

Specific Features of Japanese Economy

S N Sokolov¹, E A Kuznetsova², E A Rzhepka³

¹Nizhnevartovsk State University, Nizhnevartovsk, Russia

²Nizhnevartovsk State University, Nizhnevartovsk, Russia

³Eastland Group of Companies, Irkutsk, Russia

E-mail: snsokolov1@yandex.ru, elzanv07@yandex.ru, rjepka@yandex.ru

Abstract. The article covers the specifics of social and economic relations of Japan that is one of the leading world economies. The deficit of material and financial resources made Japan develop competitive export-oriented economy by using its main advantage, namely the highly qualified resources. The article proposes a trend equation that describes the national GDP. The economic development of Japan in the late XXth century demonstrates the success of the anti-crisis measures. Japan has been successful in its fight against deflation, but the demographic decrease interferes, which is a serious long-term problem for the economy. Asian countries and the USA are Japan's main trade partners. The article covers the fluctuations of geographic export and import zones in Japan in 2007-2017. Overcoming the economic crisis is relevant in terms of the study of anti-crisis strategy in Russia.

1. Introduction

Global changes in the world resulting from political and economic reasons and fast scientific and technical progress require new approaches to the assessment of social and economic development of nations.

It is well-known that Japan is one of the leading global powers and one of the largest economies in the world. The Japanese GDP based on purchasing power parity in 2018 was the fourth biggest in the world, with China coming the first after getting ahead of Japan since 2001, and India coming the third after leaving Japan behind in 2012. Due to unstable Japanese currency exchange rate against US dollar, by GDP per capita Japan comes 22-28th, if the official rate is used, and the 41st, if purchasing power parity is taken into account. Japan exerts considerable influence on the development of economy and policies worldwide, in particular in Asia.

2. Relevance

The social structure in Japan shows the two faces of modern industry. Small and medium businesses account for the major share of processing industry. Their share does not show any downward trends. With all those companies in the backdrop, considerable pools of cash were forming in heavy industry. This led to the creation of giant associations. The Japanese social and economic model is assumed to be unique, as it combines psychological as well as economic and political methods. It is essential to describe the factors that formed the foundation of this model: highly-qualified employees and lower life quality of the population (including in terms of salaries). Japanese management sees the employee as part of the whole corporation, it is unusual to change jobs. This model is feasible due to state self-consciousness, nation-first attitude, willingness to make financial sacrifices to ensure the prosperity of

the country. The deficit of material and financial resources made Japan develop competitive export-oriented economy by using its main advantage, namely the highly qualified resources.

The economic crisis in the early 1990s had specific prerequisites, including the explosive economic growth of Japan in the middle 1980s that resulted in the accumulation of financial assets. In 1985 the Plaza agreement was signed with Japan thus agreeing to increase the Japanese yen rate against dollar. As a result, the export cost began to grow, and the trade balance was upset [13]. The population and businesses started to invest the accumulated funds in real estate, with its prices increasing tenfold by late 1990s. The government decreased the interest rate on loans, and commercial banks that owned a large amount of available funds began to buy foreign currency [1]. This is why the yen currency rate fell dramatically, and the Bank of Japan decided to increase the interest rates. Banks could no longer grant loans at low interests, and clients failed to pay their debts: they had to sell real estate and securities. Construction businesses and companies that granted loans for housing construction went bankrupt en masse. The whole national financial system began to crumble [15]. Thus, in the 1980-1990s the country faced considerable economic shifts that resulted in an economic shock that affected all social groups.

Weak economic growth continued after 2000, but the economy went into recession in 2008, when a new stage of the financial and economic crisis began, which, unlike in the 1990s, resulted from external factors, economic development cycles, overheated credit market and stock exchange, high prices of raw materials. The company investments reduced, as well as machine and equipment orders. Simultaneously, the number of bankruptcies and unemployment grew. Right before the crisis, Japanese companies enacted an active policy of penetrating Asian markets.

After 30 years of unprecedented growth, the Japanese economy has gone into a serious recession after the 1990s, however, the country is still a major economic power. In 2011 the economy shrunk as a result of powerful earthquake, which made the Japanese review their development strategies and focus even more on safe resource production [18].

3. Description of the objectives

In terms of overcoming the crisis, the comprehensive approach proved to be the most efficient; it includes the solution to the problem of solvency and liquidity within the bank system. The Japanese government adopted a number of economic reforms that were supposed to help the country overcome the crisis. The development of the Japanese crisis is relevant both in terms of sectoral economic shift analysis and the study of the anti-crisis strategy for Russia. This is why in this article we will try to analyse the Japanese competitive export-oriented economy and its trade and economic pillars.

4. Theory

The economic development of Japan in the late XXth century demonstrates the success of the anti-crisis measures. Japan's experience in overcoming a number of economic crises shows that the system of economy state regulation can include various combinations of administrative and market methods on a different scale, while underestimated R&D can lead to economic deceleration with negative consequences [4]. This is why the reorganization of market relations plays the key role in the economic, social and regional development of the country.

Shinzō Abe was elected Prime Minister in 2012 and started the implementation of economic reforms with a view to boost the Japanese economy and strengthen the international status of the country. In 2013 a programme aimed at boosting the economy "Three arrows", or Abenomics was created that included financial and economic reforms. First, this is an aggressive monetary policy, second, a flexible budgetary policy, third, this is a growth strategy that stimulated private investments. In 2015 Shinzo Abe reviewed his "three arrows" in order to increase GDP, stop the population reduction by boosting birth rate and support workers with children and elderly relatives [17]. A new industrial policy aimed at attracting investments to R&D is an important part of the programme. In order to boost the state revenues, in 2012 a law on a step-by-step consumption tax increase up to 10%. This led to a fast reduction of GDP, this is why the next increase is planned for October 2019.

By trying to boost and reform the economy, the government should have developed a strategy to curb the enormous public debt that is more than 235% GDP being the 1st largest worldwide. With a programme of aggressive monetary easing, Japan has been making progress in its fight against deflation, but the demographic decrease stands in the way (low birth rate and aging and reducing population), which is a serious long-term problem for the economy. In 2016 the Japanese economy began to show clear signs of economic growth [11].

5. Experimental research

In 1970-2017 GDP of Japan grew by more than 25 times, and GDP per capita increased by more than 20 times [5]. In 2017 the GDP of Japan amounted to 5443 billion dollars with 42,9 thousand dollars per capita (Table 1).

Table 1. Trade and economic performance of Japan, billion dollars [14, 16, 17, 18, 19, 20, 21].

year	Export	Import	Turnover	Balance	GDP.	GDP (USD/capita)	Export quota, %
2001	403.6	349.1	752.7	54.5	4160	32 674	9.7
2003	472.0	383.1	855.1	88.9	4303	33 697	11.0
2005	595.0	516.0	1111.0	79.0	4572	35 783	13.0
2007	590.3	524.1	1114.4	66.2	4297	33 562	13.7
2009	545.3	501.6	1046.9	43.7	4111	32 112	13.3
2011	787.0	807.6	1594.6	-20,6	4389	34 343	17.9
2013	714.9	832.6	1547.5	-117,7	4729	37 149	15.1
2015	622.0	627.3	1249.3	-5,3	5299	41 700	11.7
2017	688.9	644.7	1066.1	38.6	5443	42 900	12.4

In 2001-2017 the fluctuations of the GDP and GDP per capita of Japan are described by the following equations:

$$y = 1,019t^3 - 18,861t^2 + 119,457t + 4057,956$$

$$x = 0,008t^3 - 0,140t^2 + 0,846t + 31,978$$

where *y* is GDP (billion dollars), *x* is GDP per capita (thousand dollars), *t* is a year (*t*=1 in 2001). Determination coefficients equal 0.851 and 0.856 respectively.

Today international trade plays an important role in the business development of countries, regions and the international community as a whole. This is why, from one hand, foreign trade has become a major factor , from the other hand, the dependence of countries on international goods exchange has increased.

The main hallmark of trade relations of Japan is the fact that the state buys all raw materials and exports industrial goods. By 2011-2015 Japan had already had trade deficit. The trade export had reduced, which was the part of a long-term trend and the result of the development of Japanese corporations who adopted the transnational model [2]. In terms of the export quota it can be classified as a semi-open economy with foreign trade accounting for 12-18% of GDP.

A number of industries largely work for export [16]. Japan comes the 5th in the world in terms of export and import. Three fourths of the Japanese export is characterised by high quality and technical innovations and form the foundation of state revenues. Under the conditions of the crisis, geographical priorities in foreign trade have also been reviewed. The main export products in Japan are vehicles, iron and steel, semi-conductors, integral circuits and car parts. On the basis of this data, we can come to a conclusion that one of the features of Japanese export is a large share of products with high added value manufactured using the latest science-intensive technologies. Japan imports oil, liquefied natural gas, clothes, semi-conductors and coal.

Japan is poor in many natural resources and has been dependent on raw material import for a long time. Fossil fuel and raw materials account for the majority of goods import. During the period of industrial growth an export-oriented economy has formed, the share of foreign production, the return on direct investments grew. The export of machine building productions grew rapidly, including cars sector [12]. Japanese corporations internalized.

In 2017 the main partners of Japan in terms of export were the USA (19.4% of the export), China (19%), the South Korea (7.6), Hong Kong (5.1%) and Thailand (4.2%). China (24.5%), the USA (11%), Australia (5.8%), the South Korea (4.2%) and the Saudi Arabia (4.1%) are the main import partners of Japan.

Russia is also a foreign trade partner of Japan with 2% of the Japanese export and import. The share of Japan in Russian export and import is about 3% [7]. The trade between Russia and Japan continues to develop within the quite archaic complementary model [9]. The foundation of the Russian export to Japan is formed by fossil fuel and metals, and the import consists of transport, machines and electronics.

In October 2015 Japan and 11 trade partners signed the Trans Pacific Partnership agreement (TPP), which seemed to open the Japanese economy for intensified foreign competition and create new opportunities for the Japanese business. Japan was the second country that ratified the TPP in December 2016. After Donald Trump became President of the USA, the TPP agreement remained just a dream [17]. In November 2017 the other 11 countries agreed upon the main elements of the reviewed agreement that they renamed into Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).

Japanese goods export shifts to the Asia Pacific, the US and Canada. From the other hand, in 2017 Japan and the EU signed the EU-Japan Economic Partnership Agreement, and as a result one of the largest free trade zones in the world can be created. The parties believe that it will come into force in 2019 [10]. Taking into account the US quitted the negotiations on TPP, the agreement with the EU has become the largest one for Japan. What is more, the idea of establishing free trade zones has also been discussed in China and the South Korea.

In order to understand the foreign trade geography better, we would introduce the term "foreign trade sphere of influence". A sphere of influence is a region that de facto is under complete political, economic and cultural influence of another state. In our case, a foreign trade sphere of influence is a region under strong economic influence of another state [6, 22].

The foreign trade sphere of influence consists of geographic export and import zones [8]. Thus, the geographic export zone of Japan is a number of countries with Japan as their main import partner (so, for Japan, these are countries that buy Japanese goods), and the geographic Japanese import zone is represented by countries with Japan as their main export partner (so, for Japan, these are countries that sell goods to Japan). Sometimes these two zones overlap and create one geographic export and import zone.

6. Discussion

In 1999 Japan was the largest export and import partner of two countries (Vanuatu and Indonesia), the main export partner of 13 countries (Australia, Brunei, Mauritius, New Caledonia, the UAE, Oman, the Saudi Arabia, the Solomon islands and Tonga), the main import partner of 4 countries (China, Malaysia, Thailand and Taiwan).

In 2007 Japan was no longer a largest partner both in terms of export and import. It is still the main export partner of 12 countries, the 9 of them are the old partners (Australia, Brunei, Indonesia, Iran, Qatar, Kuwait, the New Caledonia, the UAE, the Saudi Arabia), and 3 new partners (Guam, Sudan and the South Africa). The list of import partners has not changed.

In 2017 Japan is still the main export partner of 6 countries with 3 old partners (Brunei, Qatar and the Saudi Arabia), and 4 new partners (Palau, the Philippines and French Polynesia). The list of main partners does not have any positions on it.

In 1999 countries in the foreign trade sphere of influence accounted for 16.6% of Japanese import and 21.4% of export, and in 2004 the import grew to 19.3% and the export increased up to 41.2%. In 2007 the import continued to grow up to 32.7%, while the export decreased to 14%. In 2017 the countries in the foreign trade sphere of influence accounted for only 4.7% of the Japanese import and 0% of its export. This shows that Japan decided to completely change its foreign trade policy. As E. Leontieva [3] stressed in 2014 for the first time in the post-war Japan economy, the goods export no longer played its usual role of the driver helping to overcome the recession.

This is why the Japanese economy today is investment-oriented, as the revenues from investment activities of Japanese companies abroad are considerably larger than export profits.

7. Conclusions

The analysis of the economic crisis in Japan allows to use good practices associated with economic growth in creating post-crisis development programmes in the Russian Federation: decentralization of the authorities and budget, reassigning tax sources to the local authorities, innovation decentralization, addressing demographic problems, increasing the labour productivity, boosting regional growth with the help of cross-governmental cooperation, investments in regional competitive industries for promoting the territorial development of regions, creation of logistics hubs close to internal transport communications, infrastructure concentration supporting international contacts.

References

- [1] Inflation and its consequences The current economic crisis in Japan <http://www.wm-finance.com.ua/books/view/6/section:12>
- [2] Leontiev E L 2015 Japanese economy in 2014: successes and problems of “Abenomics” *Actual problems of modern Japan* (M.: Institute of the Far East, RAS) 272 p
- [3] Leontiev E L 2016 The economic policy of the government of Abe Shinzo in the context of globalization Yearbook (M.: AIRO – XXI) pp 79-104
- [4] Makarenko P 2017 Ekonomichna kriza yak peredumova rezhionalnogo zhreshnykh v ekonomitsi Japan News of the Kiev National University of Ukraine Taras Shevchenko *Geography* **1(66)** /2(67) pp 128-133
- [5] Sokolov S N 2017 Geographic structure of export of the countries of the world Culture, science, education: problems and prospects: Mater. VI International scientific-practical conf. Part I (Nizhnevartovsk: Publishing House Nizhnevart. state University) pp 449-455
- [6] Sokolov S N 2019 Foreign Trade Geographical Zones In Asia And The Pacific *Advances in Economics, Business and Management Research Atlantis Press* vol 47 pp 1014-1017 <https://www.atlantis-press.com/proceedings/isfec-18>
- [7] Sokolov S N, Rasulzhanov A 2018 Features of the modern economy of Japan Innovative processes in science and technology of the XXI century: Materials of the XV Intern. scientific-practical conf (Tyumen: Tyumen Industrial University) pp 207-214
- [8] Sokolov S N 2018 Export geographical zones of the world and their export potential Geography and geocology at the service of science and innovative education: Mater. XIII All-Russia scientific-practical conf. (Krasnoyarsk: Krasnoyarsk. state ped Univ.) pp 187-190
- [9] Timonina I L 2016 Russia - Japan: The Real Potential of Economic Interaction *Japanese Studies* **1** pp 20-31
- [10] Japan and the EU announced the creation of the largest free trade zone <https://www.rbc.ru/economics/06/07/2017/595e39969a7947a660cd6b9a>
- [11] Akiyoshi Takumori The Japanese Economy in 2017: Cause for Optimism <https://www.nippon.com/en/currents/d00279/>
- [12] Doing Business 2014 Understanding Regulations for Small and Medium-Size Enterprises Washington D C: A World Bank Group 316 p
- [13] Ito Takatoshi The Plaza Agreement and Japan: Reflection on the 30th year Anniversary Currency Policy Then and Now: 30th Anniversary of the Plaza Accord: Conference at Rice

- University's Baker Institute
<https://www.bakerinstitute.org/media/files/files/0eb0ad16/WorkingPaper-Plaza-Ito-092815.pdf>
- [14] Japan External Trade Organization. <http://www.jetro.go.jp>
- [15] Mikuni Akio 2003 Japan's Policy Trap Taggart Murphy (Washington, DC: Brookings Institution Press) 224 p
- [16] Statistics Bureau of Japan <http://www.stat.go.jp/english>
- [17] The World Factbook. <https://www.cia.gov/library/publications/the-world-factbook/geos/ja.html>
- [18] Trade Policy Review: Japan https://www.wto.org/english/tratop_e/tpr_e/tp451_e.htm
- [19] UNCTAD Statistics <http://unctad.org/en/Pages/Statistics.aspx>
- [20] World Economic Outlook Database <https://www.imf.org/external/pubs/ft/weo/data/changes.htm>
- [21] WTO Statistics Database 2016 <http://stat.wto.org/Home/>
- [22] Pesterev A P, Yakovlev V A, Kirillina A A, Solovev D B 2019 Environmental Problems Mining Industry in the Arctic *IOP Conference Series: Earth and Environmental Science* **272** paper № 022055. [Online]. Available: <https://doi.org/10.1088/1755-1315/272/2/022055>