

Mihail Nikolaevich Dudin,
Nikolaj Vasil'evich Lyasnikov,
*Dzhurabaeva Gulnora
Kahramanovna,
**Aleksandr Valer'evich
Kuznecov

Chinese Textile Industry: Sustainable Development Challenges and Competitiveness issues in Economic Environment Dynamics

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Russian Academy of Entrepreneurship,
Radio St., 14, Moscow, 105005, Russian Federation

*Novosibirsk State Technical University
20, K. Marx Prospekt, Novosibirsk Oblast,
Novosibirsk, 630092, Russian Federation

**Moskovskij institut jekonomiki, politiki i prava,
Klimentovskij pereulok, d.1, Moskva, 115184,
Russian Federation

Abstract

Contemporary geo-economic development is characterised by global transformation from the EU and Western countries, in general, towards the Asia-Pacific and East Asian concept, which will result in further evolution of the World System determined by the economies of the new industrial and post-industrial countries. The objective of this article is to investigate the role of economies of East Asian countries in global economic development. Particularly this paper analyses the situation in the textile industry, as exemplified by China, in the world market to identify prospects for its sustainable and competitive development. During the progress of this work, it was determined that the textile industry in China is currently under the influence of delayed adverse effects of the global financial and economic crisis of 2008-2010, which can further lead to systemic risk emergence in the Chinese economy, as the textile industry plays a leading role in its economic development. Analytical procedures performed in this study clearly showed the urgency of implementing technological and managerial innovations in order to increase the competitiveness of the Chinese textile industry. The government also needs to revise its measures of support to the sector. Improving competitiveness and providing sustainable growth and development of the textile industry in China allows to create a new margin of safety for the Chinese economy and secure unconditional long term leadership for the textile industry.

Key words: *China, geo-economics, textile industry, sustainable development, industrial competitiveness.*

Introduction

The Asia-Pacific region can be considered as a new centre of world economic development. This is generally justified by the following geo-economic factors and conditions [1]:

- firstly, the Asia-Pacific region is the largest on the globe and has the longest coastline;
- secondly, the majority of the most densely populated countries in the world (7 out of 10) are located in this region, with seven countries, including Russia, with an annual gross domestic product exceeding \$1 trillion US Dollars;
- thirdly, nine countries in the region (including Russia, China, Taiwan, Hong Kong) have the greatest gold and foreign exchange reserves, despite the fact that the socio-economic development models in these countries are not identical at all.

At the present stage of world economic development, where countries can freely participate in world trade and there is open access to the world market, some quantitative changes are taking place in the globalisation of markets and competition. The growing interdependence of countries on goods production and services has led to an understanding of the

necessity for a global approach to business. An indicative feature of this process is the formation of global industries, in which the competitive positions of companies, particularly in geographic or sectoral markets, are influenced by their position in the world market as a whole, including the textile industry, the transformational changes of which are determined by the potential global capacity of respective product consumption.

China plays a special role in the development of the Asia-Pacific region; besides the geo-economic and political importance of China in the new globalised business space is no longer disputable. It is worth noting that the Chinese economy is growing at an accelerated pace (compared to the economies of the most developed countries already attributed to the post-industrial), and more than 60% of the total workforce of the country are concentrated in the industrial sector [2, 3]. The consumer goods industry (including the textile sector) is considered to be the driver determining the vector of accelerated development of China's national economy. The manufacture of textiles not only plays an important role in the formation of China's GDP, but it is also one of the main items of Chinese exports, which provides for a steady flow of foreign currency earnings in the

economy [4]. Obviously the competitive development of the Chinese textile sphere of the real sector of the economy will largely determine the conditions and factors of stability of the national socio-economic system as a whole. It should also be borne in mind that the sustainable development of national socio-economic systems, including the separate branches of the national economy, is largely dependent on the phases of the macroeconomic cycle, as well as on the ability of economic agents to produce and implement innovative solutions to improve their competitiveness [5,6]. Innovative solutions are important not only for creating a competitive advantage, but also for the formation of the basis necessary to preserve stability during change in the economic cycle phase and the wave of innovation associated with it.

Results

Over the last decade, the Chinese textile industry sector has been showing a steady economic growth. For example, in the late 1990s, the share of the textile industry in the total scope of national industrial production was approximately 11%, but in 2008-2010 it exceeded 22% (see *Figure 1*).

The total number of enterprises of the textile industry as of 2012 - 2013 is more than 30,000 [3]. At that, the textile industry in China has clear geographical and territorial orientation: in the north, the main textile raw materials are wool and cotton; in the south – these are silk, jute, and kenaf. It is worth noting that, in general, the textile industry of East Asian states has a good environment for development: cheap labour, historical experience of industry development, and a favorable geographical position for product marketing. These advantages have been fully exploited by the textile enterprises of China. For example, during the pre-crisis period (referring to the global financial and economic crisis of 2008 - 2010), the volume of textile exports from China amounted to about \$50 billion USD per year, i.e. about 13.5% of world textile product exports (see *Figure 2*).

In addition, it is important to bear in mind that China produces about 31% of the global ratio of chemical fibres that are in demand by the modern textile industry (*Figure 3*).

In this case, the material and technical base for the production of chemical fibres in China was created from scratch, and currently, several manufacturers operate on the basis of unique technology, which is a direct result of the active involvement of China in global innovation processes and technology transfer.

It should also be noted that during the pre-crisis period the volume of investments in the Chinese textile industry used to double each year. On one hand, it was a natural consequence of the open policy in the Chinese economy and allowed to significantly increase production capacity, upgrade the material and technical base of the industry, but on

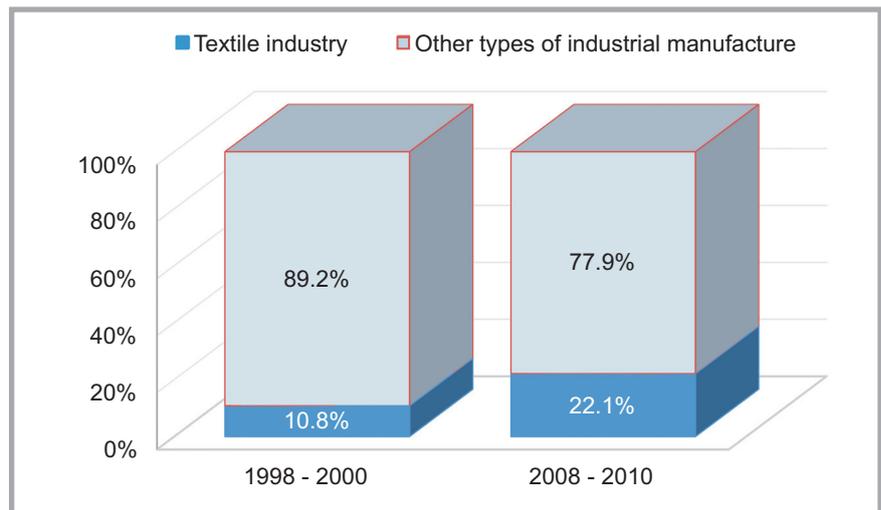


Figure 1. Dynamics of the change in the share of the textile industry in the total national industrial production of China [7, 8].

the other, by the beginning of the global financial and economic crisis of 2008-2010, many Chinese textile enterprises, primarily the export-oriented ones, were poorly competitive. The global financial and economic crisis played a negative role in the development of China's textile industry – according to certain sources, every third enterprise in this area of the real sector was dissolved during the crisis [9, 10].

This situation was the logical outcome of price-related competition, which is based in some cases on marginal price dumping. As a result, the growing prices for raw materials and labour resources determined by the influence of the global recessionary trends has led to stagnation and subsequent depression in the textile industry. Currently (as of 2013 - 2014), the Chinese textile industry shows a strong ability to recover [10]. At the same time, there is an objective need to keep the competitiveness of the industry by

boosting the current economic cycle and innovative wave.

The modern development of society and economy is accompanied by, first of all, a change in the socio-economic structure and a transition from an industrial economy and traditional society to a post-industrial economy and information society. And, secondly, the current stage of development of socio-economic relations is characterised by an upward phase of the large economic order (according to the sixth technological order [11, 12]) and the active diffusion of innovations. Therefore the modern period in socio-economic evolution can be regarded as the most favorable period for competitive and sustainable development of all areas and sectors of national economies, including the textile industry of China.

Discussion

The Chinese textile industry has a long traditional history of formation and evo-

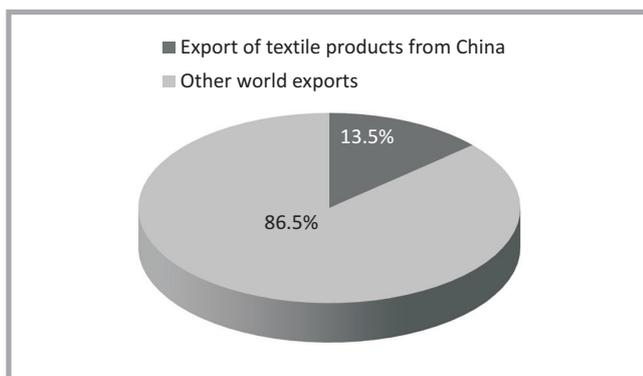


Figure 2. Export ratio of China's textile products in the global share before the crisis of 2008-2010 [3].

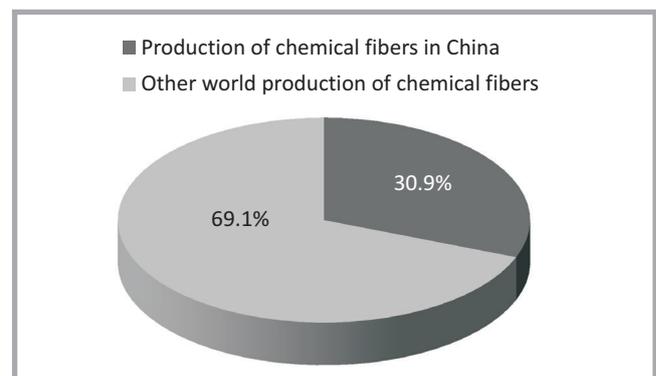


Figure 3. Share of China's chemical fibre production in the global ratio (as of 2013) [8].

lution. Previously they used cotton and silk as a raw material in the manufacture of textile; and with the advent of modern raw materials in the manufacture of textile products, they started to use synthetic and other materials. When China was shifting from an economy based primarily on agriculture to a manufacture-oriented one, textile industry development became the first priority and the basis for the development of other industries in the country, accelerating the growth of its entire economy.

Currently the Chinese textile industry is going through hard times as there has been an increase in cotton prices on the world market, which is primarily due to active USA and EU pressure on China and the re-evaluation of the yuan against the dollar, weakening the Chinese Yuan (CNY) against the US dollar (USD).

In spite of the difficulties faced by the textile industry in China, this manufacturing sector remains one of the most developed in the world, and as a result China's products are exported to many countries on all continents of the world. Textile enterprises in China are mainly specialised in the manufacture of apparel made of synthetic fabrics. The plants are located throughout China, but the largest are in Canton, Harbin, and Shanghai (East China). China is a country that implements the most aggressive policy for the export of their products of the textile industry to the global market [13].

A peculiar feature is its closed nature – from the cultivation and production of raw materials to the production and sales of finished products [14]. But due to a lack of natural resources in China for the production of vegetable textile raw materials, chemical fibres have become the main raw material in the manufacture of textile products. The developed petrochemical industry of China fully covers the demand for chemical fibres [15], and as a result stimulates the rapid growth of the textile industry and promotes price competition, including through the use of price dumping. Since China lacks its own oil and world oil prices are not stable as a result of geopolitical tensions, the textile industry is very sensitive to these fluctuations.

In the context of the world economy globalization and outstripping growth rate of China's economy, both positive and negative effects are formed for the Chinese

textile industry. In particular, the positive effects include the rapid recovery of manufacturing from the global financial and economic crisis, which marked a turning point in the large economic cycle and the beginning of the new sixth technological mode. Also the positive effect of the rapid development of the textile industry is reflected in the growth of workers welfare, which naturally effects the product price. And this, in its turn, leads to negative consequences, in particular, the inability of Chinese textile enterprises to use price competition on the world market and the necessity to compete with the newly industrialised countries, where economic development is also based on the faster growth of the textile industry. Such new industrial countries include those of Southeast Asia (Indonesia, Vietnam, and Philippines) and South Asia (Bangladesh, Nepal, and Pakistan), where the wages are smaller, and therefore their textile products are cheaper on the world market. Also it is necessary to consider that technological mobility allows competitors to invest and introduce advanced equipment in a relatively short period of time, thus the Chinese textile industrial complex fails to compete due to needed investments in material and a technical upgrade. Another negative effect is the investment attractiveness reduction of the industry as a result of the extending period of investment return and reduction of investment profitability in the upgrade and modernisation of the material and technical base.

A peculiar feature of the global textile industry, including the one in China, is that within the change of phases of the large economic cycles, the industry has already passed the stage of active growth and entered the stage of maturity, which will inevitably be followed by recession. This, in turn, will lead to either the need for the diversification of production or its radical renewal. Therefore a number of Chinese textile producers have adopted a strategy of globalisation, with its mobility of resources and technology, and have begun to use comparative advantages – locating production facilities in countries with lower production costs (in the newly industrialised countries).

However, this would not be enough to ensure sustainable and competitive development of China's textile industry in the new socio-economic environment. For example, experts' forecasts indicate that by 2016-2020, the Chinese textile in-

dustry will be growing 9.5 - 10% a year (to compare – the outlook for Europe and North America for the same period is 3 - 4% per year) [10].

After 2020-2025, experts forecast a decline in business and economic activity in the Chinese textile industry. Thus if we correlate comparable values, the dynamics of the large economic cycles (according to N. Kondratiev [16, 17]) and those of the life cycle of the textile industry of China, we can see that starting in 2020 - 2025, the Chinese textile industry in its development would be in conflict with world economic development (*Figure 4*).

The disagreement between the dynamics of the large economic cycle and Chinese dynamics will cause a high probability of risk events within the industry. According to that mentioned above, as well as taking into consideration the effects of the Chinese yuan rising against the US dollar and the increase in wages of Chinese textile industry workers, it is necessary to find new ways (factors) of intensification of Chinese textile industry development. Moreover these factors or ways of industrial activity intensification in the industry considered should be based on technological, organizational, and managerial resource-saving innovations to make the products more likely to compete in terms of price and improve their quality and popularity. These activities should be carried out both on the national level, industry-wide, and on the level of individual enterprises [18].

It is possible to determine a number of factors and conditions whose successful development together with an innovation activity increase will form the basis of stability and competitiveness for the Chinese textile industry (see *Table 1*).

Thus an increase in the competitiveness and sustainability of the textile industry in China can be achieved by a combination of factors and conditions that must be established at all hierarchical levels: from government regulation of the industry to the management of individual enterprises within it [21, 22]. The implementation of measures and successful development of factors contributing to improving the competitiveness and sustainability of the socio-economic development of the textile industry of China will provide for a consistent change in the trend of the life cycle of the industry and large economic cycle [23], according

to the sixth technological mode. This, in turn, allows for the leveling off of risks of textile industry activity, thus contributing to the successful overcoming of the remaining recessionary trends.

Summary

Thus, based on the above, we can conclude that the main problems causing an adverse effect on the sustainability development and competitiveness of the Chinese textile industry, being a typical impact of economic dynamics with the acceleration of new technological processes, are:

- inconsistent growth in domestic demand for local products, determined by the competition of relatively cheap imported goods of light industry;
- excessive focus on the export sector, and the lack of effective control of the import-export of textile raw materials and products;
- the decline of the Chinese national natural resource base necessary for the production of textile products;
- technological and organizational bond-breaking processes between industrial enterprises and agricultural producers of raw materials;
- the technical and technological backwardness of the enterprises, the lack of own financial resources, and lack of access to bank loans, which are necessary to upgrade manufacturing.

Nowadays a Chinese industrial textile complex has new opportunities for sustainable development due to innovation diffusion, aimed at competitiveness improvement of the industry according to national interests. These opportunities include:

- improvement of the textile industry's provisioning system with necessary raw materials, including through diversification of the resource base;
- stimulation of business, economic, and research activity in the field of potential national capacities in the production of chemical yarns and fibres;
- assistance in the creation of sectoral and cross-sectoral research and production structures and clusters based on a complete technological cycle, as well as technical and technological renewal of production;
- assistance in the normalisation of export-import relations in the industry, assistance in the creation of equal conditions for competition between

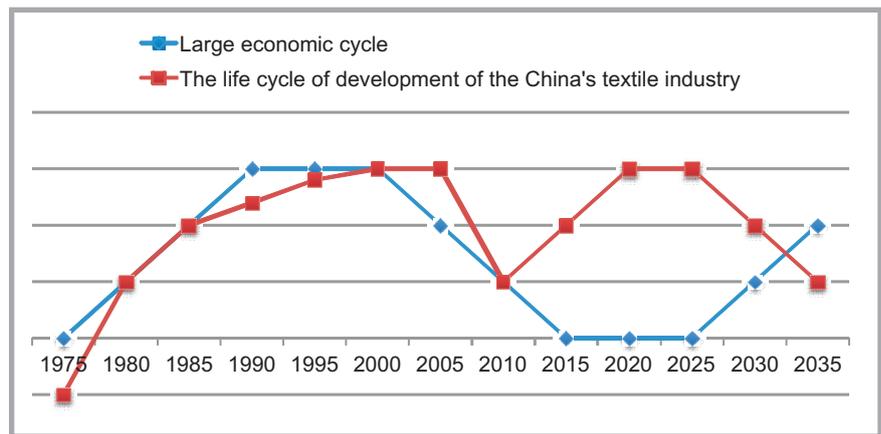


Figure 4. Correlation of the dynamics of the large economic cycle (according to N. Kondratiev) and the life cycle of the textile industry of China (until 2035).

Table 1. Factors and conditions providing reliability and competitiveness improvement of China's textile industry [19, 20].

Group of factors and conditions	Factors and condition specifications
Socio-political factors and conditions	lobbying the textile industry at legislative and executive levels of government
	legislation that fully meets the requirements of the labour protection service in the textile industry, functioning and safeguarding the rights of employees
	maintaining the stability of the geopolitical and economic situation combined with stimulation of life-style improvement
Macro-economic factors and conditions	open barriers from entering the industry; expanding the domestic market as well as those located-outside
	give preferential treatment to industry investments and enhancement of technology transfer by means of scientific development assistance
	formation of new requirements for environmentally safe operation and industry development
	stimulation of the activity of small and medium-sized businesses in the context of foreign economic activity deployment
	availability of a state program for the development and support of the textile industry
Micro-economic factors and conditions	increase in the innovation activity of textile enterprises and development of new forms of inter-firm cooperation
	stimulation of value-related competitiveness, instead of price-related competitiveness of textile products in the world markets and inside the country
	increase in business activity and active promotion of new products on the markets
	formation of sufficient financial provisioning of companies in the industry through the development of a mechanism of interaction with financial institutions, primarily banks and pension funds

- national Chinese and imported textile products;
- creation of favorable conditions for attracting investments in industry innovations, including through intensive development of public-private partnerships [24].

Taking into consideration current macro-economic risks and trends transforming global socio-economic relations, we can define the following strategic objectives, the achieving of which will assure the sustainable development and competitiveness of the Chinese textile industry, under circumstances of intense external economic and technological changes:

- firstly, the active implementation of technological and managerial modernisation of certain manufacturing

- together with new textile enterprise deployment located in close proximity to raw material areas, which will reduce production costs and maintain the possibility for price competition;
- secondly, ensuring there is price competition as well as the value-related competitiveness of Chinese textile products on the world markets by technological improvement of production and state regulations strengthening the industry in order to maintain its sustainability;
- thirdly, involving foreign textile companies in the small and medium-sized business segment, which will allow to diversify the specificity of development of the industry and maintain its quick adaptability to superficial economic changes;

- fourthly, the development of reserves for sustainable growth and development of the textile industry through the use of integrated management tools at the national level and that of individual enterprises within the industry;
- fifthly, popularisation of national textile products on the domestic market and lobbying Chinese textile manufacturers to maintain their ability to compete against imported goods.

The theses and recommendations mentioned above are aimed at assisting in the sustainable development of the national textile industry of China as a whole and can be also used to improve other sectors of the consumer goods industry. At the same time, active support for sustainable and competitive development of the textile industry in China allows to create a new margin of safety for the Chinese economy and secure unconditional leadership for the textile industry in the long term.

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INVITATION

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The aim of the conference is to present the results of recent research, development and applications of chitin and chitosan.

It is also our intention to give the conference participants working in different fields an opportunity to meet and exchange their experiences in a relaxing environment.

Best regards
Malgorzata M. Jaworska
Ph.D., D.Sc., Eng.

For more information please contact:

CONFERENCE SECRETARY
M. Sklodowskiej-Curie 19/27,
90-570 Łódź, Poland
tel. (+48) 42 638 03 339,
fax (+ 48) 42 637 62 14,
e-mail: ptchit@ibwch.lodz.pl
www.ptchit.lodz.pl