

JOURNAL 
of Applied Economic Sciences



Volume XIII
Issue 8(62) Winter 2018

ISSN-L 1843 - 6110
ISSN 2393 - 5162

Editorial Board

Editor in Chief

PhD Professor Laura GAVRILĂ

Executive Manager:

PhD Associate Profesor Rajmund MIRDALA

Managing Editor

PhD Associate Professor Mădălina CONSTANTINESCU

Proof – readers

PhD Ana-Maria TRANDESCU – *English*

Redactors

PhD Cristiana BOGDĂNOIU

PhD Sorin DINCĂ

PhD Loredana VĂCĂRESCU-HOBEANU



European Research Center of Managerial Studies in Business Administration

<http://www.cesmaa.org>

Email: jaes_secretary@yahoo.com

Web: <http://cesmaa.org/Extras/JAES>

Journal of Applied Economic Sciences

ISSN-L 1843 - 6110

ISSN 2393 – 5162

Table of Contents



1	Alexander MAUNE Trade in Services and Economic Benefits in an Emerging Market Economy	2153
2	Viktor OLIINYK, Iryna WIEBE, Olga SYNIAVSKA, Valerii YATSENKO Optimization of Bass	2168
3	Ira NOVIANTY, Sri MULYANI, Srihadi WINARNINGSIH, Ida FARIDA The Effect of Dynamic Capability, User Ethics, and Top Management Support on the Quality Management Accounting Information Systems and Their Impact on the Quality of Decision Making. An Empirical Case of Local Governments in Indonesia	2184
4	Myslym OSMANI, Arben KAMBO, Mira ANDONI Dynamic Interactions between Major Macroeconomic Aggregates in Albania-a Value at Risk Approach	2196
5	Daniyar BAITENIZOV, Igor DUBINA, Tolkyn AZATBEK Trends of Self-Employment in Kazakhstan: Towards Developed Labor Markets?	2216
6	Zhandos A. OSPANBAYEV, Raushan E. ELEMESOV, Aida M. MYRZAKHMETOVA, David CELETTI Structural Analysis of the Industrial System Development in Kazakhstan	2227
7	Gulden ZHANATAUOVA, Lyazzat BAIMAGAMBETOVA, Aigul NURMAGANBETOVA, Anargul BELGIBAYEVA, Nuradin KUDAIBERGENOV Attraction of Foreign Direct Investment Inflows from the Transnational Corporations in the Condition of Transition Economy	2236
8	Erboz NABYEV, Serik DARIBEKOV, Sayan SHAKEYEV, Yerbolsyn AKBAYEV, Borankul NURPEISOV Telecommunications Industry: Current State and Development Prospects	2244
9	Zhadyra KONURBAYEVA, Oxana DENISSOVA, Madina RAKHIMBERDINOVA, Alfiya ZAKIMOVA Food Security as a Formation Factor of the Import Substitution Potential of the Economy	2251
10	Nina I. KLIMOVA, Dina Kh. KRASNOSELSKAYA, Dilya R. KHAMZINA An Empirical Study on the Relationships Between Sales Revenue of Oil Company (Rosneft) and Industry Specific and Exogenous Characteristics	2261

Structural Analysis of the Industrial System Development in Kazakhstan

Zhandos A. OSPANBAYEV

Department of International Relations and World Economy
Al-Farabi Kazakh National University, Almaty, Republic of Kazakhstan
zhandos.ospanbaev@gmail.com

Raushan E. ELEMESOV

Department of International Relations and World Economy
Al-Farabi Kazakh National University, Almaty, Republic of Kazakhstan
raushanbek.elemesov@gmail.com

Aida M. MYRZAKHMETOVA

Department of International Relations and World Economy
Al-Farabi Kazakh National University, Almaty, Republic of Kazakhstan
myrzakhmetova@mail.ru

David CELETTI

Department of Historical, Geographical and Antiquity Sciences
University of Padova, Italy
david.celetti@unipd.it

Suggested Citation:

Ospanbayev, Zh.A., Elemesov, R.E., Myrzakhmetova, A.M., Celetti, D. 2018. Structural analysis of the industrial system development in Kazakhstan. *Journal of Applied Economic Sciences*, Volume XIII, Winter, 8(62): 2227 – 2235.

Abstract:

This article describes the issues of structural changes in the manufacturing industry of Kazakhstan. The applied method is the technique of evaluation of structural changes in the manufacturing sector. Modernization of the modern economy of Kazakhstan is worsened by undeveloped pre-conditions for transition to the postindustrial stage of development, disproportions in the structure of the economy due to its mineral and raw materials orientation, weak competitive environment, high share of the state sector. Governmental programs of Kazakhstan industrialization are analyzed in the article in order to evaluate their results according to the structural analysis of manufacturing industry development. The analysis reveals that some sectors of industry depend on state support. The efficiency of structural changes in the industry carried out under the state programs is evaluated.

Keywords: structural change; economic growth; GDP structure; manufacturing industry; structural economic policy

JEL Classification: L15; L16; L23; L32

Introduction

After the demise of the Soviet Union and the collapse of the socialist economic system, post-socialist countries faced the most difficult problems of integration into the world economy and adaptation to the conditions of open international markets. New circumstances demanded reforms to create the foundation for open market economy, including structural ones, to adapt to the changing conditions of world markets. Difficulties of this process have already been noted in economic literature (Spence 2013). In terms of openness, there is a huge pressure on the structure of the economy from the world market situation, which can lead to unbalanced growth and instability of the national economy in changing conditions of the world market (Akhmetshin *et al.* 2017).

In the history of the world economy, there are many examples of state economic policy that failed. After the World War II, economists specialized in the problems of development made forecasts that were optimistic for Africa, but rather pessimistic for Asia. Unfortunately, at that time large volume of natural resources in Africa was considered the main factor for its sustainable growth. However, the results achieved over the next 50 years were diametrically opposed to this forecast. Africa's natural resources turned to be a curse for it, stimulating their seizure, but not achieving longer-term goals aimed to get the sustainable growth (Spence 2013). Another example was in the 1970s, when the exaggerated development of the Netherland's economy caused a "Dutch disease" (Kazhyken 2011).

The purpose of the state structural policy in such conditions is to give stability to the national economy and the main instrument is its diversification. Structural policy of the state is the complex of such methods and measures that form and implement a strategy of purposeful change of basic proportions of the economic system (Sukharev and Strizhakova 2014).

Following the independence of Kazakhstan, some structural reforms were implemented in the country's national economy. Basically, they were aimed to form the market economy and to adapt the subjects of the economy to new market conditions. Within these reforms, institutions of private property, entrepreneurship were established in the country, a privatization policy was carried out, regulatory and legal acts were taken to regulate and control the activities of various institutions of the market economy. New types of services, new products and even whole branches of the economy emerged. The formation of open economy and integration into the world economy was determined as priority guideline of the state economic policy. First of all, there was a necessity of foreign investments to solve these problems (Akhmetshin *et al.* 2017, Adamenko *et al.* 2017). In the USSR, Kazakhstan specialized in the production of mineral raw materials, that is why mining, oil and gas industries prevailed in the structure of the economy. However, these changes proved to be insufficient to ensure the independence of Kazakhstani economy from world prices for raw materials and development of new industries.

The results of any structural transformations in the economy should make changes directly to the structure of GDP, exports and imports, the balance of payments and also to the employment structure of the economy. Various programs aimed at diversifying the economy, primarily exports and reducing the import dependence of the Kazakh economy were actively implemented in Kazakhstan in different years, especially after the 2000s. They include such specific programs and strategies as Kazakhstan-2030, State Program on Forced Industrial-Innovative Development for 2010-2014 (GPFIR), Concept of Innovative Development of the Republic of Kazakhstan up to 2020, State Program for Industrial Development innovative development for 2015-2019 "(GPIIR), *etc.*

This article examines the structural changes in some sectors of the manufacturing industry in Kazakhstan based on the results of the implementation of GPFIR for 2010-2014 and the first two years of GPIIR for 2015-2019. In our opinion, such an analysis will make it possible to assess the results of implementing programs from the standpoint of structural changes in the economy.

1. Material and methods

The modern structure of the economy has developed historically as a consequence of "all-Union division of labor," where Kazakhstan had the role of a supplier of natural resources and agricultural products and a consumer of manufactured goods. After getting independence, Kazakhstan also turned out to be a supplier of raw materials in the world economy. As practice shows, this structure of the economy led to the situation where Kazakhstan's economic growth rates were directly dependent on the world commodity markets, primarily on the level of prices for fuel and energy resources. Rapid economic growth rates in the years of high prices for fuel and energy resources in the conditions of the prolonged global financial crisis were replaced by growth rate of 1% in 2016.

In these conditions, effective structural policy based on diversification of the economy becomes the main instrument for weakening the dependence of the economy on the world commodity markets and returning to a stable rate of economic growth in Kazakhstan. To do this, we need a detailed analysis of the structural reforms carried out during the years of industrialization of the economy with identification of their positive and negative sides. This study attempts to assess the structural shifts in some sectors of the manufacturing industry in Kazakhstan during the years of implementing industrialization programs and identify areas that could improve their efficiency in the future.

The theoretical, methodological aspects and practical issues of implementing structural changes in the economy have been studied in the works of foreign researchers, such as: Chenery (1979), Schumpeter (1934), Kuznets (1971), Rostow (1960), Peneder (2003), Pasinetti (1981), Fagerberg (2000), Kaldor (2007), Metcalfe *et al.* (2006), Nurkse (1952), Fabricant (1940), as well as Russian researchers: Krasilnikov (2001), Sukharev (2014), Butakova and Sokolova (2005), Titov (2006), Granberg (1987), Berkovich (1989), Kochkurova (2010).

The methodological pre-requisite for this study is the understanding that the structure of the economy is a complex multi-level phenomenon, and structural shifts are the result of both qualitative and quantitative changes in the economy that happens because of various factors. As a result, the specific research methods depend on the level of the analyzed problem.

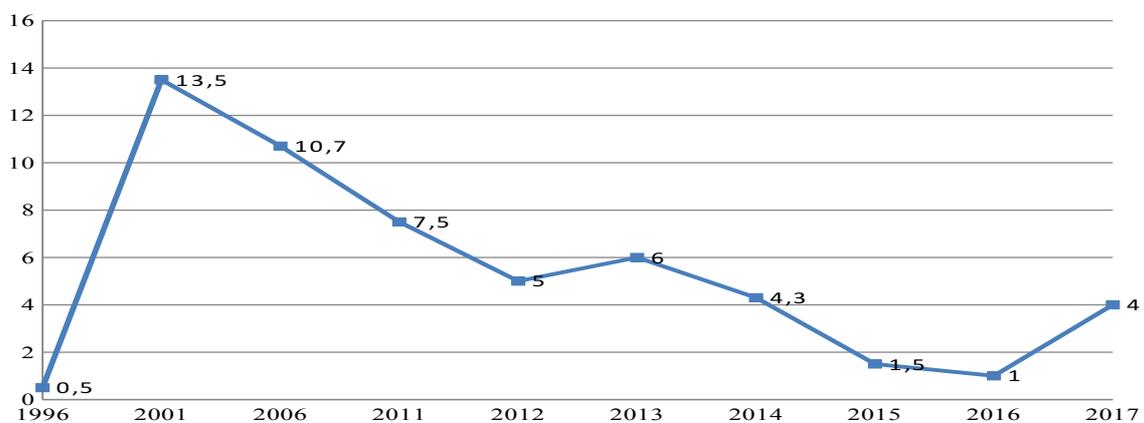
The methods used in this article are: dialectical cognition, mathematical analysis, comparative analysis, deduction and induction. However, the main method is a quantitative analysis of the manufacturing industry in Kazakhstan, reflecting structural changes in the national economy over the years of implementation of industrialization programs. The purpose of this analysis is to assess the efficiency of the government's structural policy aimed at diversifying the economy and ensuring its stability in the context of volatility in world resource prices.

2. Results and discussion

At present time, almost in all theoretical and applied models of state regulation of market economy, structural policy is present as an element of the state economic policy (Sukharev and Logvinov 2015).

The main goal of structural reforms in Kazakhstan is to make the economy diversified and competitive. As a result of ongoing reforms, positive structural changes were observed in the economy, new industries and types of services appeared. But today the national economy extremely depends on the export of oil and other natural resources. Successful and rapid implementation of structural reforms is vitally important for Kazakhstan. However, current situation shows that due to implementation of these reforms we have serious problems now (Rakhzhanov 2016). It is known that before the global financial and economic crisis of 2008, the economy of Kazakhstan developed mainly thanks to large demand and high prices for mineral resources that our country supplies to the world market. After 2008, Kazakhstan's GDP growth rates declined rapidly, as prices for mineral resources dropped because of the global economic crisis. Below is the diagram showing Kazakhstani GDP growth rates selectively in the recent years (Figure 1).

Figure 1. GDP growth rate of Kazakhstan (1996-2017), %



Source: Compiled by the authors. Ereport.Ru World Economy (2016)

However, the experts of the Asian Development Bank (ADB) made a forecast that GDP growth in Kazakhstan in 2018 and 2019 will be less significant than in 2017. In their opinion, one of the reasons is insufficient development of private entrepreneurship. The ADB report (Asian Development Bank, 2018) says "The industry is expected to grow by 5.0% in 2018, 4.5% in 2019, which will be provided by the exploration of oil and minerals. There will be some support from the state policy of industrialization and stimulation of production, that is necessary to make the subsector more competitive and achieve greater diversification". That means that in 2018 and 2019 the economic growth of Kazakhstan will continue to be provided mostly thanks to the commodity orientation of the national economy.

According to the report, the main driver of development is the increasing of private entrepreneurship. ADB experts believe that "... privatization is an important element of ongoing structural reforms, as it attracts new foreign direct investments outside the oil sector and supports the development of the capital market" (Asian Development Bank 2018). To do this, it is necessary to reduce the influence of the state on the economy, where the ongoing privatization will play a key role. The next necessary measure recommended by ADB specialists is the development of public-private partnership (Kolesnikov *et al.* 2018). In their opinion, "... the creation of constructive conditions will allow public-private partnerships to provide a wide range of investment projects that the government can not implement by itself, but success will depend on the development of capital markets and the rest of the financial system, in particular domestic capital markets, whose weakness remains the key obstacle for economic growth" (Asian Development Bank 2018).

In addition to ADB experts, Kate Mallinson (2017), a researcher at the Royal Institute of International Affairs Chatham House, thinks that "... given the difficult short-term prospects for the economy of Kazakhstan - due to whims in the oil and raw material markets, the continuing weakness of the banking sector and the pressure on the tinge the successful privatization program in 2018 is vital for economic growth". Structural changes should become a point of bifurcation in the economic development of the country in the conditions of global transformation of industry and the economy as a whole. In fact, structural changes are the most informative fact of the quality of

economic growth: the clearest examples of such changes are industrialization and the transition to service economy (Arutyunyan 2012).

As it was said before, in 2010 the Government of Kazakhstan adopted the "State Program on Forced Industrial and Innovative Development of the Republic of Kazakhstan for 2010-2014" (SPFIID) (Government of the Republic of Kazakhstan 2010). Now the country is implementing the "State Program of Industrial-Innovative Development for 2015-2019" (SPIID) (Prime Minister of the Republic of Kazakhstan, 2014). It is not completed yet, so it is too early to assess its full impact. It is the follow-up of a similar, already completed development program for 2010-2014.

The main purpose of GPFIR was to ensure stable and balanced growth of the economy diversification and increase of its competitiveness. To assess and make practical recommendations for the further implementation of the program of industrial and innovative development for 2015-2019, we carried out structural analysis of the manufacturing industry in Kazakhstan based on the results of the GPFIR for 2010-2014 and the first two years of the GPIIR for 2015-2019. First, we selected some sectors of the manufacturing industry. To assess the structural changes in output, we evaluated the share of the type of economic activity (FEA) in the total manufacturing industry, the index, the mass and the rate of structural change (Table 1).

Table 1. Estimated values of indicators of structural changes in products in 2010-2016, %

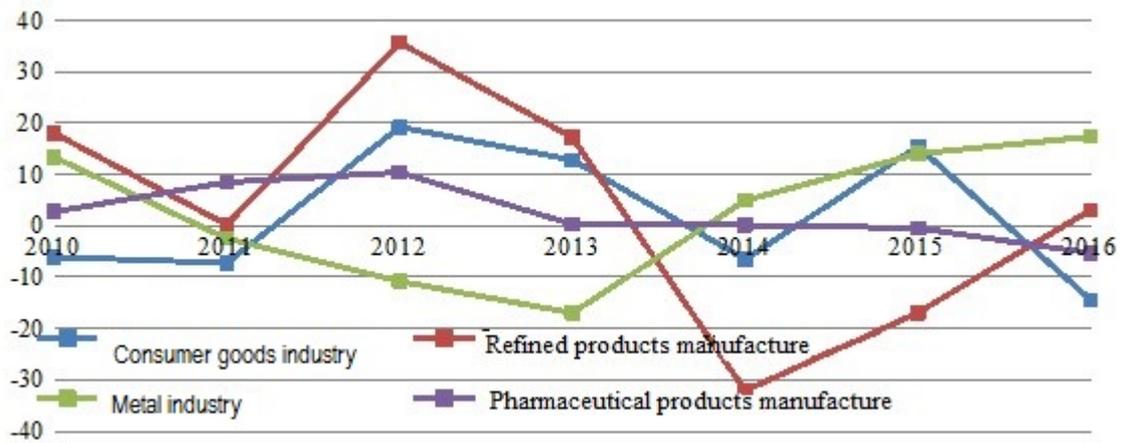
Indicator	2010	2011	2012	2013	2014	2015	2016
Consumer goods industry							
Index	-6,12	-7,25	19,19	12,80	-6,54	15,41	-14,43
Mass	-0,06	-0,06	0,16	0,13	-0,07	0,16	-0,17
Rate	-6	-3,62	6,40	3,20	-1,31	2,57	-2,06
Refined products manufacture							
Index	17,98	0,19	35,63	17,17	-32,12	-16,94	3,08
Mass	1,29	0,02	3,02	1,98	-4,33	-1,55	0,23
Rate	18	0,09	11,88	4,29	-6,42	-2,82	0,44
Metal industry							
Index	13,35	-2,50	-10,84	-16,99	4,90	13,99	17,34
Mass	4,89	-1,04	-4,38	-6,13	1,47	4,39	6,21
Rate	13	-1,25	-3,61	-4,25	0,98	2,33	2,48
Pharmaceutical products manufacture							
Index	2,72	8,47	10,37	0,30	0,12	-0,46	-5,36
Mass	0,01	0,04	0,06	0,00	0,00	0,00	-0,03
Rate	3	4,23	3,46	0,07	0,02	-0,08	-0,77

Source: Compiled by the authors. Ministry of National Economy of the Republic of Kazakhstan (2018b)

As we can see from the Table 1, in the economic activity "Consumer goods industry" there was growth in 2012 and 2015, but in 2016 the results of the evaluation were negative. The weight of the structural change in the economic activity "Metal industry" assumed a positive value for the last three years, which shows increasing of the share this FEA in this period. In the FEA of «Pharmaceutical products Manufacture», the share of products has steadily declined for 4 years. The rate of the structural change in the production of refined products reached its maximum in 2010 with rate value of 18%. The production of refined products grew at an average rate of 3.6% per year, consumer goods industry (-0.11). For the production of the last FEA products, the rate of change was below zero, which indicates practically no changes in this area.

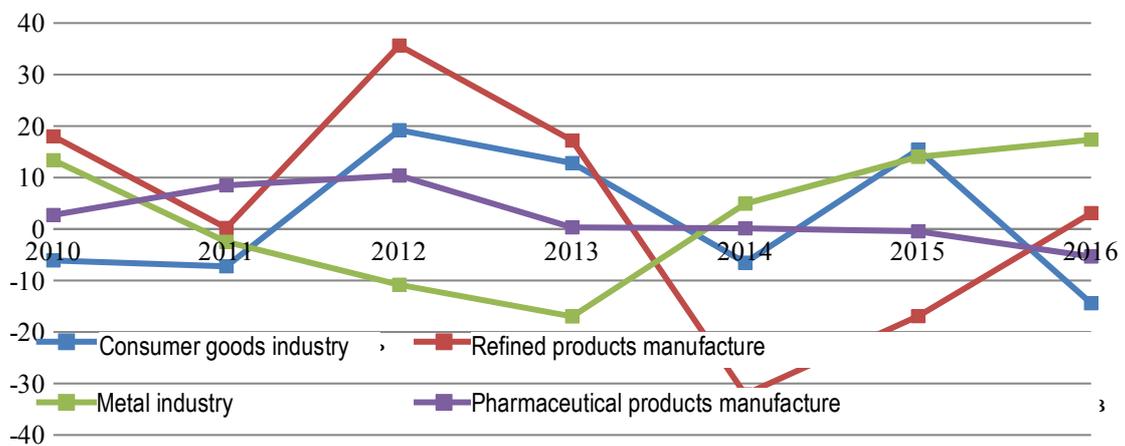
As we can see from the Figures 1-3 the studies types of economic have shown unstable dynamics, the biggest structural changes in products was in such FEA as "Refined products manufacture" and "Metal industry". It is obvious that stable dynamics of development of these industries is related to their attractiveness and high profitability (Patriota *et al.* 2016). Stable development of industries related to the oil and other raw materials production characterizes exaggerated development of the manufacturing industry itself.

Figure 2. The mass of the structural changes in output for 2010-2016, %



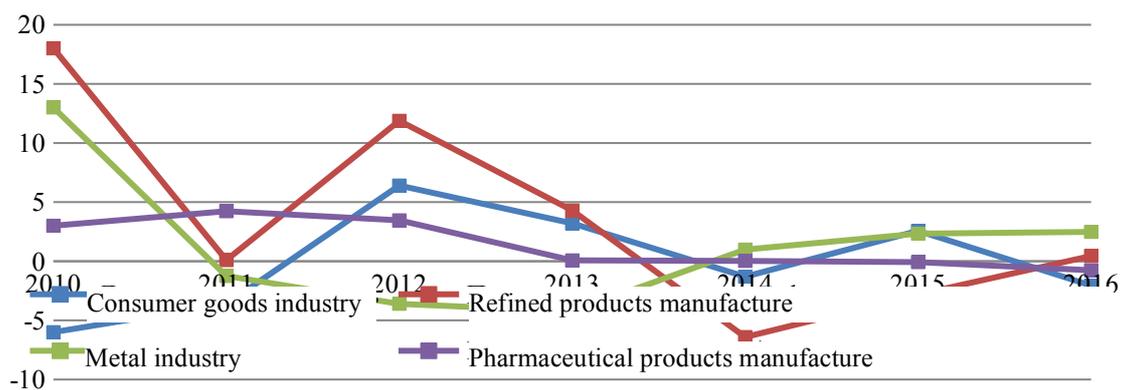
Source: Compiled by the authors.

Figure 3. Index of structural changes in output for 2010-2016, %



Source: Compiled by the authors.

Figure 4. Rate of structural changes in output for 2010-2016, %



Source: Compiled by the authors.

Another major factor for assessing structural changes is fixed investment. The data for analysis is shown in Table 2.

Table 2. Estimated values of structural change indicators for fixed investments in 2010-2016, %

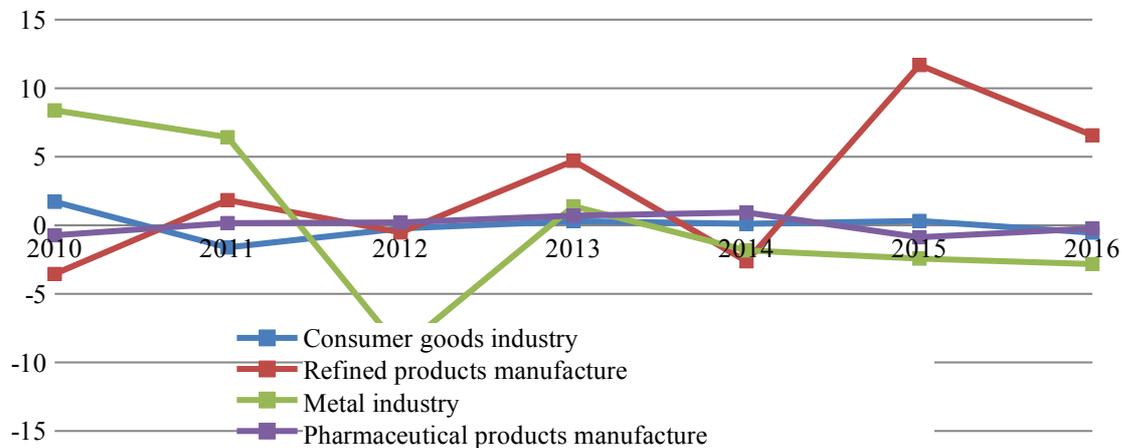
Indicator	2010	2011	2012	2013	2014	2015	2016
Consumer goods industry							
Index	254,92	-67,90	-30,68	57,21	13,13	33,96	-42,39
Mass	1,71	-1,62	-0,23	0,30	0,11	0,32	-0,54
Rate	254,92	-33,95	-10,23	14,30	2,63	5,66	-6,06
Refined products' manufacture							
Index	-40,07	34,62	-7,28	71,09	-23,24	134,45	32,20
Mass	-3,55	1,84	-0,52	4,70	-2,63	11,69	6,56
Rate	-40,07	17,31	-2,43	17,77	-4,65	22,41	4,60
Metal industry							
Index	23,51	14,59	-17,87	3,35	-4,26	-5,93	-7,33
Mass	8,39	6,43	-9,03	1,39	-1,83	-2,43	-2,83
Rate	23,51	7,30	-5,96	0,84	-0,85	-0,99	-1,05
Pharmaceutical products' manufacture							
Index	-76,37	71,50	55,21	117,69	71,12	-38,98	-16,68
Mass	-0,73	0,16	0,21	0,70	0,93	-0,87	-0,23
Rate	-76,37	35,75	18,40	29,42	14,22	-6,50	-2,38

Source: Compiled by the authors. Ministry of National Economy of the Republic of Kazakhstan (2018a)

As we see, the index of the structural change in the manufacturing industry shows decline in consumer goods industry, pharmaceutical products manufacture, metal industry and insignificant increase in refined products manufacture. Fixed investment for refined products manufacture were mostly positive, except for temporary fluctuations (no more than a year).

The mass of the structural change shows the crisis years for specific sectors of the manufacturing industry. For example, 2011 was the most crises for the consumer goods industry, 2010 was for refined products manufacture, 2015 was for pharmaceutical products manufacture, and 2012 for metal industry, where the corresponding figures take the maximum negative value (Figures 5-6).

Figure 5. The masse of the structural change in fixe investments in 2010-2016, %



Source: Compiled by the authors.

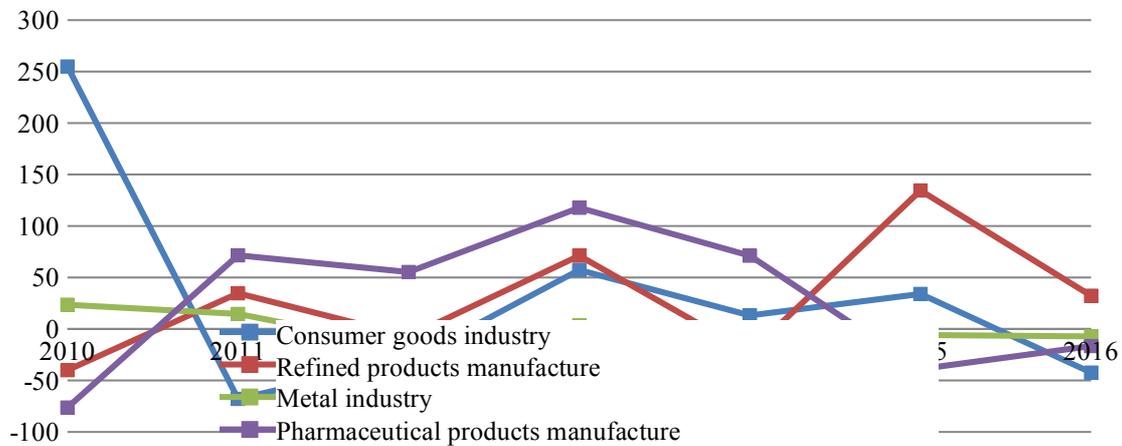
The rate of the structural change in fixed investment allows us to see the speed of growth of the volumes of investments in certain sector of manufacturing industry. For example, in refined products manufacture, the rate is 2.1% per year, in pharmaceutical products manufacture it is 1.79% (Figure 7)

Of course, the state program on accelerated industrial-innovative development (GPFIR) for 2010-2014 allowed creating certain background for the further development of the industrial sector: a system of development institutes was established, a number of necessary regulatory legal acts were adopted, and certain instruments were created. As a result of implementation of GPFIR, the trend shifted towards a higher level of manufacturing industry, but it remains relatively low (Satybalidin 2016).

This program provided a basis for structural changes in the real sector of Kazakhstani economy. Under the program, the most of the infrastructure, legislative and institutional structures have been created for further industrialization. The Kazakhstan Institute for Industry Development prepared analysis that revealed that 28 new

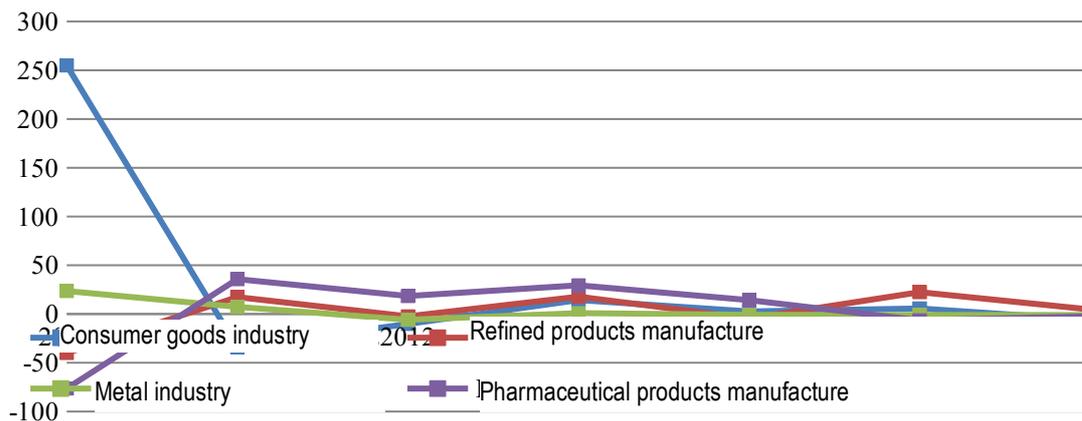
manufacturing sectors appeared over the years of implementing this program, including such as production of communicative, electric lighting equipment, fiber optic cables, products for the car industry, etc. (Kulseitov 2015). Now there is further industrialization of the economy ongoing in Kazakhstan under the state program for industrial and innovative development for 2015-2019.

Figure 6. The index of the structural change in fixed investments in 2010-2016, %



Source: Compiled by the authors.

Figure 7. Rate of structural change in fixed investments in 2010-2016, %



Source: Compiled by the authors.

Conclusions

Thus, the conducted study lets us make the following conclusions:

- The implementation of the industrialization program of 2010-2014 failed to ensure the stable development of such priority sectors of the manufacturing industry as pharmaceuticals and consumer goods industry.
- Analysis of Table 1 showed that the indicators during 2010-2014 were positive and demonstrated stable growth dynamics, but starting from 2015 they started to decline dramatically, and some of them were negative in 2016. In our opinion, this is explained by changing in the priorities of SPFIID for 2010-2014 and SPIID for 2015-2019. Despite the fact that SPIID for 2015-2019 is a follow-up of the previous program, it lacks some sectors that were previously identified as priority ones. Thus, the measures taken under the SPFIID for 2010-2014 in a number of manufacturing sectors could not create sufficient conditions for their further independent development. This means anticipation of shifting of priorities of state programs and lack of their continuity.
- Dramatic reduction in the state support for certain sectors leads to decreased share of manufacturing. This shows underdevelopment of self-reproduction market mechanisms and high dependence of manufacturing sectors on state support. Measures that should reduce the share of the state sector are being implemented slowly, so development of many sectors directly depends on state funding.

Thus, the results of structural analysis showed that measures aimed to change the economy structure should not be short-term. They should continue until stable independent development of the sector without strong state intervention. The most important, all measures on implementation of industrialization of Kazakhstan should have a multiplier effect, which shall ensure stable development of both traditional and new sectors of the industry, enhance high economic growth and competitiveness of the national economy in general.

References

- [1] Adamenko, A.A., Zolotukhina, E.B., Ulanov, V.A., Samoylova, E.S., Chizhankova, I.V., Mamatelashvili, O.V. 2017. Investment management activities of commercial enterprises. *International Journal of Applied Business and Economic Research*, 15(12): 11-21.
- [2] Akhmetshin, E.M., Artemova, E.I., Vermennikova, L.V., Shichiyakh, R.A., Prodanova, N.A., Kuchukova, N.M. 2017. Management of investment attractiveness of enterprises: Principles, methods, organization. *International Journal of Applied Business and Economic Research*, 15(23): 71-82.
- [3] Akhmetshin, E.M., Kolpak, E.P., Sulimova, E.A., Kireev, V.S., Samarina, E.A., Solodilova, N.Z. 2017. Clustering as a criterion for the success of modern industrial enterprises. *International Journal of Applied Business and Economic Research*, 15(23): 221-231.
- [4] Arutyunyan, A.A. 2012. The Emergence of Structural Changes and Their Impact on Basic Economic Indicators. *STAGE: Economic Theory, Analysis, Practice*, 3: 55-61.
- [5] Berkovich, L.A. 1989. *Interrelation of the Processes of Intensification of Production and Structural Changes in the Economy*. Novosibirsk: Nauchnaya publikatsiya.
- [6] Butakova, M.M, and O.N. Sokolova, O.N. 2005. Innovative Component of Structural Transformation in Industry. *Proceedings of the Altai State University*, 2: 15-17.
- [7] Chenery, H. 1979. *Structural Change and Development Policy*. N.Y., Oxford: Oxford University Press.
- [8] Fabricant, S. 1940. *The Output of Manufacturing Industries, 1899-1937*. New York: National Bureau of Economic Research.
- [9] Fagerberg, J. 2000. Technological Progress, Structural Change and Productivity Growth: A Comparative Study. *Structural Change and Economic Dynamics*, 11(4): 393-411.
- [10] Granberg, A.G. 1987. *Problems of Territorial Economic Planning*. Novosibirsk: Nauchnaya publikatsiya.
- [11] Kaldor, N. 2007. *Causes of Growth and Stagnation in the World Economy*. Cambridge: Cambridge University Press.
- [12] Kazhyken, M. 2011. Structure of the Economy of Kazakhstan: The Main Characteristics of Disproportions and Their Causes. *Kazakh Economic Bulletin*, 1-2: 82-95.
- [13] Kochkurova, E.V. (2010). On structural changes in the economy and their causes. *Terra Economicus*, 8(3): 55-62.
- [14] Kolesnikov, Yu.A., Pavlyuk, A.V., Radachinsky, Yu.N., Rodionova, N.D. 2018. Problems of Implementation of Public-Private Partnership in Russia. *European Research Studies Journal*, 21: 187-197.
- [15] Krasilnikov, O.Yu. 2001. *Structural Shifts in the Economy*. Saratov: Saratov State University. Nauchnaya publikatsiya
- [16] Kulseitov, A. 2015. *Myths and Facts of the First Industrial Five-Year Plan*. Available at: <http://expertonline.kz/a13611/>
- [17] Kuznets, S. 1971. *Modern Economic Growth: Findings and Reflections*. Available at: http://nobelprize.org/nobel_prizes/economics/laureates/1971/kuznets-lecture.html
- [18] Mallinson, K. 2017. *Kazakhstan – 2018*. Available at: <http://voicesoncentralasia.org/central-asia-2018-scenarios-and-prognosis/>
- [19] Metcalfe, J.S., Foster, J. and Ramlogan, R. 2006. Adaptive Economic Growth. *Cambridge Journal of Economics*, 30(1): 7-32.

- [20] Nurkse, R. 1952. Growth in Underdeveloped Countries: Some International Aspects of the Problem of Economic Development. *American Economic Review*, 42(3): 571-582.
- [21] Pasinetti, L. 1981. *Structural Change and Economic Growth*. Cambridge: Cambridge University Press.
- [22] Patriota, S.N., Cerutti, M.N., Mulholland, D.S., Marques, M.A., and Scheidt, G.N. 2016. Potential waste of agro-industrial in developing adsorbents of heavy metals. *Periodico Tche Quimica*, 13(25): 42-51.
- [23] Peneder, M. (2003). Industrial Structure and Aggregate Growth. *Structural Change and Economic Dynamics*, 14(4): 427-448.
- [24] Rakhzhanov, G. 2016. *How are Structural Economic Reforms Moving Forward?* Available at: https://forbes.kz/process/economy/strukturnyie_ekonomicheskije_reformy_i_v_rk_vmesto_progressa_-_zastoy
- [25] Rostow, W. 1960. *The Stages of Economic Growth. A Non-Communist Manifesto*. Cambridge: Cambridge University Press.
- [26] Satybaldin, A.A. 2016. *The Economy of Kazakhstan: Global Challenges and the New Reality*. Almaty: Institute of Economics of the Komsomol of the Republic of Kazakhstan.
- [27] Schumpeter, J. 1934. *The Theory of Economic Development*. Harvard: Harvard Economic Studies Publ.
- [28] Spence, M. 2013. *Next Convergence: The Future of Economic Growth in the World Living at Different Speeds*. Moscow: Izdatel'stvo Instituta Gaydara.
- [29] Sukharev, O.S. 2014. Structural Policy in the Russian Economy: Conditions of Formation. *National Interests: Priorities and Security*, 3(240): 2-8.
- [30] Sukharev, O.S., Strizhakova, E.N. 2014. Structural Analysis of Industrial System Development. *National Interests: Priorities and Security*, 41(278): 26-40.
- [31] Sukharev, O.S., Logvinov, S.A. 2015. *Management of Structural Changes in Economics*. Moscow: INFRA-M, Kurs.
- [32] Titov, V.A. 2006. Methodological Approaches to the Analysis of the Structural Transformation of the Economy. *Transport Business in Russia*, 12-IV: 45-47.
- *** Asian Development Bank 2018. Asian Development Outlook 2018. How Technology Affects Jobs. Available at: <https://www.adb.org/sites/default/files/publication/411666/ado2018.pdf>
- *** Ereport.Ru World Economy. 2016. Growth Rates of GDP of Kazakhstan. Available at: <http://www.ereport.ru/stat.php?razdel=country&count=kazakhstan&table=ggecia&time=1>
- *** Government of the Republic of Kazakhstan. 2010. The State Program on Forced Industrial and Innovative Development of the Republic of Kazakhstan for 2010-2014. Available at: http://www.government.kz/ru/progr_amm/2282-gosudarstvennaya-programma-po-forsirovannomu-industrialno-innovatsionnomu-razvitiyu.html
- *** Ministry of National Economy of the Republic of Kazakhstan. 2018. Investments in Fixed Capital. Available at: http://stat.gov.kz/faces/wcnav_externalId/homeNumbersInvestment?_afLoop=6763898848682854#%40%3F_afLoop%3D6763898848682854%26_adf.ctrl-state%3D177cdk91yh_42
- *** Ministry of National Economy of the Republic of Kazakhstan. 2018. Volume of Industrial Production of the RK by Types of Economic Activity. Available at: http://stat.gov.kz/faces/wcnav_externalId/homeNumbersIndustry?_afLoop=6764043598912909#%40%3F_afLoop%3D6764043598912909%26_adf.ctrl-state%3D177cdk91yh_102
- *** Prime Minister of the Republic of Kazakhstan. 2014. State Program of Industrial and Innovative Development of the Republic of Kazakhstan for 2015-2019. Available at: <https://primeminister.kz/ru/page/view/gpiir>

JOURNAL 
of Applied Economic Sciences

ISSN 2393 – 5162

ISSN - L 1843-6110