

Russian Low-Tech Manufacturing: Economic Profile

Industria rusa de Baja Tecnología: Perfil económico

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ABSTRACT:

Subject of this article is the role of low-tech manufacturing (LTM) in the economy of emerging economy countries. The authors contribute on the development of scientific views on that with their research of LTM profile in Russia. The role of LTM as a factor of economic and social stability in Russia is being exposed. Therefore, competitiveness of LTM sector in Russia as a key driver of economic development is distinguished within the global LTM mainstream. The purpose of the publication is to oppose high-tech scenarios of economic development in the emerging economy countries in the medium term and the forming trend of refusal from state support for LTM.

Keywords: Low-tech manufacturing; Industrial innovations; R&D; Industrial development; Socio-economic development of regions

RESUMEN:

El tema de este artículo es el papel de la manufactura de baja tecnología (LTM) en la economía de países emergentes. Los autores contribuyen en el desarrollo de puntos de vista científicos sobre ello con su investigación del perfil de LTM en Rusia. El papel de LTM como un factor de estabilidad económica y social en Rusia se está exponiendo. Por lo tanto, la competitividad del sector de la LTM en Rusia como un impulsor clave del desarrollo económico se distingue dentro de la corriente principal mundial de LTM. El propósito de la publicación es oponerse a los escenarios de alta tecnología del desarrollo económico en los países de economía emergente en el mediano plazo y la tendencia a la formación de rechazo del apoyo estatal para LTM.

Palabras clave: fabricación de baja tecnología; Innovaciones industriales; I + D; Desarrollo industrial; Desarrollo socioeconómico de las regiones

1. Introduction

The trend of slackening the share of industrial output in Russia's GDP from 28.2% (2010) to 26.7% (2015) is commonly understood as a "recession". "... The Russian Federation fell into recession in 2015, with its GDP shrinking by 3.7 percent, but nonetheless remains rather stable in terms of its competitiveness" (WEF Report 2017). Among the key factors of competitiveness of the emerging economy countries (hypothesis for the study) are the size, sustainability and marketing potential of low-tech manufacturing (LTM). The authors oppose

the currently adopted "innovative" scenario of Russia's economic development, oppose the choice of high-tech manufacturing (HTM) as a driver in the medium term. The authors argue that LTM "fell out" from the view of macroeconomic balance of manufacturing. In this context, it is necessary to update the scientific discussion on the role of LTM in the economy of emerging economy countries.

LTM returns to the mainstream of economic research: "Increasing literature on low-tech manufacturing provides new insights into the changing character of low-tech industries" (Hansen, Winther 2008). In fact, the processes observed in the global LTM are focused on innovative drivers of development (Hirsch-Kreinsen 2008, 2015, Potters 2009, Von Tunzelmann 2009), "Industry 4.0" perspective, they make a significant contribution to the socio-economic stability of regions, make a significant influence on development of competition, institutions of private investment, small and medium (Boly 2000; Cuerva 2014) enterprises (SME).

The main focus in LTM studies is made on innovative factors & R&D investment. Gkypali & Tsekouras (2014) found an econometric relationship between the volume of exports and the level of R&D costs of LTM. Garetti & Taisch (2011) have shaped the impact of the sector on sustainable manufacturing. Rentschler (1986) outlined the role of LTM in the social and economic development of the regions: "... to create manufacturing jobs in hard-hit Illinois by nurturing, revitalizing and attracting small to mid-sized machines of low-tech products". Contribution to the comprehension of global trends is made by the studies of national projections of LTM: China (Ji, Niu 2010); Spain (Belso-Martinez 2010); Italy (Finotto 2016); New Zealand (Corbett 2008); the British textile industry (Ormerod 2009); Lithuania (Pridotkiene 2013); Germany (Som, Kirner 2015), and others.

Despite the theoretical understanding of the role of LTM (Weiss 2015, Timmer 2014, Szirmai A. 2012, Massa I. 2015) in the macroeconomic balance of manufacturing in emerging economy countries, the fascination with "innovative" scenarios has shifted the attention of Russian economists to HTM. The authors discover a critically low level of publications on LTM problems – less than 0.3% of articles (2008-2016) devoted to the economy of manufacturing. The main focus of publications (31% of the total number) is the innovative policy of LTM (Ver-shinina 2010, Trushin 2014, Shibaev 2012, Yudanov 2012, Pakhomova 2013). Second in place (3%) is discussion of the role of LTM in the socio-economic development of single-industry towns and "depression regions" (Uskov 2012, Zemlyanskaya 2014). And as a separate block (29%) we can identify studies of the economy of individual branches of LTM (food – Rokotianskaya 2015; wood – Kiseleva 2017; Lauri 2013). Recognizing the practical value of studying of particular industries, they do not disclose the role of the LTM part in the structure of processing and manufacturing sector of economy, the independence of its economic phenomenon. The issues of economic perspectives, the role in the macroeconomic balance of industry, export potential, spatial development remain outside the attention of Russian scientists. Therefore, we propose to initiate a discussion with a starting point of specifying the active economic profile of LTM.

Accordingly, the goal is to study the economic profile of Russian LTM, the factors of its competitiveness, and to compare it with international development trends. That allows to look scientifically at the institutional and economic characteristics of LTM, its role in the sustainability of the economy of emerging economy countries in the medium term.

2. Methodology

Object of the study – LTM – includes industries (ISIC REV. 3, OECD, 2011) as follows: recycling; wood, pulp, paper, paper products, printing and publishing; food products, beverages and tobacco; Textiles, textile products, leather and footwear. Classification is based on the share of R&D divided by value added in amount <3%. The Russian classifier of economic activity (OKVED), which has a regulatory status, goes together well with OECD identification of industries, see Tab. 1. Earlier, the authors researched the prospects of industrializing recycling in Russia (Alekseev 2016). The objects of study of this publication are four traditional manufacturing industries, according to OECD, five according to OKVED classification.

Table 1
Structure of the LTM industries distinguished in the Russian statistical accounting and their abbreviation in the context of the work

Industries	Abbreviations in Table s 2-10
Food products, beverages and tobacco	Food
Textiles, textile products	Textiles
Leather and footwear	Leather
Wood manufacturing	Wood
Pulp, paper, paper products, printing and publishing	Pulp

The research method is an interpretation of the primary information from the Russian statistical authorities (Rosstat, Federal Anti-Monopoly Service, Federal Customs Service), supplemented by analytical reports (in particular, Industrial Production in Russia, 2016). Vertical and horizontal analysis allowed to reveal the dynamics and structural characteristics of the economic profile of LTM. There were 19 enterprises of the LTM segment under study (case method). To determine the factors of competitiveness of LTM, an expert evaluation was carried out (Delphi method 2016), supplemented by in-depth interviews with the managers of enterprises.

3. Results

Against the backdrop of the recession, reflected by the fall in rates of industrial growth (20.83% – 2011, 11.55% – 2015, Table 2), LTM keeps the forward momentum – 19.99% in 2015. The dynamism of Russian LTM, competitiveness in the world markets, allows us to see it as one of the key factors of economic and social stability. In this context, the economic profile of Russian LTM has been investigated and compared with the global mainstream. Accordingly, the results disclose: 1) the economic profile of Russian LTM; 2) factors of competitiveness; 3) comparison with the main global development trends of the sector.

3.1. Economic profile of the Russian LTM (2016)

The Russian economy "de facto" remains focused on raw materials exports and LTM. These two sectors are the drivers of the competitiveness of the economy. And if the role of mining, especially the oil and gas sector, is recognized as a sustainability factor, LTM remains out of focus of the discussion.

The size. LTM accounts for 23.1% of turnover in manufacturing, the core of which is the food industry – 17.7%. Actually, however, many scientists (Mills, 2008) see the food industry as one of the points of growth of the Russian economy. According to IndexMundi 2017, Russia became a world leading exporter of grain – 30 million MT. According to the number of LTM enterprises, this is 40% and 27% of the personnel engaged in manufacturing.

Table 2
Manufacturing & LTM turnover

Turnover, bln. Rub.	2011	2012	2013	2014	2015	V-distribution, 2015
Manufacturing	22813	25111	26840	29661	33087	100.0%
<i>Annual growth rate, %</i>	<i>20.83</i>	<i>10.07</i>	<i>6.89</i>	<i>10.51</i>	<i>11.55</i>	

LTM	4847.3	5360.5	5710.9	6374.2	7648.4	23.1%
<i>Annual growth rate, %</i>	<i>9.90</i>	<i>10.59</i>	<i>6.54</i>	<i>11.61</i>	<i>19.99</i>	
Food	3602	4001	4272	4840	5861	17.7%
Textiles	212	212	243	264	283	0.9%
Leather	50.3	49.5	52.9	50.2	56.4	0.2%
Wood	303	355	377	396	449	1.4%
Pulp	680	743	766	824	999	3.0%

The weight of the sector in manufacturing, high rates of growth are determined by the potential of domestic and international markets and exports. In the WEF rating (2017), Russia occupies the sixth place in the world in terms of the domestic market size index. The high rates of LTM export growth (Table 7) determine the potential for expansion into foreign markets.

The production economics of LTM is characterized by high profitability of the products – 12.12% (2015) and strong growth (34.7%), clearly visible (Table 3) against the background of a monotonous fall in mining and average one in manufacturing. Demand in the domestic and foreign markets ensures a high capacity utilization of 60-80%, while in medium-tech manufacturing (MTM) it is 15-30%.

Table 3
Profitability of production, %

Industries	2011	2012	2013	2014	2015
Mining	31.4	28	22.1	19.2	24.9
Manufacturing, average	13.2	10.7	8.8	9.9	11.9
LTM, average	7.58	7.1	7.94	9	12.12
<i>Annual growth rate, %</i>	<i>2.2</i>	<i>-6.3</i>	<i>11.8</i>	<i>13.4</i>	<i>34.7</i>
Food	7.8	9.4	8.6	9.1	9.9
Textiles	6.3	6.2	7.7	8.9	12.8
Leather	8.6	9.1	6.9	4.6	8.1
Wood	3.7	0.7	8	12.2	12.2
Pulp	11.5	10.1	8.5	10.2	17.6

At the same time, the price growth index for LTM products is comparable to the level of inflation, which allows to keep profitability at an economically efficient level. In the cost structure, primary raw materials and low-skilled labor dominate – resources that have zero or negative trend for the last 3 years.

Entrepreneurship, the most important factor of economy is consolidated in LTM: 91%

(average) of enterprise assets belongs to the private sector. 38.3% of the total SME is concentrated in the sector, which characterizes the development of market relations. It is in LTM that entrepreneurs are most optimistic about economic prospects. This reflects the high concentration of capital in the LTM product markets, Table 4. In slowly growing markets (in particular veneer, fur) consolidation reaches 80-90%. And on high-dynamic markets (food), being in the stage of "growth" (Schuh 2011), the concentration is naturally in the range of 5-20%.

Table 4
Concentration rate of production in Russian LTM – CR3 (%)

Products	2009	2010	2011	2012	2013	2014	2015
Food, beverages	4.52	7.89	7.64	7.2	7.17	6.64	5.88
Textile	9.19	22.21	25.6	28.39	32.56	36.05	46.56
Fur	22.07	57.71	60.26	66	67.85	81.9	84.08
Footwear	10.07	25.22	22.45	26.6	31.65	26.8	28.68
Wood	5.45	13.84	25.04	34.32	23.38	9.98	11.28
Veneer and plywood sheets			87.93	82.27	71.93	84.33	90.02
Pulp, paper products	15.32	35.5	35.83	34.23	32.41	20.1	20
Printing and publishing	3.27	8.32	7.97	9.47	9.74	25.84	23.86

LTM is the most pronounced "zone" of market relations in Russia and emerging economy countries. Producers do not depend on complicated public procurement markets, prices are regulated by an objective balance of supply and demand, there is no government regulation. The main commercial relations of subjects are B2C and B2B. High profitability and capital turnover allow us to effectively use borrowed capital and maintain financial stability – the current ratio level is 116-160%.

Investments. High profitability and stability of LTM makes it attractive for investors. In spite of the low manufacturability of production, the sector accounts for 17.7% of investments in fixed assets from total manufacturing. Significant is an average annual increase in investment of 9.1% (2010-2015). High proportion of foreign investment in the sector is indicative: 30% (of manufacturing), consolidated (12%) in the growing segment of food products, beverages and tobacco.

Work. Russian LTM is organized on low-skilled jobs. This is due both to the specifics of organizing the production process, and to the surplus of labor resources. At the same time, a relatively high level of remuneration is observed. Comparison with the level of wages in manufacturing by the main production personnel shows parity to an average value of 93-120%. The authors and experts associate this with a relatively low proportion of labor in the cost of production – 8-15%. Cost management in LTM is focused on raw material and transportation expense that determine cost price of the product.

Innovation. Innovative activity is comparable to MTM, it exceeds mining, there we can find positive growth rates, Table 5. But the prerequisites for innovative activity are different from the economically developed countries: "R&D investment stimulate low-tech innovativeness" (Hansen, Winther 2008). Activity is caused by marketing opportunities of Russian LTM, and not by adoption of innovations as a factor of competitiveness. In LTM, "sales growth lags behind R&D costs" (Pakhomova 2013). "Innovation mentality" has not been formed in Russian LTM, and "marketing mentality" will dominate in the medium term.

Table 5
Innovative activity – the number of enterprises
engaged in technological innovation, %

Industries	2010	2011	2012	2013	2014	2015
Mining	6.6	6.8	7	6.4	6.5	5.8
Manufacturing, average	11.3	11.6	12	11.9	12.2	12.1
LTM average	6.44	5.84	5.6	7.02	7.66	8.06
Food	9.5	9.6	9.3	9	10.3	10.2
Textiles	7.5	7.2	7.3	7	7.5	9
Leather	8.1	5.8	3.8	10.8	11.7	11.1
Wood	4.1	3.8	4.7	5.1	6	7.6
Pulp	3	2.8	2.9	3.2	2.8	2.4

According to expert interviews, innovation activity in LTM is concentrated in process innovations aimed at expanding production volume (67%) and productivity growth (24%). The growth of markets and marketing opportunities is a prerequisite for expanded reproduction, diversification in vertical and horizontal chains. Investments into expansion of production are supported by the state in the form of subsidizing interests on loans, commercial expenses and other privileges. There are no direct investments from industrial enterprises into R&D to be addressed to specialized research organizations or small innovative enterprises. Enterprises do not act as initiators and customers of R&D, this explains the low absolute level of investments in R&D (4.89%) in total volume of manufacturing. Innovations are being realized through the purchase of foreign technologies, intellectual property included in the "package" when acquiring equipment. That is, relatively high innovation activity is expressed by the modernization of existing production facilities and launching the new ones on the platform of foreign technologies. This is reflected in the significant share of LTM in the exchange of technologies in manufacturing (Table 6): exports by the number of contracts 17% and amount terms 25%, import by the number of contracts 25% and amount terms 11%.

Table 6
Export and import of LTM segment technologies in the manufacturing
structure (100%), 2015. Reflection through the share of the number
of agreements (N) and the amount of the subject of the agreement (A)

Industries	Export, %		Import, %	
	N	A	N	A
Manufacturing	100	100	100	100
LTM	17	25	25	11
Food	10	5	16	6
Textiles	1	18	0	0

Leather	1	0	2	0
Wood	5	1	6	5

Of course, the balance is shifted towards the import of technologies (\$912 million USD in imports – \$96.3 USD in exports), which reveals the formulated thesis about the content of innovative activity of Russian LTM.

So, the innovative activity of Russian LTM is due to the great marketing potential. It is expressed in the expansion and diversification of production through acquisition of foreign technologies in a "package" with equipment.

Export. According to UNIDO (2016), the share of developing countries in the creation of global added value in LTM has increased from 40% (1972) to 60% (2012): "The fast-growing share of the developing and emerging economy economies in the world manufacturing exports reflects their dynamism". Some economists see the threat of an economic imbalance in the manufacturing of economically developed countries, drawing attention to the need "... to support the further development of low-tech manufacturing in high-wage countries" (Hansen, Winther 2008). Russian LTM is in the mainstream. Russian LTM is distinguished by aggressive marketing aimed at expanding marketing opportunities in domestic and foreign markets. Let's pay attention to high rates of growth of export of selected LTM product groups, Table 7.

Table 7
Volume and rates of growth of exports
of selected LTM product groups

Products	Volume	Annual growth rates, %				
		2010	2011	2012	2013	2014
Meat (without poultry), thousand tons	0.3	0.0	33.3	275.0	33.3	230.0
Milk, thousand tons	9.9	87.9	-0.5	17.8	-7.3	112.9
Timber processed, thousand tons	9918	15.9	-3.0	8.5	7.0	10.8
Plywood glued, thousand cubic meters	1528	93.9	-17.3	-28.3	12.0	11.9
Pulp, thousand tons	1734	7.6	11.0	-13.2	4.4	10.0

The geography of LTM export is impressively wide. In the wood processing industry it covers 26 countries on all five continents, Table 8. It is worth to note that, even given the fact of significant transportation distances, economic expediency of exports remains, with and a high level of profitability of LTM. According to experts, the level of transportation costs is about 20% of cost price.

Table 8
Shares of major importers of the wood manufacturing
industry, % in the vertical distribution, 2015

Countries	Timber processed	Fibreboard	Plywood glued	Wood pulp	Newsprint fibres

Germany	3.04	16.77	16.40	2.09	24.72
Italy	0.60	0.00	8.26	0.67	0.11
China	77.48	0.11	1.74	74.95	2.20
Poland	0.30	19.72	5.65	5.60	1.96
Republic of Korea	2.16	0.00	1.32	8.66	0.00
United Kingdom	2.00	0.00	7.36	0.21	5.03
USA	0.03	0.00	20.23	0.00	0.00
Turkey	1.30	39.08	9.67	0.77	40.45
Finland	2.65	4.69	6.28	0.29	7.11

In the context of discussing the export potential of Russian LTM, we can consider one of the typical cases – the JSC "United Match Company". This is the largest Russian producer and exporter of matches and their processing stage, "match-wood". Table 9 shows the dynamics and structure of export of match-straw to the largest consumers, characterizing both the breadth and the potential of presence with this product in the markets of economically developed and emerging economy countries.

Table 9
Key match-straw importing countries, supplier
– JSC "United Match Company", 2016

Countries	Country's share in the company's export structure in the period 2014-2016, %	Average annual growth rate in the period 2014-2016, %
Total exports	100.00	5.85
Uzbekistan	26.57	2.72
Kenya	23.22	-8.98
Ethiopia	9.79	12.99
Hungary	9.76	-3.29
Mexico	7.88	13.21
India	7.75	39.48
Brazil	5.96	980.51
Egypt	3.65	-13.69

Visualization of the spatial structure of exports of match-straw (see Fig. 1 with a complete list of exports) is a geo-marketing map that expresses the company's presence in world markets.

Figure 1
Spatial structure of exports of match-straw
by JSC "United Match Company", 2014-2016



According to experts, the company has not exhausted the potential for presence in foreign markets. Experts believe that reduction in the growth of exports is a result of weak support of the state in promotion of products to the foreign markets. At the same time, promotion of HTM and MTM products is allocated in the targeted federal programs with consolidated considerable expenditures for the renovation of capital funds, R&D and promotion.

Agglomeration. Cluster strategy and government support in Russia is concentrated in the sectors HTM & MTM. In the case of Russia, Hansen and Winther (2008) vision that "low-tech industries are more geographically clustered than high-tech" is not being observed. During the period of the USSR, LTM enterprises were geographically localized by the factor of proximity to key raw materials. Distribution of labor resources (with a high level of "mandatory" mobility) and consumption chains were a secondary factor. The spatial structure of the branches of contemporary Russian LTM inherited a significant geographic dispersion. Let's pay attention to the spatial structure of logistical flows of raw materials for the production of matches by JSC «United Match Company», Fig. 2.

Figure 2
Spatial structure of logistics of raw materials for the production of JSC
"United Match Company", 2016. Bullet sign (•) designates production



Of course, enterprise management is aware of MAR-clustering effects, but in the medium term there are no preconditions for cluster localization of Russian LTM.

The social significance of LTM is seen by the authors in two aspects.

First, LTM has a significant impact on spatial development, which brings us back to the thesis of Rentschler (1986). More than 30% of Russian mono-cities (335 with a population of 14 million people, 10% of residents of Russia) are oriented to the city-forming enterprise of the LTM sector and more than 60% to enterprises belonging to medium-low-technology industries. LTM defines the socio-economic stability of a number of Russian regions (Uskov, 2012; Zemlyansky, 2014). An important feature of LTM is low sensitivity to negative macro-factors that cause socio-economic crises. Against the backdrop of the recession of 2014-2016, the average annual staff reduction in manufacturing was 3.8%, and in LTM it was 1.95%. The LTM products belong to a basic consumer basket, it is primary from the standpoint of the pyramid of social needs, so even in crisis periods, the volumes of the markets remain. This factor significantly affects the stability of the economy of "mono-cities."

The second aspect, there are 346 thousand people in Russia with disabilities in working age, more than 40% of whom have a special vocational education. Studies show (Viktorova 2004) that more than 80% of the employment potential is concentrated in LTM. The development of the scale of the sector can significantly affect the social adaptation of people with disabilities. Unfortunately, this aspect has not yet received the deserved attention in the scientific discussion.

The formalized economic profile of Russian LTM can be represented through key figures reflecting the balance of LTM in manufacturing, Table 10.

Table 10
LTM balance in manufacturing: key figures (2015)

Key figures	Value
In manufacturing (%):	
Turnover	23.1
Enterprises	40
Employees	27
Investments	17.7

Foreign investments	30
Export of technologies	25
Import of technologies	11
Characteristics	
Turnover, <i>rates of growth</i> , %	19.99
Profitability, %	12.12
Profitability <i>rates of growth</i> , %	34.7
Share in assets of private business, %	91
Innovative activity, %	8.06
Balance of exports and imports of technology, million USD	- 815.7

3.2. Competitiveness factors

The formalized economic profile reveals the main external characteristics of Russian LTM. In-depth interviews with LTM experts make it possible to judge the factors of competitiveness, the drivers that determine the prospects for its development, Table 11.

Table 11

Factors of competitiveness of Russian LTM. The rank of the factor (E, 0-1, 1 – max) according to expert estimations taking into account the variance (s) in the answers of experts

Competitiveness factors		E	s
The potential of the domestic market	Large domestic consumption market. "squeezing out" of imports (<i>Rus. "importozamechenie"</i> – from "import" and "substitution").	0.88	0.12
Export potential	High export potential. including markets of economically developed countries.	0.56	0.21
Perfect competition	The absence of government "overregulation" of markets. B2C dominates. there is a "perfect competition" in most of industries.	0.55	0.18
Private investment	The concentration of private assets ensures the efficiency of management and the dynamism of markets.	0.27	0.34
Fully formed logistics	The stable supplier-to-customer relations that developed in the Soviet period. including relations with the CIS and BRIC countries.	0.22	0.25

It can be seen that the key factor in the competitiveness of Russian LTM in the medium term is the marketing potential of the domestic and foreign markets.

Experts also highlight the situational (temporary) factor of "Counter Sanctions" - an embargo in the food and beverages industries in relation to the products of the EU and number of countries that imposed in 2000-2014 sanctions on Russia. The factor ensured a "breakthrough" development of the branch, almost a 2-fold increase in turnover in the last 5

years.

The main negative factors, or obstacles in the development are being viewed by the experts as dependence on monopolists – the suppliers of raw materials, instability of their pricing policy, insufficient attention from the state that has focused support on HTM and "importozamechenie" (import substitution) in MTM.

3.3. Comparison

The economic profile and factors of competitiveness allowed the authors to understand the main characteristics of Russian LTM, which can be compared with the mainstream of the world sector objectively expressed by Hansen, Winther (2008).

Table 12
Russian LTM profile in comparison with the main international trends (Hansen, Winther 2008)

Topic	Main insights (Hansen, Winther 2008, fragmentary)	Russian LTM profile
Innovation strategies	Low-tech innovation strategies focus on incremental improvements of products and production processes as well as customization of products;	Diversification to increase the depth of processing of raw materials. Innovations are realized by the acquisition of foreign technologies in a "package" with equipment.
Human capital	Human capital is increasingly important for LTM. Investments in training is positively associated with innovativeness of low-tech firms;	Not a key factor in production. The focus is made on personnel with low qualifications, investments are directed into onsite training only.
Capital investments	Machinery investments increase considerably in low-tech manufacturing;	Investments into diversification.
R&D investments	Large low-tech firms increasingly diversify into new technologies, R&D investments stimulate low-tech innovativeness, but less than in high-tech;	R&D investments are missing.
Relations outside value chains	Character of relations are significantly different from the ones found in high-tech. University relations ... relations to collective research centers and standard setting organizations are also of significant importance to low-tech firms;	Relations outside value chains are missing.
Supplier and customer relations	Suppliers – from research-intensive industries – are key sources of knowledge and inputs for low-tech manufacturing. The role of customers for the innovativeness of low-tech firms is crucial and increasing over time;	Focus on the development of relations with trade networks and suppliers of key raw materials. No interaction with HTM .
Agglomeration	Low-tech manufacturing benefits from localization economies rather than urbanization economies. Low-tech industries are more geographically clustered than high-tech. Low-tech manufacturing depends primarily on local relations – MAR externalities	The historically developed low level of localization the prospect of clustering is not expressed.

As we see, the characteristics of the development of Russian LTM are different from the world mainstream. The reason is the difference between the drivers. If the economically countries are looking for "incremental improvements in products and production processes" (Hansen, Winther 2008) to maintain competitiveness with insignificant growth rates of markets, then the key (and the only) driver of Russian LTM are marketing prospects in the domestic and foreign markets. That is why, in the medium term, the investment development of the sector will be directed to the growth of production capacities and aggressive marketing. The investment factor into R&D, a key for LTM of developed countries (Gkypali 2014), will not be realized in the medium term. Russian LTM in the innovation policy will focus on foreign technologies to be acquired with the supply of equipment.

4. Discussion

LTM serves as an economic platform for emerging economy countries, and this trend will keep on in the medium term as a minimum, which is due to the significant marketing potential of the world market. The shift of investments in developed countries into the high-tech sector opens up prospects for the entry of Russian and other emerging economy countries LTM products into their markets in the medium and long term. Orientation towards marketing drivers of development significantly distinguishes the characteristic of Russian LTM from the global mainstream – investment into R&D.

In practical terms, the question is: how justified is the strategy of socio-economic development of Russia (and other developing countries) in the orientation towards an innovative economy and a high-tech sector in the medium term.

The authors formulate the following directions of future research, which can reveal important aspects of the discussed problems:

- The multiplicative effect of LTM in expanding the turnover of suppliers, retail chains, transport, infrastructure;
 - Prospects for the entry (expansion of presence) of emerging economy countries with LTM products in the markets of economically developed countries;
 - The role of LTM in creating job opportunities for people with disabilities.
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5. Conclusion

The Russian economy is defined as "transitional" from raw to innovative drivers of development (WEF Report 2017), but the prospect of this "transition" is long-term and ambiguous. In the medium term, it is important to maintain and strengthen competitive positions in the sectors that form the economic and social sustainability of development, first of all, LTM. Demonstrated market potential, "stress resistance" and efficiency of investments in Russian LTM cause private capital interest (including the foreign one) and should be a prerequisite for discussing a change in priorities of state support – from "fashionable" HTM to "urgent" LTM.

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4. The authors are acquainted with the Russian HTM enterprises having their own workshops for the production of wood packaging.

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