ORIGINAL ARTICLE
DOI: https://doi.org/10.30932/1992-3252-2022-20-1-7

World of Transport and Transportation, 2022,
Vol. 20, Iss. 1 (98), pp. 194–199

Transport Policy: Theoretical Framework and Economic Aspects

Artur V. Karlov
Russian University of Transport, Moscow, Russia.
✉ *karlov@edu.rut-miit.ru.*

Artur V. KARLOV

ABSTRACT

The transport policy of the state is an integral part of its economic and spatial policy. The relevance of the clarification of the content of the term «transport policy» is conditioned by the attention of the state to the issues of strategic planning in the field of transport. In Russia, it was clearly evidenced by the approval in 2021 by the Government of the Russian Federation of the updated Transport Strategy of the country until 2030 with a forecast for the period until 2035.

The article reviews the definitions of transport policy in the scientific literature: its economic, environmental, technical, geopolitical and other aspects are considered. At the same time, the main emphasis of the study was on the economic factors of transport policy: the materials of economic theories (spatial development and distribution of productive forces), decision theories and methods for assessing the effectiveness of investments in transport infrastructure were considered. The definitions and the range of their application are specified. Also, the components of the transport policy have been established and a range of tools of its implementation has been defined, incl. financial, regulatory, etc.

Based on the data obtained, a structure of the relationship between transport policy and economic growth was compiled, social and other components to economic aspects were identified.

Keywords: transport policy, state policy, transport, transport economics.

For citation: Karlov, A. V. Transport Policy: Theoretical Framework and Economic Aspects. World of Transport and Transportation, 2022, Vol. 20, Iss. 1 (98), pp. 194–199. DOI: https://doi.org/10.30932/1992-3252-2022-20-1-7.

The text of the article originally written in Russian is published in the first part of the issue.
Текст статьи на русском языке публикуется в первой части данного выпуска.

INTRODUCTION

The transport policy of the state is both a well-studied and at the same time poorly structured field of knowledge. While the role of transport in the economy, the impact of individual transport projects on socio-economic development are the subject of numerous scientific works, the very term «transport policy», the range of its use, study and application is still poorly substantiated in the Russian-language scientific literature. Consequently, the methodological framework of the transport policy is also rather poorly defined.

The topic of transport policy, as a theoretical field of knowledge, is especially relevant in the country since in November 2021 the Government of the Russian Federation approved the updated Transport Strategy of the Russian Federation until 2030 with a forecast for the period up to 2035[1]. The 2021 edition of the strategy introduced some new principles and concepts into the system of state administration and management of transport industry development. The Strategy has shifted spotlight to consumers of transport services – passengers, business, the state, thereby setting a benchmark for customer centricity. Also, the Strategy introduced the concept of a Single backbone transport network, which includes a backbone network of roads, railways, airports, seaports, inland waterways. The single network is the framework of the country's transport system, which will receive priority development.

Thus, the state has formed the main vectors and areas for implementation of the transport policy.

The *objective* of the study is to analyse the theoretical framework of modern transport policy: a review of concepts (transport policy, strategic planning), scientific basis (theory of spatial development, decision-making methods) and the relationship of transport policy with economic growth.

Research applied *methods* of a systematic approach, synthesis, linguistic and economic analysis, expert assessments.

The framework of the study included analysis of available definitions and methodological provisions for the application of transport policy tools, development of proposals for their development. Relationship between practical tools and scientific developments was revealed, the economic aspects of transport policy were identified and structured.

RESULTS

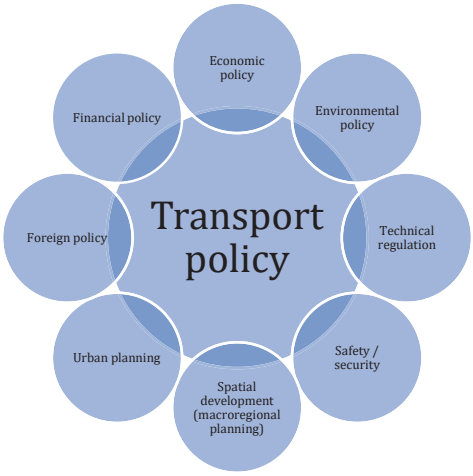
Analysis and Adaptation of Terminology

The analysis of domestic literature on the topic of transport policy demonstrates a broad interpretation of the term «transport policy». Even though the term is well-established and is used by domestic researchers in the context of studying the political and economic prerequisites for implementation of decisions in the field of transport, it seems that there is no single conceptual construct in respect of the very term «transport policy».

Thus, researchers, among them Yu. F. Golius, N. V. Mishina, M. Yu. Sokolov, consider transport policy as a derivative of the broader context of state policy [1–4]. Several authors, e. g., O. V. Dmitruk, V. V. Tsyganov, V. A. Borodin, A. V. Lemeshkova, Yu. I. Shelistov, V. Yu. Ladvischenko, consider transport policy in the context of regional economic integration, for example, within the framework of the European Union and of the Eurasian Economic Union [5–7]. M. Yu. Medvedkov discusses transport policy also in the context of accession to the WTO [8], O. I. Karasev, A. O. Krivtsova [9] and many other authors considered examples of transport policy at the level of urban economics. It should be noted that none of the above domestic sources has defined the term «transport policy».

In foreign literature, the subject has been most elaborated by Jean-Paul Rodrigue [10], who has considered the differences between policy and planning in the transport sector and has also given clear definitions to both terms. Iain Docherty, Jon Shaw considered in their chapter in «International Encyclopedia of Human Geography» [11] a set of management models in the transport industry within the framework of the broader English term *governance* that has specific interpretation, which in a rather simplified form can be explained as management (at the state, corporate level) based on vesting with authority. In applied research, transport policy, as a rule, is widely considered in the context of analysing the effectiveness of infrastructure projects [12; 13] and when taking into account the factors of sustainable development [14].

[1] Decree of the Government of the Russian Federation dated November 27, 2021, No. 3363-r «On approval of the Transport Strategy of the Russian Federation until 2030 with a forecast for the period up to 2035». [Electronic resource]: https://mintrans.gov.ru/documents/8/11577. Last accessed. 17.01.2022.



Pic. 1. Formation of transport policy [compiled by the author].

The analysis of the mentioned materials allows to synthesise a range of areas (shown in Pic. 1) to which the transport policy is related.

Based on the analysis carried out, the following definition has been formulated: «*Transport policy is a set of practices, principles and criteria underlying regulation of the social, economic, technical and environmental aspects of development of the transport system, as well as its safe operation and achievement of its output*».

The introduction of this definition into scientific circulation will allow substantiating and analysing certain scientific areas of transport policy, its components, and fundamental principles.

Economic Aspects of Implementation of Transport Policy

It is proposed to consider in more detail the economic aspects of transport policy. An analysis of the above and other sources indicates that the primary (but not the only) objective of transport policy is to reduce transport costs.

The task of reducing transport costs is studied in a significant amount of dedicated scientific literature devoted, it is also closely related to the problem of spatial development and location of productive resources, economic geography [15].

Despite a well-developed theoretical basis, in real life decisions on spatial development are made outside the framework of rational processes, they are influenced by political and historical factors.

Therefore, the decision-making process in transport policy is also an integral part of the policy implementation process as such. The very theoretical basis of this process is quite universal and lies in the plane of political science and is considered within the framework of the theories of decision-making and regulatory impact assessment[2] [16]. At the same time, this methodology takes it to the next level of transport policy: selection of specific projects for implementation. An example of this connection can be illustrated with the methods for selecting infrastructure projects based on the methodology of multi-criteria analysis, which, as a rule, requires expert assessments and the assignment of weight coefficients for various criteria, including, for example, for sustainable development factors [17].

Table 1 shows a chain of principles and methodologies for planning the development of transport systems, which includes the main theoretical basis for implementation of transport policy: from the basics (justification of the need to reduce transport costs), through decision-making (cognitive process), to applied decisions and assessments (assessment of the effectiveness of decisions made).

Relationship Between Transport Policy and Economic Growth

Investments in transport infrastructure and technological development of the industry traditionally lead to a reduction in transport costs, which, in turn, stimulates economic growth [18]. Claudia N. Berg, Uwe Deichmann, Yishen Liu and Harris Selod note the role of the state and its policies in achieving relevant economic indicators. Based on the analysis of world

[2] Kuznetsova, N. V. Methods of making managerial decisions: Study guide. Moscow, Infra-M publ., 2015, 222 p.

Table 1

Structural representation of the theoretical foundations of implementation of transport policy [developed by the author]

Methodology	Theoretical and methodological approaches
Theories of spatial development and location of productive resources (contribution of the transport industry to the economy)	• Theories of regional specialisation and interregional trade (A. Smith, D. Ricardo, E. Heckscher, B. Ohlin). • Industrial location [«Standortes»] theory (J. Thünen, W. Launhardt, A. Weber). • W. Christaller's central-place theory. • A. Lösch's industrial location theory. • W. Isard's regional concept. • Theories of growth poles and clusters. • Theory of macro-regional planning. • Various models for assessing the contribution of the transport industry to the economy (interregional intersectoral optimisation model, etc.).
Decision-making methodology (main applicable models and theories)	• Classical (normative). • Behaviourist (H. Lasswell). • Descriptive (H. A. Simon). • Carnegie model (H. A. Simon, J. G. March, R. M. Cyert). • Model of all-comprehensive rationality (V. L. Smith, J. Bentham). • Cognitivist model of bounded rationality. • Model of incremental decision-making process (H. Mintzberg). • Garbage can model (M. D. Cohen, J. G. March, J. P. Olsen). • Ch. E. Lindblom's theory of gradual increments. • Delphi method.
Methodology for assessing the effectiveness of investments into the transport infrastructure for the economy	• Cost-benefit analysis (CBA) and its derivatives: o cost-effectiveness analysis (CEA); o cost-utility analysis (CUA); o weighted cost effectiveness analysis (WCEA). • Methods of analysis of the cumulative economic effect (including models of intersectoral «input-output» balance). • Methods of multi-criteria analysis (including the T. Saaty's Analytic Hierarchy Process, and others).

practices in implementation of transport policy, it seems possible to highlight the following three main instruments of transport policy in the economic plane:

- Investments in infrastructure.
- Financial regulation (subsidies, taxes, etc.).
- Legal regulation.

Investments directly affect economic development already at the stage of infrastructure construction thanks to an increase in output from other industries (intersectoral balance model and others [19; 20]). As a rule, investments in transport infrastructure reduce transport costs, increase availability of transport services for the population, cargo owners, and the state, and contribute to spatial and industrial development.

Financial regulation includes subsidies or taxes that influence choice of mode of transport and consumer's behaviour (e.g., reductions in fares for certain groups of population or carriers, tolls, parking fees, fuel surcharges, and subsidies for environmentally friendly transport).

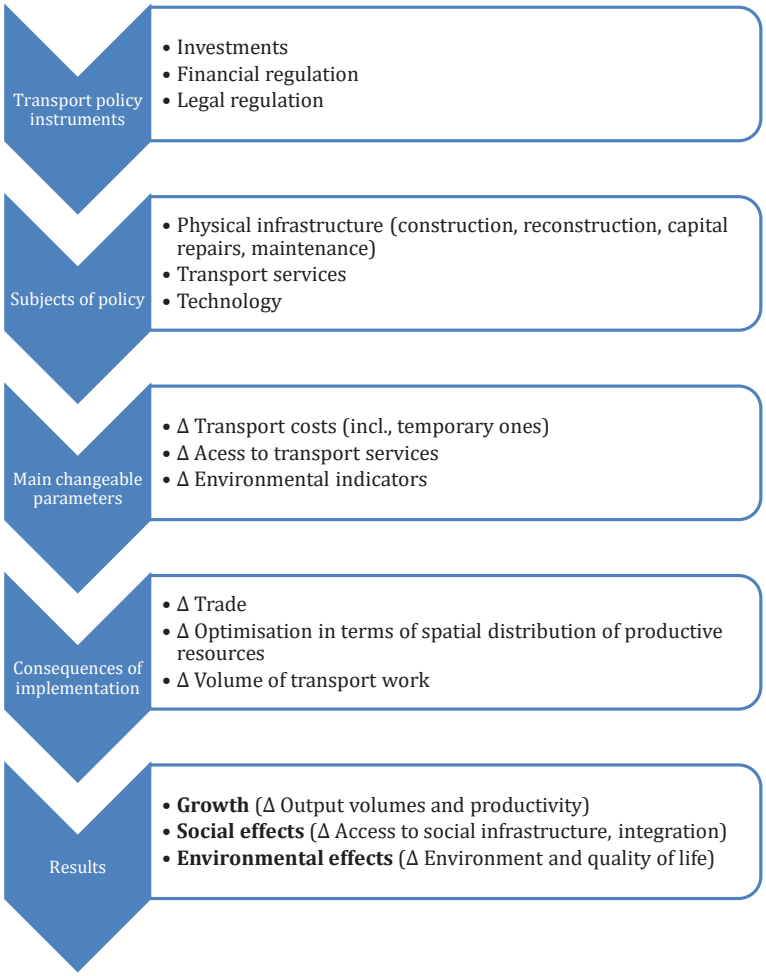
Legal regulation includes regulatory acts of direct action (for example, establishing environmental requirements for rolling stock, regulation of the use of control systems of driving times and rest periods, putting into operation of systems controlling carriers' rolling stock (Platon[3], vehicles' weight and size control), acts regulating market patterns (deregulation, privatisation, nationalisation) or the organisation of a particular sector of the industry (e.g., regulation of the taxi or bus market), as well as acts regulating construction of infrastructure.

Some transport policy measures are aimed at stimulating the supply side of the transport services market (for example, investment in infrastructure), while others are demand-driven, such as transportation subsidies.

The projection of economic aspects of transport policy on the state policy leads to the effects that result in:

1) Stimulating growth (for example, by reducing transport costs, which facilitates the agglomeration effect, stimulates trade and

[3] Russian Platon Electronic Toll Collection (ETC) system intended for collection of toll charges offsetting the damage caused to Russian Federal Highways by vehicles exceeding 12 tons of gross vehicle weight (HGV N3 sub-category). – *Transl. note.*



Pic. 2. Logic of transport policy implementation [compiled by the author].

structural changes, leads to increased productivity).

2) Facilitating access to social infrastructure (for example, by improving access to transport services for the population, including for rural and socially vulnerable groups).

3) Environmental factors (for example, by reducing the negative impact of transport on the environment).

Considering the above, it is possible to construct the process diagram of the scheme in terms of implementation of the transport policy instruments, taking into account the economic aspects (Pic. 2).

Compliance with the presented logic makes it possible to visually trace the relationships within the set of transport policy instruments described above, its impact on policy entities, to monitor variable targets, assess the consequences of implementation of the transport policy on exogenous (trade, industry) and endogenous (volume of transport work) factors, and to analyse the results in terms of achieving the target rates of economic growth, sound social effects and reducing the negative environmental impact.

CONCLUSION

The transport policy of the state is formed considering numerous factors: social, economic, environmental, technological, political, and other ones. The results of the study, the proposed definitions, and conceptual approaches offer a variant of structured representation of these factors to substantiate the decision-making methodology in transport policy, identify and systematise its economic aspects.

The structured representation allows further development of a theoretical basis to study the transport policy of the Russian Federation, the

features of its formation on the examples of specific mechanisms and legislation.

REFERENCES

1. Goliusov, Yu. F. Priorities of the Russian transport policy [*Prioritety rossiiskoi transportnoi politiki*]. *Vlast'*, 2009, Iss. 6, pp. 58–60. [Electronic resource]: https://www.elibrary.ru/item.asp?id=12786632. Last accessed 17.01.2022.

2. Mishina, N. V. Transport policy as an industry subsystem of political management [*Transportnaya politika kak otraslevaya podsistema politicheskogo upravleniya*]. *Gosudarstvennoe i munitsipalnoe upravlenie. Uchenie zapiski SGAKS*, 2011, Iss. 2, pp. 139–144. [Electronic resource]: https://www.elibrary.ru/item.asp?id=19029660. Last accessed 17.01.2022.

3. Sokolov, M. Yu. «Safe and high-quality roads» – a priority project of transport policy [«*Bezopasnie i kachestvennie dorogi*» *– prioritetniy proekt transportnoi politiki*]. *Transport of Rossiiskoi Federatsii,* 2016, Iss. 5 (66), pp. 3–6. [Electronic resource]: http://rostransport.com/transportrf/download.php?src=/transportrf/pdf/66/1994-831X-2016-5-3-6.pdf. Last accessed 17.01.2022.

4. Gorbachik, T. V. Economic Aspects of Transport Complex Strategic Management. *World of Transport and Transportation*, 2016, Iss. 4, pp. 106–115. [Electronic resource]: https://mirtr.elpub.ru/jour/article/view/1986. Last accessed 17.01.2022.

5. Khegay, Yu. A. Foreign experience of the transport policy [*Zarubezhniy opyt transportnoi politiki*]. *Teoriya i praktika obshchestvennogo razvitiya*, 2013, Iss. 8, pp. 350–352. [Electronic resource]: https://www.elibrary.ru/item.asp?id=36422821. Last accessed 17.01.2022.

6. Tsyganov, V. V., Borodin, V. A., Lemiashkova, A. V. Concept of network-centric transport policy in Eurasia [*Kontseptsiya setetsentrichnoi transportnoi politiki v Evrazii*]. *ITNOU: information technologies in science, education and management*, 2018, Iss. 4 (8), pp. 45–49. [Electronic resource]: https://www.elibrary.ru/item.asp?id=36422821. Last accessed 17.01.2022.

7. Shelistov, Yu. I., Ladvischenko, V. Yu. Transport policy of the EU: logic of formation, institutional structure [*Transportnaya politika ES: logika stanovleniya, institutsionalnaya struktura*]. *Moscow University Bulletin. Series 12. Political sciences*, 2010, Iss. 6, pp. 84–94. [Electronic resource]: https://www.elibrary.ru/item.asp?id=15607153. Last accessed 17.01.2022.

8. Medvedkov, M. Yu. Accession of Russia to the WTO and its transport policy [*Prisoedinenie Rossii k VTO i ee transportnaya politika*]. *Transport Rossiiskoi Federatsii*, 2006, Iss. 1 (2), p. 17. [Electronic resource]: http://rostransport.com/transportrf/pdf/2/06.pdf. Last accessed 17.01.2022.

9. Karasyov, O. I., Krivtsova, A. O. Efficiency factors of urban transport policy [*Faktory effektivnosti transportnoi politiki goroda*]. *Vestnik Voronezhskogo gosudarstvennogo universiteta,* 2019, Iss. 2, pp. 22–28. [Electronic resource]: https://www.elibrary.ru/item.asp?id=37635251. Last accessed 17.01.2022.

10. Rodrigue, J.-P. The Geography of Transport Systems. 5th ed., Routledge, 2020, 480 p. DOI: https://doi.org/10.4324/9780429346323.

11. Docherty, I., Shaw, J. Governance, Transport. In: Kitchin, R., Thrift, N. (eds.). International Encyclopedia of Human Geography. Amsterdam: Elsevier, 2009, pp. 615-622. DOI: https://doi.org/10.1016/B978-008044910-4.01033-6.

12. Vickerman, R. Beyond cost-benefit analysis: the search for a comprehensive evaluation of transport investment. *Research in Transportation Economics*, 2017, Vol. 63, pp. 5–12, DOI: https://doi.org/10.1016/j.retrec.2017.04.003.

13. Transport infrastructure and economic growth (2019) [*Transportnaya infrastruktura i ekonomicheskiy rost(2019)*]. Report the Centre of Economics of Infrastructure. Scient. ed. P. A. Chistyakov, P. A. Lavrinenko. Moscow, Pero publ., 2019, 142 p. [Electronic resource]: http://infraeconomy.com/tpost/m9cuy36th1-transportnaya-infrastruktura-i-ekonomich. Last accessed 17.01.2022.

14. Efimova, O. V., Baboshin, E. B., Zagurskaya, S. G. Transformation of competencies for sustainable transport development [*Transformatsiya kompetentsii dlya ustoichivogo razvitiya transporta*]. *Ekonomika zheleznykh dorog*, 2021, Iss. 12, pp. 43–53. [Electronic resource, paid access]: https://www.elibrary.ru/item.asp?id=47393147.

15. Bukhvald, E. M., Kolchugina, A. V. The spatial development strategy and national security priorities of the Russian Federation [*Strategiya prostranstvennogo razvitiya i prioritety natsionalnoi bezopasnosti Rossiiskoi Federatsii*]. *Ekonomika regiona*, 2019, Iss. 3, pp. 631–643. [Electronic resource]: https://www.elibrary.ru/item.asp?id=40380775. Last accessed 17.01.2022.

16. Zembatov, M. R. Regulatory impact assessment in foreign countries: comparative legal analysis and prospects of Russian economy [*Otsenka reguliruyushchego vozdeistviya v zarubezhnykh stranakh: sravnitelno-pravovoy analiz i perspektivy Rossiiskoi ekonomiki*]. *Problemy ekonomiki i yuridicheskoi praktiki*, 2018, Iss. 5, pp. 37–42. [Electronic resource]: https://www.elibrary.ru/item.asp?id=36457505. Last accessed 17.01.2022.

17. Donais, F. M., Abi-Zeid, I., Waygood, E. O. D., Lavoie, R. A review of cost–benefit analysis and multicriteria decision analysis from the perspective of sustainable transport in project evaluation. *EURO Journal on Decision Processes*, 2019, Vol. 7, Iss. 3–4, pp. 327–358. DOI: https://doi.org/10.1007/s40070-019-00098-1.

18. Berg, C. N., Deichmann, U.,Liu, Y., Selod, H. Transport Policies and Development. *The Journal of Development Studies*, 2017, Vol. 53, Iss. 4, pp. 465–480. DOI: https://doi.org/10.1080/00220388.2016.1199857.

19. Shirov, A. A., Yantovsky, A. A. Intersectoral macroeconomic model as the core of complex forecasting calculations [*Mezhotraslevaya makroekonomicheskaya model kak yadro kompleksnykh prognoznykh raschetov*]. *Problemy prognozirovaniya*, 2014, Iss. 3 (144), pp. 18–31. [Electronic resource]: https://www.elibrary.ru/item.asp?id=23378051. Last accessed 17.01.2022.

20. Zamkovoy, A. A., Ivanter V. V., Leshchev, M. V., Mikhailov, V. V., Pekhterev F. S., Popov, E. V., Uzyakov M. N. Shestakov, P. A., Shirov, A. A. Using the method of intersectoral balance for scientific substantiation of strategic development of the Russian railway system [*Ispolzovanie metoda mezhotraslevogo balansa dlya nauchnogo obosnovaniya strategicheskogo razvititya zheleznodorozhnoi sistemy Rossii*]. Moscow, UP Print publ., 2015, 208 p. [Electronic resource]: https://ecfor.ru/publication/mezhotraslevoj-balans-zheleznodorozhnaya-sistema. Last accessed 17.01.2022.

Information about the author:
Karlov, Artur V., *Ph.D. student at Russian University of Transport, Moscow, Russia, karlov@edu.rut-miit.ru.*

Article received 17.01.2022, approved 11.02.2022, accepted 18.02.2022.