

Under which conditions can an import substitution policy be a driver for re-industrialisation?

Jean-Louis Truel,

*Associate professor Université Paris Est Créteil, Vice-President Cercle Kondratieff
jltruel@cario.fr*

Yanina Pashchenko,

Ph.D., Doцент, Université Paris Est Creteil

Abstract. This paper examines various mechanisms of import substitution policies that can be implanted in Russia, with specific examples in the areas of agro-industry and high technology. It states the condition, under which these policies can help to pursue a strategy of re-industrialisation, and what some potential pitfalls are. Specific attention is being paid to the importance of vertical linkage effects, to relations between science, education and industry and to the role of favourable financial environment, especially in the field of innovation. As concerns the tools of import-substitution and their efficiency it would be stressed that to realize import-substitution policy it may be used a variety of mechanisms: customs tariff (fee) and non-tariff (quotas, import licensing) regulations, as well as subsidies for domestic production and other tools of financial and non-financial state support. They do not have the same efficiency in terms of industrial policy.

Keywords: Agro-industry, competitiveness, financial environment, import-substitution mechanisms, import-substitution policies, innovation policies, re-industrialisation, vertical linkages.

При каких условиях политика импортозамещения может стимулировать реиндустриализацию

Жан-Луи Трюэль, профессор, Университет Париж XII Валь-де-Марн (г. Кретеи, Франция),
вице-президент Cercle Kondratieff

Янина Пащенко,

канд. экон. наук, доцент, Université Paris Est Creteil

Аннотация. Авторы статьи оценивают различные механизмы политики импортозамещения, которые можно применить в России. Приведены отдельные примеры в области применения этих механизмов в АПК и в сфере высоких технологий. В статье указаны условия, при которых такие механизмы могут помочь осуществить стратегию реиндустриализации, показано также какие здесь кроются подводные камни. Особое внимание уделено важности эффектов вертикальных связей, взаимоотношениям между наукой, системой образования и промышленностью, а также роли соответствующего финансового обеспечения, особенно в сфере инноваций. Что касается средств импортозамещения и их эффективности, то в статье рекомендуется применять следующие механизмы: тарифные и нетарифные ограничения, субсидии и другие финансовые и нефинансовые средства государственной поддержки отечественных производителей.

Ключевые слова: агробизнес, конкурентоспособность, финансовые условия, механизм импортозамещения, политика импортозамещения, инновационная политика, реиндустриализация, вертикальные связи.

RELEVANCE OF THE CONCEPT OF IMPORT-SUBSTITUTION

The concept of the import substitution was created in 18th century by Alexander Hamilton and much developed in 19th century by Friedrich List¹. These economists advocated for the introduction of protective duties on imported foreign goods in order to stimulate national production. "The most notorious example was the promotion of infant industries through temporary protectionism in order to allow them to become competitive in the context of overall development of the economy"². List's thought had an inspirational role for the implementation of several national economic policies, such as those of Sergei Witte, in Russia at the end of the 19th century³.

In the second half of the 20th century, several countries implemented import-substitution policies, some in a covert form, some more overtly, especially in Latin America. In these countries the main ideologist of the concept of import substitution was an Argentinean economist Raul Prebisch, who had a great influence on the economic theory and practice⁴. According to Prebisch, import substitution industrialization consisted of active government support of national mechanical engineering and other industrial productions, with stress put on vertical linkages. In the case of Argentina, one can argue that the result was mixed, with an obvious lack of competitiveness of national companies. Similar policies were implemented

with some success in Brazil in the second half of the 20th century⁵.

Import-substitution should be distinguished from pure protectionism in a sense that its aim is to promote the coherence and competitiveness of the National System of Economy in the long-run period. The main goal consists neither to close the domestic market nor to preserve a backwardness, but rather to create truly competitive new industries that produce high quality and highly demanded products.

The major difficulty in implementing an import substitution policy is to find a proper balance between these mechanisms in order to promote long-term coherent industrial development. In modern economies, the interaction between industries is complex. Increasing the competitiveness of one industry requires increasing the competitiveness of its suppliers. Therefore, any import-substitution policy aiming at "re-industrialisation", or "new industrialisation" should act simultaneously at several levels to increase the competitiveness of local production.

THE TOOLS OF IMPORT-SUBSTITUTION AND THEIR EFFICIENCY

To realize import-substitution policy it may be used a variety of mechanisms: customs tariff (fee) and non-tariff (quotas, import licensing) regulations, as well as subsidies for domestic production and other tools of financial and non-financial state support. They do not have the same efficiency in terms of industrial policy.

Import restrictions. This type of measure is no necessarily efficient by itself. Although decided for geopolitical reasons the current Russian embargo on Western agricultural products could have propped up local production in such area as dairy products, fruits and vegetables. In the short term, the results have been mixed for two reasons. First, the local producers have not been able to raise their output instantly. Import restrictions with

¹ List, Fredrich. *Das Nationale System der Politischen Ökonomie* (1841), translated into English as *The National System of Political Economy*, London: Longmans, Green and Co., 1909.

² Truel, Jean-Louis. The concept of national system of economy and its relevance for modern Russia, *Теоретическая экономика*, 2014, N 6, p. 17.

³ This view was developed afterwards in Serguei Witte's Lectures on Political Economy and State Finance, published in 1912. "The wealth of a nation consists not so much in the sum of exchange values it disposes of, but rather in its labor and in the diversity of its productive forces, which create those values and for whose benefit it must strive for a many-sided development".

⁴ Prebisch, Raúl. *The Economic Development of Latin America and Its Principal Problems*, New York: United Nations, 1950.

⁵ Казначеев, Петр. *Об иллюзиях импортозамещения. К чему ведет самоизоляция нефтяной экономики?* SLON, 8 June 2015: <https://slon.ru/posts/52426>.

immediate effect mostly provided windfall profits to local producers, without enticing them to be more competitive. The result was also a decrease in quality⁶. Second reason, production cannot be raised immediately to substitute to imports if the production of inputs—from seeds to machinery—does not follow. In the case of Russia, 80% of the seeds are imported—mostly for China—as well as 50 to 90% of equipments and spare parts⁷. With the fall of the rouble, producers delayed their investment rather than purchase imported inputs: In the first quarter of 2015, 70% of the food industry companies reported a decrease or cessation of purchases of imported machinery and equipment but only 3% of the companies reported a growth of purchases of domestic equipment⁸.

⁶ A recent investigation by Rosselkhoznadzor showed that one third of all dairy products on sale in Russia are not true dairy. The cheese shelves were the worst affected, with 78 percent of cheeses recognized as fraudulent. "Fake Cheese Floods Russian Stores", *The Moscow Times*, 2 October 2015.

⁷ Колбина, Л. Меж берез дожди косые, *Эксперт Урал*, 2015, № 29 (653), 13 July 2015: <http://expert.ru/ural/2015/29/mezh-berez-dozhdi-kosyie/> / Тимошенко, Валерий. Политика импортозамещения в России: от слов к делу, 9 June 2015: <http://www.garant.ru/article/630000>.

⁸ Цухло, Сергей. Как идет импортозамещение в России, *РБК-daily*, 09.06.2015: <http://rbcdaily.ru/economy/562949995519511>.

Subsidies. They are usually the basis of import-substitution measures. In agriculture, several mechanisms have been specifically implemented since 2014. The major priority has been investment: a list of 464 investment projects in priority areas of import substitution programmes have been approved at the beginning of 2015 by the Ministry of Agriculture of the Russian Federation. They includes the construction of greenhouses and vegetable stores, farms for dairy and beef cattle, piggeries, poultry yards, facilities of processing of dairy products, of fruits and berries. 2015's budget has allocated 266 billion roubles of credit resources for these purposes⁹. Other mechanisms include support for animal breeding as well as direct subsidies linked to in such area as milk production¹⁰.

By themselves, subsidies do not guarantee increased efficiency. Examples abound all over the world where sheer subsidies only help the persistence of non-competitive industries. In Russia, the experts in milk industry have concluded that the program of state support in the

⁹ Колбина, Людмила. Меж берез дожди косые, *Эксперт Урал*, 2015, № 29 (653), 13 July 2015: <http://expert.ru/ural/2015/29/mezh-berez-dozhdi-kosyie>.

¹⁰ <http://agroinfo.com/wp-content/uploads/2015/08/15.jpg>.

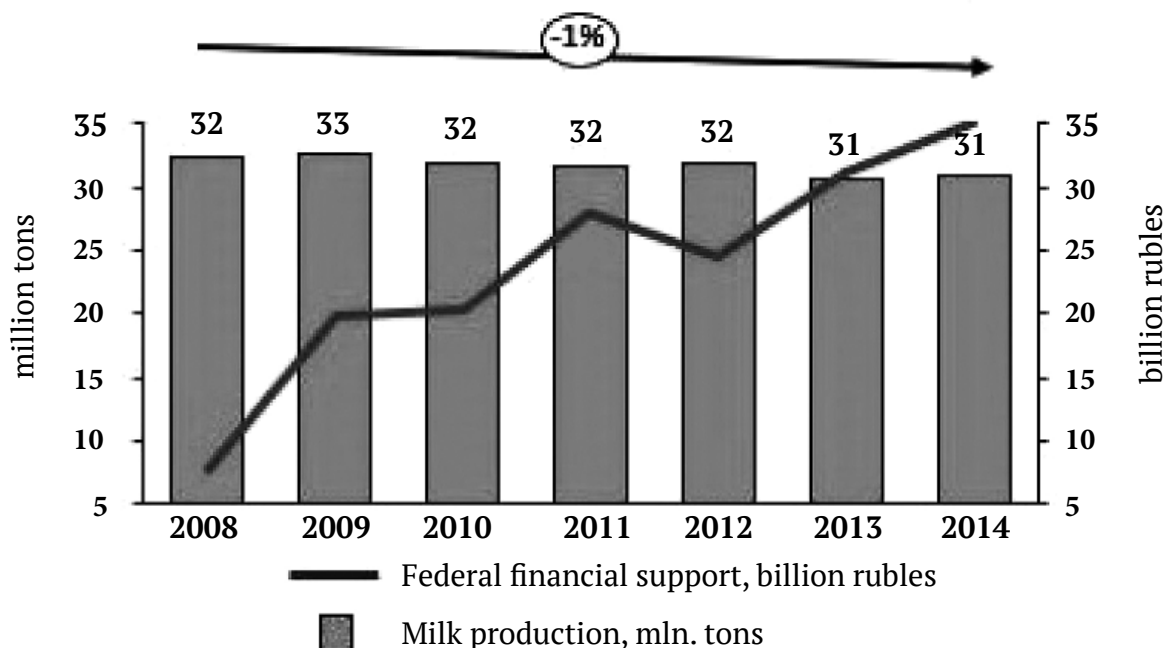


Figure. Dynamics of milk production and of federal subsidies for milk-animal breeding*

* Пономарев о складывающейся ситуации с импортозамещением в АПК, Агроинфо, August 26, 2015: <http://agroinfo.com/a-ponomarev-o-skladyvayushhejsya-situacii-s-importozameshheniem-v-apk-2608201502>.

past years has not helped to increase effectiveness of national milk production in Russia. For instance, the Chairman of the Russian Dairy Union, Arkady Ponomarev underlined that 390 billion roubles of state participation between 2008 and 2014 was to increase the number of dairy cows by 3 million. On the contrary, it decreased. As a result, the production of milk fell (*Figure*).

Therefore subsidies can only be part of a more global strategy.

Action on the whole productive chain from inputs upstream to related support industries downstream. As seen in the case of agriculture, the production in one area is dependent on many other sectors—this is often called vertical linkages. This idea of vertical linkages has been further developed by the theory of “filières” in France in the 80’s¹¹. Under this form, the concept of “filière” tried to show how industries, and especially manufacturing industries, are linked not only by input/output relations but also by technological relations. A similar concept, focusing on the combinations of technologies as well as on the conditions in which they are produced, is that of “technical system”¹². This policy of “filières” has proved its efficiency in France in industries such as the aerospace, rail equipment, nuclear energy and electronic industry.

In the case of Russia this raises the issue of whether the economic policy should be targeted towards export-oriented industries or towards industries with more linkage effects. Russia has the potential to develop competitive industries in high-tech sectors such as IT and internet, or aerospace. Yet, being at a competitive edge in a few industries is not sufficient if they are isolated from the rest of the economy.

For instance, in IT, the cumulative turnover of Russian software development companies increased by 5% and amounted to \$12 Bn in 2014. Yet the most dynamic part of the industry — 6B\$ and 11% growth — is offshore outsourcing¹³. This segment has been favoured by the depreciation of the rouble but has little linkage effect with the rest of the economy.

¹¹ Lorenzi, Jean-Hervé, Pastre, Olivier, Toledano, Joëlle. *La crise du XX eme Siècle*, *Economica*, Paris, 1980.

¹² Dosi, Giovanni. *Technical change and industrial transformation*, Macmillan, London, 1984.

¹³ Russoft 12th Annual Survey of the Russian Software Export Industry, October, 2015.

Recent policies measures have pushed to replace foreign suppliers of software by national companies, especially for purchased by public companies or organisations.

This makes sense under two conditions:

That national suppliers are technically able to provide the same quality — which seems to be true in the most cases — at the same price or lower.

That there is real competition between domestic suppliers.

Software industry will be a good case study of whether import substitution measures to boost an already a competitive domestic industry and promote linkages with other sectors.

Such a policy of linkages could be applied in a whole array of industries in order to build synergies between traditional industries and the modern sector:

- agro-industries;
- aircraft and aerospace;
- pharmacy;
- fine chemistry;
- etc.

One specific area where action in the completely productive chain could be very efficient is energy transition. It can be defined as the path to reduce the consumption of fossil energy in favour of a wide array of alternate sources. Even for a major producer of fossil energy such as Russia, energy transition is a major opportunity of new industrialisation and development of a strong national economy involving new technologies, new products, improvement of existing products and improvement of the efficiency of existing industries¹⁴. This can be a major driver of re-industrialisation.

Strengthening of the links between all the participants of the productive ecosystem: education, science, industry, support services.

When these links do not exist or are weak there can be strong science and education with little effect on the competitiveness of the industry. A striking phenomenon is the huge discrepancy between Russia’s high science and technology potential and the fairly low level of innovative output in the industry.

The scientific and technological potential is high in quantitative terms: According

¹⁴ Truel, Jean-Louis. “The link between innovation and new industrialisation”, *Integration of production, science and education and re-industrialisation of the Russian economy*, Neland, Moscow, mars 2015, pp 78-87.

Table 1. Major innovation indicators. Relative performance to EU average (100)

Indicators	Russia	France	Germany
Input indicators			
Population with completed tertiary education	187	122	89
R and D expenditures in the public sector	57	104	128
R and D expenditures in the business sector	51	111	149
Output indicators			
PCT patent application	7	103	138
Knowledge intensive services exports	101	74	123

Source: "Innovation Union Scoreboard 2014". European Commission, Enterprise and Industry Directorate, Feb. 2014.

to the «Global Innovation Index»¹⁵ Russia is 15th out of 142 countries for tertiary enrolment — and 14th for the % of graduates in science and engineering in tertiary enrolment¹⁶. Yet Russia is lagging in Rand D expenditures — 30th, behind most industrial countries.

As far as output indicators are concerned, Russia is below European average in most areas: in medium and high technology exports, in international publications, etc. The worst situation is for international patents: in Russia, the ratio of PCT patents to GDP is 7% of the EU average¹⁷. This is the legacy of decades, during which these issues have not been tackled.

Interestingly, in one area Russia is at par with the EU average — export of knowledge intensive services. This is due to the strength of its IT outsourcing industry, based on top-level workforce in this area.

As a whole, it can be said, that "the Russian system of innovation is strong at its input and relatively weak at the output"¹⁸. A major reason is probably the lack of interactions between agents: "The quality of relationships between agents and organizations is crucial for the performance of the system. It is not efficient to enhance effort or per-

formance of the single elements if the interaction does not work well"¹⁹.

One example of an attempt to better connect all the participants of the innovative and industrial eco-system is the policy that has been implemented in France for the past ten years. The major and most innovative component has been an ambitious programme of "pôles de compétitivité" (competitive clusters — полюс конкурентоспособности) from 2004 onwards. 71 clusters have been created all over France, on criteria of technical specialisation as well as of regional dimension. A key issue was cooperation between Research centres, Universities, large companies, small and medium-size enterprises and public authorities. As a whole, "Pôles" have helped to create a new environment in which innovative companies have benefited from support and synergies that would not have existed otherwise²⁰.

INCENTIVES FOR FOREIGN INVESTMENTS, TECHNOLOGY TRANSFERS AND INTERNATIONAL COOPERATION

The involvement of foreign companies has the advantage of bringing extra capital for investment and different skills, especially in the area of production processes. It thus allows a gain of time in promoting local production. The main

¹⁵ Dutta, Soumitra, Lanvin, Bruno, Wunsch-Vincent, Sacha. "The global Innovation Index 2014, *The Human Factor in Innovation*", published by INSEAD and WIPO, Fontainebleau, 2014.

¹⁶ By comparison, the US are 2nd and France 38th for % of tertiary enrolment, and respectively 74th and 20th for the % of graduates in science and engineering in tertiary enrolment.

¹⁷ "Innovation Union Scoreboard 2014". European Commission, Enterprise and Industry Directorate, Feb. 2014.

¹⁸ Nureev, R. *Concepts of Socio-Economic Development of Russia: myths and reality, conference*, "Recent Development in the Russian. Business Economics", held at Kyoto University in 9–10 December 2011.

¹⁹ Lundvall, B.A. Interview in "Innovation Trends", No. 4, February 2011.

²⁰ Seleznev P.S., Truel J.L. "Инструменты современной инновационной политики: сравнительный анализ опыта Франции и России", ("Instruments of modern innovative policies: a comparative analysis of the French and Russian experience"), *Regionalnyie problemy preobrazovaniia ekonomiki*, No. 9, 2014, pp. 170–182.

Table 2. Comparison of VC investment in the US, in Europe and in Russia 2013

	US	Europe	Russia (2014)
Number of VC investments	3,480	1,395	279
Amount of invested capital B\$	33.1	7.4	0.6
Average size per investment M \$	9.5	5.3	2.2

Source: "Global venture capital insights and market trends 2014", industry sources.

driver for these companies is usually improved market access. This has been the case in the automotive industry, and very much in agriculture: Danone (dairy products), Louis Dreyfus (grains), and Bonduelle (canned vegetables) ... Over years, these companies are leaders in the Russian market with most of their production being local.

New regulations as well as the depreciation of the ruble have offered new opportunities, not only to access market but to help developing the research and scientific potential of Russia. This can take the form of:

- Cooperation between Russian Universities and research centres and their foreign counterparts;
- Integration of Russian technology by foreign companies.

Joint ventures in Russia to develop business based on the Russian technology. With a cheaper rouble, current economic conditions are an incentive for local production in Russia by foreign company, to replace sheer importations. The next step can be local production with local technologies²¹.

DEVELOPMENT OF A FAVOURABLE FINANCIAL ENVIRONMENT

This is one the most important issue concerning import-substitution. Otherwise, national industries will not be financed to achieve significant growth well enough.

The development of a favourable financial environment can be seen at a microeconomic level with direct support to companies, and especially small and medium size enterprises.

Among other things, this includes subsidies, low-cost loan, tax breaks, R and D financing and public purchasing that favours domestic products

²¹ Truel, Jean-Louis, Paschenko, Yanina. "International cooperation as a way to boost import-substitution strategy". Paper presented at the conference "Economic Security of Russia and growth strategy for Russian Regions", Volgograd, 6 October 2015.

and technologies. These accompanying measures are implemented in a more or less open form in most developed economies, including the US. Public financing of R and D also plays a major role²². Yet, as stated above, measures such as public purchasing are an efficient form of financial support only if the level of domestic production is nearly at par with international competition.

More generally, this raises the issue of redirection of financial flows towards the real sector of the economy rather than towards purely speculative financial markets. In the US, one of the most fundamental factors structuring the development of the productive system is the domination of its financial sector that is largely put to the service of the development of the real economy²³. Such a structure has a major impact on the availability of capital for the development of the productive sector. To give one example, this allows the US Venture Capital to be much larger and more diversified in the US than in Europe or Russia (Table 2).

Moreover, as far as Russia is concerned, private investment reflects a strong unbalance between industries. In 2014, 87% of the VC investments were in software and internet, 5% in computer hardware, 4% in biotech and 3% in industrial tech²⁴. Globally investment goes mostly to companies that imitate existing business models within in a limited range of industries. Moreover, synergies with other industries are very limited. Such a structure is not favourable to a balanced process of reindustrialisation.

²² Mazzucato, Mariana. *The Entrepreneurial State: Debunking Private vs Public Sector Myths*, Anthem Press, London, 2013.

²³ Lorenzi, Jean-Hervé; Namur, Dominique; Truel, Jean-Louis. *Deindustrialisation in relation to the coherence of national productive systems and availability of financial resources*, Paper presented at the MSU conference on Economic Theory, Lomonosov University, Moscow, 10–11 June 2004.

²⁴ Source: NAIMA report "Private Equity & Venture Capital in Russia 2014".

As a conclusion, import substitution is a difficult path and many experiences in the past led to mixed results or outright failures. One of the key is to use these policies not for sheer protection but to promote competitiveness of local production. Theory as well as international experiences shows that such a path is possible provided it is part of a long-term multifaceted strategy.

References

Books and published articles

1. Dosi, Giovanni. *Technical change and industrial transformation*, Macmillan, London, 1984.
2. Dutta, Soumitra, Lanvin, Bruno, Wunsch-Vincent, Sacha. *The global Innovation Index 2014. The Human Factor in Innovation* published by INSEAD and WIPO, Fontainebleau, 2014.
3. Gusev, Lilia. Импортзамещение: выработка концепции. ПЛАСТИКС, 2014, No. 12/II (141), pp. 6–11.
4. Lorenzi, Jean-Hervé, Pastre, Olivier, Toledano, Joelle. *La crise du XX-eme Siècle*, Economica, Paris, 1980.
5. List, Friedrich. *Das Nationale System der Politischen Ökonomie* (1841), translated into English as *The National System of Political Economy*, London: Longmans, Green and Co., 1909.
6. Mazzucato, Mariana. *The Entrepreneurial State: Debunking Private vs Public Sector Myths*, Anthem Press, London, 2013.
7. Prebisch, Raúl. *The Economic Development of Latin America and Its Principal Problems*, New York: United Nations, 1950.
8. Seleznev, P. S., Truel, J. L. Инструменты современной инновационной политики: сравнительный анализ опыта Франции и России, (Instruments of modern innovative policies: a comparative analysis of the French and Russian experience), *Regionalnyie problemy preobrazovaniia ekonomiki*, No. 9, 2014, pp. 170–182.
9. Truel, Jean-Louis. *The concept of national system of economy and its relevance for modern Russia*, Теоретическая экономика, 2014, No. 6, pp. 17–22.
10. Truel, Jean-Louis, *The link between innovation and new industrialisation, Integration of production, science and education and re-industrialisation of the Russian economy*, Neland, Moscow, mars 2015, pp. 78–87.

Industry and official Reports

1. European Commission, Enterprise and Industry Directorate. *Innovation Union Scoreboard 2014, Feb. 2014*.
2. NAIMA report *Private Equity & Venture Capital in Russia 2014*.
3. Russoft, 12th annual Survey of the Russian Software Export Industry, October 2015.

Papers presented at conferences

1. Lorenzi, Jean-Hervé; Namur, Dominique; Truel, Jean-Louis. *Deindustrialisation in relation to the coherence of national productive systems and availability of financial resources*, Paper presented at the MSU conference on Economic Theory, Lomonosov University, Moscow, 10–11 June 2004.
2. Nureev, Rustem., *Concepts of Socio-Economic Development of Russia: myths and reality*, conference Recent Development in the Russian. Business Economics, held at Kyoto University in 9–10 December, 2011.
3. Truel, Jean-Louis, Paschenko, Yanina, International cooperation as a way to boost import-substitution strategy, Paper presented at the conference Economic Security of Russia and growth strategy for Russian Regions, Volgograd, 6 October 2015.

Web articles

1. *The competitiveness of the Russian business*: <https://www.wtca.org/locations/world-trade-center-moscow/news/the-competitiveness-of-the-russian-business>.
2. Модель Н., Романюк Р. Семена продовольственной безопасности, «Эксперт Северо-Запад», 2015, № 14 (701), 30 March 2015: <http://expert.ru/northwest/2015/14/semena-prodovolstvennoj-bezopasnosti>.
3. Колбина Л. Меж берез дожди косые, «Эксперт Урал», 2015, № 29 (653), 13 July 2015: <http://expert.ru/ural/2015/29/mezh-berez-dozhdi-kosyie>.
4. Тимошенко В. Политика импортозамещения в России: от слов к делу, 9 June 2015: <http://www.garant.ru/article/630000>.
5. Цухло С. Как идет импортозамещение в России, РБК-daily, 9 June 2015: <http://rbcdaily.ru/economy/562949995519511>.
6. Пономарев А. О складывающейся ситуации с импортозамещением в АПК, Агроинфо, 26 August 2015: <http://agroinfo.com/a-ponomarev-o-skladyvayushhejsya-situacii-s-importozameshheniem-v-apk-2608201502>.