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Influence of International Transport and Logistics Systems on Economic Development of the Region

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Abstract: The paper considers functioning of international transport and logistics system (TLS). With that, investigated is the whole of logistical, functional and support subsystems of an international distribution network consisting of units that are integrated with material and related flows in order to maximize synergy through establishing and developing cooperation between participants of transport and logistics process.

Key words: Transport and logistics system · Region · Transit flow

INTRODUCTION

International Transportation and Logistics System (TLS) is the whole of logistical, functional and support subsystems of an international distribution network consisting of units that are integrated with material and related flows in order to maximize synergy through establishing and developing cooperation between participants of transport and logistics process. International TLC is an important factor in economic development of regions within its zone of influence. It provides conditions for improving efficiency of territorial division of labor, development of international and inter-regional cooperation processes, economic integration of countries and regions.

Main elements of emerging international and national transport and logistics systems are international transport routes, corridors and logistics centers, which form a special environment for goods transportation and storage, providing conditions for reduction of goods and services movement period from manufacturer to consumer at minimum cost. Integration of regional transport system into international TLC gives impetus to development of regional economy; it is a factor of solving its social problems.

RESULTS AND DISCUSSION

International Transport Corridor (ITC) is a high-tech transport system where interaction of several kinds of transport is organized within general directions of goods flow (rail, road, river, etc.) and telecommunications. The main goals and tasks of ITC formation and development are creation of favorable conditions to attract international and inter-regional transit flows in national and regional transport links and improvement of traffic in the country.

Both "old" and "new" ITCs have varying degrees of integration into economy of countries and regions they go through. It determines level of ITC cargo flows involvement into regional socio-economic development processes, development of international and inter-regional cooperation links of economy subjects and is developed either historically or can be specified as one of ITC design parameters. By degree value one can identify two directions in ITC formation and development of-transit and integrating ones.

Transit direction of ITC development suggests that they are means of direct transit of goods and services between countries and regions that are ITC starting point and regions that are ITC end points. This development trend is mainly formed in order to minimize transportation and logistics costs of goods delivery. No or poor development of economic relations between supplying regions, consuming regions and regions that ITC passes through, i.e., relative ITC isolation, results in minimization of latter's in direct economic effect, reducing overall effect to the value of transit fees, which is maximized when the maximum intensity of trade flows is reached.

Integrating direction of development, in turn, implies achievement of the goal of maximizing indirect effect of ITC passing through the region, by creating

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conditions for increasing opportunities of international economic relations, including trade and industrial cooperation and economic integration of countries and regions.

It should be noted that both directions exist in ITC operation rather as trends. Each ITC, by the fact of its existence itself, shapes factors for involving regional businesses into economic relations with strategic subjects of the ITC through development of logistics infrastructure at international level.

In general, fact of ITC passing the region cannot be considered an exceptionally positive phenomenon. It defines both positive and negative factors of regional development. Among positive factors are the following:

- Development of transport and logistics infrastructure of the region as a condition for expansion of foreign economic relations;
- Development of logistics services system, the expansion of space activities of regional logistics operators;
- Formation of a new environment for social and economic development of the region by entering international and global level in the hierarchy of economic systems, which make it possible to obtain additional benefits for regional economic entities through use of advantages of international division of labor.

Among main negative factors one should mention in the first place increase of competition level in regional markets through creation of better conditions for them to enter international trade and economic structures-international trading companies, multinational corporations, etc. With the overall low level of competitiveness, positions of regional producers in their own markets can worsen significantly. In this situation, best opportunities are received by large export-oriented enterprises in the region with high level of competitiveness in product markets of strategic ITC subjects.

Possible negative consequences also include excessive specialization of region economy in types of products that are in demand in international markets. Result of this is the fact the development of transport infrastructure is subject to requirements of hyper-specialization, when goals of transport development in the interests of inter-regional cooperation are sidelined.

Based on the above, formation and development of a country's ITC should be based on a careful balance of interests of national and regional economies. During design of ITC routes and cargo profile one should consider degree of openness of regional economy that belongs to ITC, structure of their economic base, opportunities of competitiveness on international markets, focusing on common objectives of maximizing total income derived from international transit and from higher level of international and inter-regional economic cooperation.

Expansion and modernization of ITC system is of particular importance for Russia. Unlike number of other countries, Russia has transport and geographical position that allows forming of a developed ITC system on its territory as in meridional and latitudinal directions. International transport corridors system formed on the territory of the Russian Federation is based on system of Euro-Asian corridors (North-South, Trans-Siberian), adopted at the Second International Euro-Asian Conference on Transport (St. Petersburg, September 2000). It includes corridors linking north-eastern provinces of China through Russian seaports in Primorsky Krai with ports in Asia-Pacific, as well as International Transport (Crete) corridors No. 1, 2, 9, formally established at the Second European Conference on Transport, with suggestions for their extension on territory of Russia, as approved at the Third Pan-European Conference on Transport. This, in particular, allows to create in Russia global level logistics centers linking ITC to general Eurasian transit transportation and logistics network that will provide boost in traffic circulation throughout Eurasian economic space.

Routes of existing and emerging international transport corridors in Russia intersect with routes of other ITCs and transportation arteries at national and regional levels. These areas are of strategic importance in terms of placement of large logistics centers. Particular importance to areas of intersection of major ITC is also associated with definition of their status as areas of concentration and redistribution of international trade flows. Greatest opportunities of Russia in this respect are formed by the regions of Central, Volga and Urals federal districts.

Forecast of global economy suggests that major financial and trade flows in the first half of the XXI century will be focused at the USA-Europe-Far East triangle. The most intensive development of trade is

expected between Asian and European markets. [5] Over the past five years, the EU stays ahead of the U.S. in terms of trade with China and is China's main trading partner (in 2011 turnover amounted to 567.2 billion dollars, with an increase of 18.3% over the previous year). [6] In this regard, the most important task of Russia is the implementation of transport and geographical opportunities as a transit bridge between Europe and Far East.

Among them, special importance will be assigned to international "Western Europe-Western China" transport corridor. Its route should cross China, Kazakhstan, Russian regions of the Urals, the Volga region, Central Russia and others. The project of its Russian part is subject of panel discussions, including selection of regions the ITC route should pass. The greatest interest among proposed present seven options (Fig. 1).

The best option shown at pictures as "Route 1" involves ITC passage from St. Petersburg passing Leningrad region, Vologda Region, Kostroma region, Kirov region, Republic of Tatarstan, Orenburg region towards borders of Kazakhstan. In course or its development and justification, taken into account was a set of strategic indicators, including export load on the corridor, total length of the route, ITC maximum approach to market borders of the regions of Russia that are dynamically developing, opportunities of economic development of Russian territories in the area of the corridor.

Formation of this ITC and launching of its Russian section from St. Petersburg to Kazakhstan, according to optimal route option will increase traffic in 2025 in the segment of road freight transport in the regions related to the highway more than three times, with an adequate increase in volume of tax revenues to federal and regional budgets, increasing employment in the field of road transportation and transport infrastructure, which defines basic parameters of economic, fiscal and social efficiency of the corridor.

International Logistics Centers (ILCs) are a special type of transportation enterprises engaged in integration of logistics (information, storage and transportation) services at international level in course of organization of full cycle of transport control. Their functioning contributes to effective solution of a number of strategic objectives for enhancing socio-economic development of countries and regions of the world on the basis of special organization of the transport medium, which allows to significantly increase speed of servicing traffic flows.

A network of international and inter-regional logistics centers in Russia is formed in accordance with provisions of the Transport Strategy of the Russian Federation for the period up to 2030 [4] and taking into account perspectives identified in programs of the Ministry of Transport and the Ministry of Railways of the Russian Federation, such as "System for tracing transit containers throughout the territory of the Russian Federation", "Creating a segment of federal telecommunications network based on VSAT technology for Russian transport market", creation of information and analytical database for cluster of transport sectors, etc. The first objects of created network of logistics centers are located in St. Petersburg, Moscow and Rostov-on-Don.

The most important directions that ensure implementation of joint international transport corridors and logistics centers should be:

Fig. 1: Alternative routes of "Western Europe -Western China" international transport corridor

- Overall development of major transport hubs located in existing international transport corridors;
- Development of strategic seaports, airports and railway junctions at borders;
- Increasing competitiveness and transit possibilities of Russian inland waterways;
- Creation of a network of distribution centers formed on the basis of aircraft hubs and airports in the largest cities of the Russian Federation;
- Development of large domestic transport centers located at international transport corridors, as well as in centers of the federal and regional significance that, due to geographical location and existing transport links, can qualify for multi-modal centers [4].

Overall, operational experience of international transport corridors and logistics centers shows that they enhance effectiveness of inter-regional and international economic relations of enterprises in the region due to choice of optimal routes, improving quality of logistics services and reducing their cost. Creation of a reasonable system of ITCs and ILCs ensures increased capital turnover as result of significant savings in transaction costs, received as result of involving trade flows into transportation system, where transport efficiency is higher due to lower specific transportation costs and significant acceleration of goods traffic, achieved die to a better organization.

Experience in assessing influence of TLS on development of regional economy shows [2] that use of logistic systems leads to reduction in transportation costs by 7-20%, cost of handling and storage of material resources and finished products are reduced by 15-30%, total logistics costs-by 12-35%, turnover of material resources is accelerated by 20-40%, stocks of resources and finished products are reduced by 50-100%.

Assessing impact of international TLS on development of regional economies that are in their area of influence is made by determining direct and indirect effect of TLS functioning. Direct effect is manifested mainly in growth of cargo volumes, increase of their intensity, in dynamics of goods traffic structure, development of infrastructure for road traffic management, etc. Indirect effect is caused by changes in volume and structure of gross regional product in TLS-related regions, possibilities in emerging new enterprises, industries and industrial clusters, increase in population employment and income, etc. [1].

CONCLUSIONS

Main backbone objects of planned transport and logistics system in Republic of Tatarstan is "Western Europe-Western China" international transport corridor part of which will pass through the region and Sviyaga multi-modal logistics center (MMLC) under construction, which will accommodate considerable volumes of international transport as well.

Estimates of direct and indirect effect of operation of "Western Europe-Western China" ITC showed that for Republic of Tatarstan, direct economic effect in the first year of its operation will be approximately 1.5 billion rubles. With average growth rate of this indicator of 1.5-3.5% during the first 5 years of the ITC, amount of direct effect for the city would be approximately 1.7 billion rubles. Indirect annual economic impact on ITC operation at preserved level (or slight development of) associated road infrastructure will be: after one year of operation -3.3 billion rubles, after five years -3.4 billion rubles. Total annual economic effect of ITC passing territory of Republic of Tatarstan will be approximately 4.7-4.9 billion rubles, which is 0.32 to 0.34% of its gross regional product in 2012.

The made calculations show that expected direct and indirect economic impact from operating Sviyaga MMLC in 2020 for Republic of Tatarstan will be about 6.5 billion rubles. Thus, expected total annual contribution of ITC and MMLC into economic development of the region at the end of the decade will be 11 to 12 billion rubles, which corresponds to 0.7 to 0.8% of gross regional product of the Republic in 2012.

REFERENCES

1. Key figures on Europe, 2010. Luxembourg: Publications Office of the European Union, pp: 245.
2. Fritsch, M. and G. Franke, 2004. Innovation, Regional Knowledge Spillovers and R and D Cooperation. Research Policy, 33(2): 245-255.
3. Power, M., 2004. Counting, Control and Calculation: Reflections on Measuring and Management. Human Relations, 57(6): 765-783.
4. Raymond, C.M., B.A. Bryan, D.H. MacDonald, A. Cast, S. Strathearn, N.G. Bagautdinova, I.R. Gafurov, N.V. Kalenskaya and A.Z. Novenkova, 2012. The Regional Development Strategy Based on Territorial Marketing (the Case of Russia). World Applied Sciences Journal, 18: 179-184.

5. Safiullin, M.R., L.A. Elstin and A.I. Shakirova, 2012. Evaluation of Business and Economic Activity as a Short-Term Forecasting Tool. Herald of the Russian Academy of Sciences, 4: 290-294.
6. Zhi, H., 1995. Risk Management for Overseas Construction Projects. International Journal of Project Management, 13(4): 231-237.
7. Pesaran, M.H., T. Schuermann and S.M. Weiner, 2004. Modeling Regional Interdependences Using a Global Error-Correcting Macroeconometric Model. Journal of Business and Economic Statistics, 22(2): 129-162.
8. Audretsch, D.B. and E.E. Lehmann, 2005. Does the Knowledge Spillover Theory of Entrepreneurship Hold for Regions? Research Policy, 34(8): 1191-1202.
9. Larionova, N.I. and Y.A. Varlamova, 2013. The Trends of Household Economic Behavior in International Comparison. Procedia Economics and Finance, 5: 737-746.
10. Safiullin, L.N., G.N. Ismagilova, D.Kh. Gallyamova and N.Z. Safiullin, 2013. Consumer Benefit in the Competitive Market. Procedia Economics and Finance, 5: 667-676.
11. Sohngen, B., R. Mendelsohn and R. Sedjo, 1999. Forest Management, Conservation and Global Timber Markets. American Journal of Agricultural Economics, 81(1): 1-13.
12. Glebova, I., D. Rodnyansky, R. Sadyrtdinov, R. Khabibrakhmanova and Y. Yasnitskaya, 2013. Evaluation of Corporate Social Responsibility of Russian Companies Based on Nonfinancial Reporting. Middle-East Journal of Scientific Research, 13: 143-148.
13. Novenkova, A.Z., N.V. Kalenskaya and I.R. Gafurov, 2013. Marketing of Educational Services: Research on Service Providers Satisfaction. Procedia Economics and Finance, 5: 667-676.
14. Safiullin, L.N., N.G. Bagautdinova, N.Z. Safiullin and I.R. Gafurov, 2012. Influence of Quality of the Goods on Satisfactions of Consumers. International GSTF Business Review (GBR), 2(2): 225-232.
15. Grandgirard, A. and T. Kalivas, 2009. Mapping Community Values for Natural Capital and Ecosystem Services. Ecological Economics, 68(5): 1301-1315.
16. Melnik, A.N. and O.N. Mustafina, 2013. The Organization of Russian Power Market in Modern Conditions. Middle-East Journal of Scientific Research, 13: 91-94.
17. Brown, G. and C. Raymond, 2007. The Relationship between Place Attachment and Landscape Values: Toward Mapping Place Attachment. Applied Geography, 27(2): 89-111.