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# The Supply Chain Management Role as an Economic Reform to Overcome the Problem of Regional Imbalances, in Republic of Tatarstan

Askar Nailevich Mustafin [1], Alexander Evgenyevich Shlyakhtin [2], Rastislav Kotulič [3]

[1]*Institute of Management, Economics and Finance, department of Economic Theory and Econometrics Kazan Federal University*
[2]*National Research University – Higher School of*
[3]*Economics University of Prešov, Faculty of Management, Department of Economic Sciences and Economy*
[3]rastislav.kotulic@unipo.sk

*Abstract*— **The aim of this paper is to investigate how supply chain integration affects company performance. The paper considers the supply chain role in economy and regional disproportions between regions and federal districts in the Russian Federation. In the course of the proposed economic reform (fiscal space), we discovered that within 5 years, the least developed municipal entities that are part of the subject of Russia - the Republic of Tatarstan - will be able to receive up to $ 200 thousand (US Dollars), which could become the foundation for the further socio-economic transformations in the territory, and also act as an instrument for the formation of a more favorable investment climate. These distribution effects, both across and within countries, are likely to affect trade policy, and consequently, the evolution of supply chains.**

*Keywords*— *regional imbalances, supply chain management, regions, federal districts, economy reform.*

## 1.    Introduction

The economy of each country has undergone a certain supply chain process that had an impact on shaping of society and economy. The economy transformation from a centrally planned to a market economy is accompanied by a fall in GDP and industrial production practically in all countries of Central and Eastern Europe. The decline was due to a variety of factors already known, such as: deformed structure of the economy, trade liberalization, and related work is the very tough competitive environment. Catching up with the developed regions of the European Union is lengthy in terms of time, what is dealt with in a variety of domestic and international studies and publications [1-8].

In Russia, the problem of regional imbalances is getting more acute lately. This topic becomes the agenda on various discussion platforms, the subject of many scientific works. From 2000 to 2018 there were at least 3 significant economic crises in Russia, which had a significant impact on the economy of the regions and caused a significant redistribution of production forces in the country. From the country's historical development point of view, disproportions always existed. Most often they were caused by the existence of favorable natural and climatic conditions, the existence of minerals. Comparing some of the socio-economic indicators in the process of civilizational transformation of the state, both positive and negative changes in them can be noted.

At present, the country has adopted a supply chain policy for the development of the economy and social sphere and is planning to become one of the five largest economies of the world within 5 years. This goal was directly voiced by the elected President of the country V.V. Putin. To this end, the country now, we believe, requires a large number of qualitative reforms, as a result of which it is possible to achieve significant results with the unchanged structure of the fundamental principles of the organization of the economy and the rules of its functioning. Recently, many development institutes and growth points have been created in Russia, with special economic zones of various types, territories of advanced development (territories of advanced social and economic development), industrial parks, and technoparks. And their number is growing significantly and they are located throughout the country, taking into account certain features.

Russia is a federal state that has a complex structure of subnational governments, the number of which reaches more than 80 subjects of the federation [9]. The country's budget system consists of three levels: federal, subfederal and municipal. It should be noted that, although the country is federal, but regional and municipal authorities have much less budgetary authority than the federal authorities. The proportions of income distribution budgets in 2016 were approximately 13:8:3 (federal, subfederal and

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municipal budgets).

The paper pays much attention to the theoretical justification of the causes and nature of regional imbalances.Gross domestic product (GDP) is among the most commonly used indicators, which can be used to express the maturity of the economy and living standards. Regional gross domestic product (RGDP) is calculated as the sum of value added for the sector in the region, and taxes on products minus subsidies on products. In comparison the RGDP expressed in purchasing power parity (PPP), purchasing power parity calculated based on prices eliminates the effects of different price levels between countries [10].

Regional disproportions can be understood as "differences in the socio-economic development of regions that are the result of irregularities" [11]. The study of the causes of differences is important, as this is the determining factor in the development of successful managerial policies, through which resources are mobilized and the goals of the development of society are achieved.

In [12] make the thesis that regional development depends on a combination of many factors: geographic location, size of territory, demography, specialization of the region, productivity, physical and human capital, and others. There are 3 sets of factors that determine the economic development of the region.

The first set consists of features of the country and national supply chain policy. For example, growth will be higher in the regions of the country at a high peak of the business cycle than in the regions of the country experiencing a recession. The second set of factors is centered around the natural wealth of the region. The most obvious example is the presence of oil or diamond mines in the region. "Regional assets" represent the third set of factors that affect growth prospects in the region. They can be mobilized through appropriate policies.

One of the most widely used methods for studying territorial disproportions is the analysis of the temporal and spatial variation of GDP per capita [13]. In accordance with the method, we obtain a picture of the evolution of territorial disproportions by analyzing the dynamics of the standard deviation value, calculated from the natural log of GDP per capita, measured in constant use value.

Based on the methodology [14], we analyzed the situation of individual regions of the country in federal districts, as well as the level of individual federal districts relative to the national average. For calculations, we used the data on the Regional

gross domestic product by region and county, as well as the calculated average Regional gross domestic product for the country in prices adjusted for annual inflation, from 2000 to 2015. In the calculations we did not use data on the Crimean Federal District.

## 2.    METHODS

Competitive pressures have a strong and direct effect on supply chain integrity and strategy. Integration of activities within and across organizational boundaries has become a major challenge for supply chain executives. At present, integration efforts extend beyond traditional process product design and task integration to focus on outsourcing relationships with customers and suppliers. The emergence of firms as regional champions in the production of different parts and components was central to this "horizontal" internationalization of supply chains among high-wage, advanced economies. Increasingly, firms across advanced and developing countries add value along these global supply chains by completing a specific task associated with the production of a finished product and then exporting it. Method of the analysis based on the measured speed (m). Input characteristics for evaluation analysis are based on the finding that there are regions A and B with an output value of gross domestic product GDPA a GDPB where per capita of the region accounts for a certain level of gross domestic product, expressed in Rubles and in current prices as GDPA/SA a GDPB/SB. The population of the region A and B represent variables SA and SB. The value of A characterizes the level of the territory under consideration, and B is the average level in the federal district to which the region belongs, and in the second case the average level in the country.

Calculation of the specific speed (m) by direct methods of regional development was calculated as follows [15, 16]:

Specific speed of regional development can take the following values:

$m < 1$, there is no the elimination of disparities in the economic level of regions,

$m = 1$, the level of differences does not change,

$m > 1$, it leads to the elimination of disparities in the economic level of regions.

## 3.    Results

The belief that supply chain management can make companies more accountable to customers and therefore more profitable, has led managers to place more emphasis on improving the supply chain process. Many organizations and companies in Iran have to some extent realized the importance of the role and position of supply chain management in the success of their business. As a result of our calculations, we obtained the following

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results (Table 1). Data for calculations were used from publicly available official statistical sources of the State Statistics Service of the Russian Federation.

**Table 1** Comparison of Russian regions and federal districts

|  | **Federal Region** | 2006 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|
| Index leader- the Belgorod Region | Central | 0,30 | 0,56 | 0,07 | 0,17 | 1,03 | 4,97 | 0,33 | -0,4 | -0,1 |
| Index outsider – the Ivanovo Region |  | 0,21 | 0,05 | 0,12 | 1,19 | 0,27 | -0,2 | 1,09 | 1,13 | 0,02 |
| Index – Moscow city |  | 2,31 | 1,94 | 2,78 | -1,14 | 1,83 | -5,1 | 2,05 | 2,35 | 3,32 |
| Index leader – The Komi Republic | North-West | 1,92 | 1,10 | 0,74 | 3,72 | 1,68 | 2,47 | 4,56 | 2,45 | 20,5 |
| Index outsider – The Pskov Region |  | 0,61 | 0,30 | 0,31 | 0,89 | 0,31 | 0,14 | -0,15 | 0,39 | 5,9 |
| Index Saint Petersburg city |  | 1,21 | 2,01 | 1,00 | -0,21 | 1,24 | 0,30 | -0,32 | 1,44 | 9,1 |
| Index leader – The Krasnodar Territory | Southern | 1,17 | 0,78 | 0,35 | 1,47 | 1,31 | 1,46 | 1,39 | 2,17 | -5,2 |
| Index outsider – The Republic of Kalmykia |  | 0,63 | 0,27 | -0,3 | -0,82 | 0,59 | 1,13 | 0,96 | 0,04 | -3,7 |
| Index leader – The Republic of Daghestan | North Caucasus | 1,19 | 1,82 | -9,9 | -34 | 1,04 | 1,01 | 1,64 | 126 | 1,57 |
| Index outsider – The Kabardino- Balkarian Republic |  | 0,43 | 0,27 | -3,1 | 23 | 0,86 | 1,76 | -0,34 | -133 | 0,88 |
| Index leader – the Republic of Tatarstan | Volga | 1,35 | 1,20 | 1,18 | 0,65 | 1,88 | 0,77 | 0,83 | 1,76 | 1,25 |
| Index outsider – The Kirov Region |  | 0,48 | 1,00 | 0,46 | 1,21 | 0,30 | 0,07 | 0,78 | 0,07 | 0,33 |
| Index leader – The Tyumen Region | Ural | 1,14 | 4,16 | 2,22 | 1,39 | 2,30 | 1,76 | 4,04 | 2,82 | 2,49 |
| Index outsider – The Kurgan District |  | 0,53 | -2,3 | 0,10 | 0,13 | 0,19 | 0,09 | -3,65 | 0,44 | 0,68 |
| Index leader – Krasnoyarsk Territory | Siberian | 2,30 | 291 | 1,07 | 3,66 | 0,76 | -11 | 8,92 | -0,1 | 0,55 |
| Index outsider – The Republic of Buryatia |  | 0,64 | -6,4 | 0,66 | -0,18 | 0,55 | 0,13 | -1,34 | 2,04 | 0,68 |
| Index leader – Sakhalin Region | Far Eastern | 4,35 | 1,13 | 6,88 | 3,83 | 3,33 | -13,9 | 3,12 | 13,7 | 7,16 |
| Index outsider – The Amur Region |  | 0,88 | 0,39 | 1,07 | 0,52 | 0,91 | 53,91 | 5,48 | -0,3 | -0,5 |

(Source - compiled by the authors, Federal State Statistic Service of Russian Federation 2018)

**Table** Index for some municipalities of the Republic of Tatarstan

| **Municipal Settlement** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **Total** |
|---|---|---|---|---|---|---|---|---|
| Aksubaevskiy district | 0,73 | 0,65 | 0,49 | 0,50 | -1,96 | -0,23 | 1,25 | 1,44 |
| Baltasinskiy district | -0,04 | 0,01 | -0,13 | -0,44 | -6,06 | 1,04 | 0,22 | -5,41 |
| Mamadyshskiy district | 0,15 | 0,15 | -0,37 | -2,15 | 1,68 | -0,09 | 0,24 | -0,39 |
| Tulyachinskiy district | 1,31 | 1,06 | -17,5 | 25,92 | 4,11 | -2,13 | -0,89 | 11,83 |
| Chistopolsiy district | 0,23 | 0,24 | 0,17 | -0,80 | 2,51 | -1,6 | -0,14 | 0,62 |
| Almetyevskiy district | 15,1 | 34, | -14 | 1,21 | -3,25 | -15 | 29,01 | 46,51 |
| Yelabuzhskiy district | 2,97 | 6,98 | 5,83 | -7,75 | 1,78 | 20,70 | 18,53 | 49,05 |
| Mendeleyevskiy district | 2,42 | 5,39 | -1,22 | -0,40 | 8,45 | 30,16 | 6,00 | 50,79 |
| Cheremshanskiy district | 14,09 | 29,48 | -9,76 | -1,85 | 3,91 | -4,89 | 28,64 | 59,61 |

(Source - compiled by the authors)

From the analysis of the table, we see that in the federal districts there are regions, disproportions between which have been increasing since 2000. This can be associated with various factors. Conventionally, the leadership of some regions can be divided into several groups of prevailing factors. The first group

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consists of regions with great influence of natural resources and natural conditions (Sakhalin Region, Tyumen Region, the Krasnodar Territory, the Komi Republic, Krasnoyarsk Territory).

**Table** 3Analysis of fiscal space

| | | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|---|
| 1. | | Without fiscal space, $ mln. | | | | | | |
| 2. | Income tax | | | | | | | |
| 3. | Credited budget of the Republic of Tatarstan | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| 4. | Credited budget of the municipal entity | 3,74 | 3,93 | 4,12 | 4,33 | 4,55 | 4,77 | 5,01 |
| 5. | Total income tax (3+4) | 3,74 | 3,93 | 4,12 | 4,33 | 4,55 | 4,77 | 5,01 |
| 6. | Personal income tax | | | | | | | |
| 7. | Credited budget of the Republic of Tatarstan | 3,67 | 4,46 | 3,64 | 3,65 | 3,60 | 3,55 | 3,48 |
| 8. | Credited to the budget of the municipal entity | 20,17 | 20,15 | 22,13 | 23,35 | 24,48 | 25,66 | 26,90 |
| 9. | Total income tax (7+8) | 23,84 | 24,62 | 25,77 | 27,01 | 28,09 | 29,21 | 30,39 |
| 10. | Total income for the budget of the Republic of Tatarstan | 7,41 | 8,39 | 7,76 | 7,98 | 8,15 | 8,32 | 8,49 |
| 11. | Total income for the budget of the municipal entity | 20,17 | 20,15 | 22,13 | 23,35 | 24,48 | 25,66 | 26,90 |
| 12. | Total (10+11) | 27,58 | 28,54 | 29,89 | 31,34 | 32,63 | 33,99 | 35,40 |
| 13. | After fiscal space, $ mln. | | | | | | | |
| 14. | Credited budget of the Republic of Tatarstan | 3,74 | 3,93 | 3,53 | 3,71 | 3,90 | 4,09 | 4,30 |
| 15. | Credited budget of the municipal entity | 0,00 | 0,00 | 0,71 | 0,74 | 0,78 | 0,82 | 0,86 |
| 16. | Total income tax (15+16) | 3,74 | 3,93 | 4,24 | 4,45 | 4,68 | 4,91 | 5,16 |
| 17. | Personal income tax | | | | | | | |
| 18. | Credited budget of the Republic of Tatarstan | 3,67 | 4,46 | 4,32 | 4,36 | 4,35 | 4,33 | 4,30 |
| 19. | Credited to the budget of the municipal entity | 20,17 | 20,15 | 21,45 | 22,64 | 23,73 | 24,88 | 26,08 |
| 20. | Total income tax (19+20) | 23,84 | 24,62 | 25,77 | 27,01 | 28,09 | 29,21 | 30,39 |
| 21. | Total income for the budget of the Republic of Tatarstan | 7,41 | 8,39 | 8,56 | 8,07 | 8,25 | 8,42 | 8,60 |
| 22. | Total income for the budget of the municipal entity | 20,17 | 20,15 | 22,16 | 23,39 | 24,51 | 25,70 | 26,94 |
| 23. | Total  (22+23) | 27,58 | 28,54 | 30,72 | 31,46 | 32,76 | 34,12 | 35,54 |
| 24. | Effectiveness, % (24/12) | | | 101,19 | 101,22 | 101,26 | 110,22 | 101,16 |
| 25. | Budget of the Republic of Tatarstan (22/10) | | | 100,13 | 100,13 | 100,13 | 100,14 | 100,13 |
| 26. | Average for the budgets of the municipal entities (23/11) | | | 100,40 | 100,40 | 100,40 | 102,76 | 100,39 |

(Source - compiled by the authors)

The second group is the regions that received great financial support (the Republic of Daghestan and, to a lesser extent, the Republic of Tatarstan). The third group is the historical centers of economic and business activity in Russia (the city of Moscow and the city of St. Petersburg).

The main, in our opinion, task of the state is to eliminate the very reasons that hamper development

[17]. In our work, we would like to propose and justify the need for economic reform, which, as it seems to us, can help in overcoming regional imbalances and disparities between territories within the regions. For this purpose, we will consider the Republic of Tatarstan.

The Republic of Tatarstan is one of the subjects of the Russian Federation. It consists of 45 municipalities. Over the past 10 years, several major international sports championships have been and will be held on its territory, including the Summer Universiade, the World Aquatics Championship, the FIFA World Cup and others. During this time, a significant part of the infrastructure was created and modernized in the region. In addition, the Republic of Tatarstan has its own policy in the field of creating a favorable investment climate. To this end, significant federal budgetary funds are attracted, as well as regional funds are invested. Over the past 7 years, the Republic of Tatarstan remains on the first place in the national rating of investment-attractive regions of the Russian Federation. Two special economic zones, several technology parks operate on the territory of the entity, territories for outpacing social and economic development (to solve the problem of single-industry towns) are developing, as well as industrial parks are built on the territory of each municipal entity that is part of the region. But even in an economically successful region, such as the Republic of Tatarstan, there are disproportions between municipalities (the data are given in Table 2)

As noted above, the aim of the study is to propose an economic reform that would allow the implementation of the strategic goals set by the President of Russia, and achieve meaningful results without significant costs and changes in the structure of the political system. We have identified a significant problem, the meaning of which is the asymmetry of interests of municipal and regional authorities. To date only subnational and federal budgets benefit from industrial parks, and the costs and revenues of budgets of municipal territories do not depend on them. Due to the fact that municipalities do not receive direct significant benefits, they are less interested in developing industrial parks on their territories. This problem has been repeatedly mentioned in the reports of local authorities and the media. To solve it, we propose to introduce a fiscal space, but within the limits established by the laws of budgetary authority of the subject of the Russian Federation.

The fiscal space proposed by us consists in replacing part of the financial assistance that is now provided to all budgets of municipalities by the corresponding part of the regional taxes that come from industrial parks (Income Tax, Corporate Property Tax). This measure should allow creating economic incentives for motivating municipal authorities in the creation of a favorable investment climate, promoting the development of points of economic growth, etc. To implement our theory, we have chosen 5 municipal entities, which in the ranking of municipalities are in the group of the least developed, and that have industrial parks on their territory. In the calculations we used the data of official statistical reporting for 2016 and 2017. Projected values up to 2022 were obtained by indexing known data on the average annual increase in GRP by 105%. The results obtained were placed in Table 3. Supply chain management operations that take place to achieve better performance of the supply chain (performance over time, cost, quality, and flexibility) require internal integration in all of the company's tasks and external integration with suppliers or customers to succeed. Given the characteristics of new production environments and the nature of customers, other past production management methods that sought less integration in their processes were no longer effective and today companies need to create orderly integration in all production processes from raw material to final consumer. Establishing integration in the various components of the supply chain is an important factor in the level of focus on supply chain management operations.

## 4. Conclusion

Nowadays, various organizations need to cooperate with other elements of the supply chain to meet market demand and meet customer needs. Therefore, the performance of an organization is affected by the activities of other members of the supply chain. Today, competition between single companies has given way to competition between supply chains. In fact, in addition to focusing on resources and activities within their company, companies should also pay attention to integrating with suppliers and customers. In this study, the effect of integration between different elements of the supply chain on firm performance is investigated. The regional disproportions between the constituent entities of the Russian Federation and between the federal districts are analyzed. The reasons of their origin and development are considered. To solve the identified problems, economic reform through supply chain is proposed, its implementation is illustrated by the example of one of the most economically successful

regions of Russia - the Republic of Tatarstan.

## 5. Acknowledgements

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