an important part of the supply chain. It controls the effective forward and reverse flow of goods and services origin to recipient. This means that logistics has an impact on the shipment of goods and how quickly they can get to the consumer, again adding a competitive edge to other businesses.

Transportation links together the factors of production in a complex web of relationships between producers and consumers. The outcome is commonly a more efficient division of production by the exploitation of comparative geographical advantages, as well as the means to develop economies of scale and scope. The productivity of space, capital, and labor is thus enhanced with the efficiency of distribution and personal mobility. Economic growth is increasingly linked with transport developments, namely infrastructures, but also with managerial expertise, which is crucial for logistics. Thus, although transportation is an infrastructure-intensive activity, hard assets must be supported by an array of soft assets, namely labor, management, and information systems. Decisions must be made about how to use and operate transportation systems to optimize benefits and minimize costs and inconvenience.

2. Relation between logistics and economic growth

In the context of integration, the effects of logistics on the economy are becoming ever more important. When the economy of a nation develops, it leads to the development of logistics. On the other hand, as logistics develops, it is the foundation for the development of other industries in the economy. Today, logistics is even more important when it is considered a base for sectors of the economy because it helps to link the flow of services and goods from the first partners to the final customers. This explains the reason why logistics is indispensable to all businesses as well as the economy. We can see that a lot of nations gain benefits from logistics activities. Companies and enterprises also have a trend to connect all activities of logistics or supply chain functions. Based on those activities, logistics will make conditions for business activities of companies more effective and faster.

Developments in growing global economy and increased competitiveness make logistics a sector which has strategic importance.

The logistics industry and regional economy are interdependent and mutually promoting. The rapidly growing regional economic level can provide a good platform for the development of the logistics industry in the region and play a huge role in promoting the upstream and downstream industries of the logistics supply chain. In

addition, the development of the logistics industry can continuously promote the steady growth of the regional economy and provide continuous energy in promoting the transformation of the regional economic growth mode, promoting the adjustment of the industrial structure, enhancing regional competitiveness, and accelerating regional economic integration construction.

Logistics is found to positively respond to itself as well as to the change in government consumption. The development of the logistics industry plays a very important role in promoting economic growth. It connects production and consumption, domestic and foreign, and urban and rural areas. The logistics industry has a positive impact on regional economic development and the promotion of its comprehensive strength.

Conclusion

In summary, logistics plays a crucial role in driving economic growth. Through efficient supply chain management, trade facilitation, market access, productivity enhancement, infrastructure development, job creation, and technological advancements, logistics contributes to overall economic expansion, competitiveness, and prosperity. A well-functioning logistics system is essential for a thriving economy.

Transportation has significant economic importance as it enables trade, creates employment opportunities, enhances market accessibility, supports industries and supply chains, promotes tourism, drives infrastructure development, and improves time and cost efficiency. A well-developed transportation system is crucial for economic growth, competitiveness, and the overall prosperity of a nation.

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RESEARCH OF THE TIME FOR VEHICLES TO OVERCOME DISTANCES BETWEEN TRAFFIC SIGNALS ON CITY HIGHWAYS

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The problem of managing conflicting flows of road users is and remains relevant all over the world, and does not have a completely acceptable solution even when considering only the traffic flows. The main way to organize traffic at the busiest intersections is to use traffic signals. At the busiest street intersections, the primary way to manage traffic is traffic signal control. And if the traffic signals are close together, then it is a good practice to coordinate them to organize the smoothest flow of vehicles in one or both directions, i.e. introduce the so-called «Green Wave». It should be noted that traffic signal coordination methods date back to the 1960s, but even today they are not perfect, as they do not take into account all the features of vehicle traffic, even in the simplest case of traditional coordination on one street or its section.

It is obvious, that unlike the vehicles in the major street platoon that can arrive at the upstream coordinated intersection at the assumed speed, additional vehicles from minor streets usually have to start moving from zero speed and need some time to attain the progression speed. Determining the conditions required for proper interaction of the vehicles from minor and major streets in a coordinated signal system is an essential issue, the solution of which will facilitate the design of a coordinated timing plan for arterial and improve coordination efficiency.

The general idea of vehicle movement on a coordinated highway is to move at a constant speed, which is well illustrated by the space-time diagram [1]. The main task of the coordination plan is only to create unimpeded conditions for the movement of