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e-mail: anna_makaryan@yahoo.com**РОЛЬ АУТСОРСИНГА В ОБЕСПЕЧЕНИИ РОСТА
ПРОИЗВОДСТВА ОДЕЖДЫ В АРМЕНИИ**

Аннотация. *Цель:* оценить, как изменения в экспорте одежды, обусловленном аутсорсинг-контрактами размещенных итальянскими и немецкими брендами в рамках экспорта Группы 62 (одежда и принадлежности одежды текстильные (кроме трикотажных, машинного или ручного вязания) объясняют статистически значимые изменения в реальном производстве сектора по производству одежды в Армении. **Методологический подход:** путем конвертации всех номинальных среднемесячных значений объемов производства сектора по производству одежды и экспорта одежды, обусловленным аутсорсинг-контрактами, размещенных итальянскими и немецкими брендами, в реальные значения, и через тест данных на наличие стационарности переменных, то же самое уравнение было оценено дважды с помощью метода наименьших квадратов для двух периодов (2011:5-2016:12 and 2014:1-2016:12), где была использована первая разница реальных значений переменных. **Результаты:** результаты оценки #1 свидетельствуют о том, что, в среднем, если реальный экспорт одежды, обусловленный аутсорсинг-контрактами, размещенных итальянскими и немецкими брендами в рамках экспорта Группы 62 увеличится на 10 процентов в период времени t , то это может привести к статистически значимым изменениям в реальном объеме производства сектора по производству одежды на 1.152 процентов в период t , основываясь на данные всей выборки (2011:5-2016:12). Между тем, согласно результатам оценки #2, содействие экспорта, обусловленным аутсорсинг-контрактами реальному производству сектора по производству одежды в период времени t выросло и составило 2.06 процентов. **Вывод:** Выполнение работ по аутсорсинг контрактам, размещенных немецкими и итальянскими брендами имело статистически значимое положительное влияние на рост реального объема производства армянского сектора по производству одежды за весь период времени, которое увеличилось в 2014-2016гг. за счет роста объемов выполняемых работ армянскими производителями. Дальнейшая роль аутсорсинга в разрезе перспектив роста сектора во многом будет зависеть от темпов роста экспорта в Россию и увеличения объемов работ выполняемых в рамках аутсорсинг-контрактов. **Применение в области экономической политики:** Приоритеты правительства в отношении привлечения новых аутсорсинг-контрактов могут считаться позиционирование Армении в качестве ворот или платформы для входа Евразийский экономический Союз или как надежный партнер для базирующихся в ЕС компаний, которые предпочитают "аутсорсинг возможности в соседних или в близких к Европе стран". Обе стратегии могут быть реализованы одновременно или по отдельности в зависимости от приоритетов правительства.

Ключевые слова: экспорт, обусловленный аутсорсинг-контрактом, поиск возможности для аутсорсинга, сектор по производству одежды, Армения.

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e-mail: anna_makaryan@yahoo.com**THE ROLE OF OUTSOURCING IN ENSURING THE GROWTH OF WEARING
APPAREL INDUSTRY IN ARMENIA**

Abstract. Purpose: To estimate how changes in outsourced contract exports placed by Italian and German brand names within Group 62 (articles of apparel and clothing accessories, not knitted or crocheted) exports explain the statistically significant changes in the output of the Armenian

wearing apparel industry. **Design/methodological approach:** By converting all nominal monthly values of the output of the wearing apparel industry and outsourced contract exports placed by Italian and German brand names into real ones, and through performing stationarity tests on the variables of interest, the same equation is estimated twice using ordinary least squares with variables in their first difference for two different sample periods (2011:5-2016:12 and 2014:1-2016:12). **Findings:** Estimation #1 results indicate that, on average, if the real value of outsourced contract exports placed by German and Italian brand names within Group 62 changes by 10 per cent in period t it could cause statistically significant changes in the real output of the wearing apparel industry by 1.152 per cent in period t over the entire reported period. Meanwhile, according to Estimation #2 results, the contribution of the outsourced contract exports to the real output of the wearing apparel industry in period t increased and amounted to 2.06 per cent. **Conclusion:** Serving the outsourced contracts placed by German and Italian brand names proved to have a positive statistically significant impact on the growth of the real output of the Armenian wearing apparel industry over the reported period that intensified from 2014 to 2016, due to the growth of the volumes served by the Armenian manufacturers. The future contribution of the outsourcing to the industry growth perspectives will largely depend on the growth rates of the exports to Russia and increase in volumes of works served within the outsourced contracts. **Policy Implications:** The government priorities with respect to attracting more sourcing opportunities would be positioning Armenia either as a Gateway or a Platform to the Eurasian Economic Union or as a reliable partner for EU-based companies that prefer “near-shoring sourcing opportunities.” Both strategies could be implemented either separately or simultaneously depending on the Government priorities.

Keywords: Outsourced contract exports, sourcing opportunity, wearing apparel industry, Armenia

Introduction. Upon expiry of the WTO Agreement on Textiles and Clothing in 2005 that had replaced Multi-Fibre Arrangement in 1995, “various duty-free quota-free access for LDC exporters have been established by developed and some emerging economies” such as GSP schemes, and “other non-reciprocal preferential access schemes” such as African Growth and Opportunity Act (OECD/WTO/IDE-JETRO, 2013:16) [5, p.16]. However, not all low-income countries benefited from preferential trade schemes that translated into strong export performance, which was the case among some African nations that reported “differing performance in this value chain”. (OECD/WTO/IDE-JETRO, 2013:18) [5, p.18]. Among the constraints that explained the export performance variance “the availability and cost of key backbone services, transportation, labor skills and a stable business climate” were mentioned (OECD/WTO/IDE-JETRO, 2013:18) [5, p.18]

According to Berg et al. (2013:1) apparel sourcing location is determined by 5 major criteria such as “price, quality, capacity, speed, and risk” that enable the developing nations to benefit from movement of production activities to low-cost countries from European and US apparel buyers, thus making outsourcing one of the most “critical success factors for the global apparel industry” [2, p.1].

In the case of some developing nations, textile and clothing industry is considered a major contributor to income, and its contribution to GDP could reach 15% like in the case of Pakistan (Keane and Willem te Velde, 2008:1) [1, p.1]. The industry is a major source of exports and foreign exchange earnings for some countries accounting for 83.5% of the total manufacturing exports like in the case of Pakistan. (Keane and Willem te Velde, 2008:1) [1, p.1] The share of this industry employment in total employment in manufacturing in some least developed and low-income countries could range from 35% to 75%, while in the case of some least developed nations this share is close to 90%. (Keane and Willem te Velde, 2008:p.1) [1, p.1]

According to Brenton and Hoppe (2007:30) [3, p.30] the counties that rely on their labor cost advantages can penetrate emerging market niches and benefit from significant export possibilities, however, the rise of the role of the “large buyers” would shape the shifts in the global clothing market. The authors conclude that the governance would be the most crucial factor that would determine rise in clothing exports and “increase the propensity for local clothing firms to export to the EU and the US”, while the quality of the infrastructure provides weak evidence that this factor is a “strong determinant of the propensity to export clothing products.” (Brenton and Hoppe, 2007:30-31) [3, pp.30-31].

Henn et al. (2013:10) [4, p.10] state that in case of China rise of the quality of the apparel export resulted in the increase in export market share that was accompanied by the slight rise in prices remaining “at 40 per cent of the world frontier”, while in case of Bangladesh solid growth of the market share was not accompanied by large quality increase as it was reported in the case of China, and the prices remained at the same level (Henn et al., 2013:10) [4, p. 10]. In the case of Korea and Thailand, that have started to diversify away from the clothing sector, they “now seem to retain higher-quality segments of the apparel market, as quality remains stable or continues to increase, but record falling market shares” (Henn et al., 2013:10) [4, p. 10].

Armenia is an example of a nation that managed to emerge as an apparel sourcing destination for some German and Italian brand names such as La Perla, SARTIS, VERSACE, LEBEK International Fashion, KUBLER Bekleidungswerk, and etc. [6, p.34], [7]. The Armenian wearing apparel industry is one of the dynamically growing sectors of the economy that reported a solid growth over the period of 2010-2016 with CAGR reaching 13.0%¹, and the share of the clothing exports² in total merchandise exports reaching 5% in 2016, comparing to 0.5% in 2010³. The growth of the industry from 2010-2014 was mainly driven by the outsourcing opportunities⁴ placed by the German and Italian companies (mainly explained by the increase in exports of Group 62: (hereafter Group 62)), however, upon Armenia’s accession to the Eurasian Economic Union (the EAEU) in January 2015, the industry experienced dual growth pattern, somehow diverting the from the “established path”. The exports of clothing to the EAEU member states started plummeting from 2015 to 2016, partially explained by the growth of the exports of Group 61 as well (mainly exports to the Russian Federation) [15], while the outsourcing-led export growth reported moderate growth over the same period with some decline being reported in 2015 (y./y.) (see Figure 1).

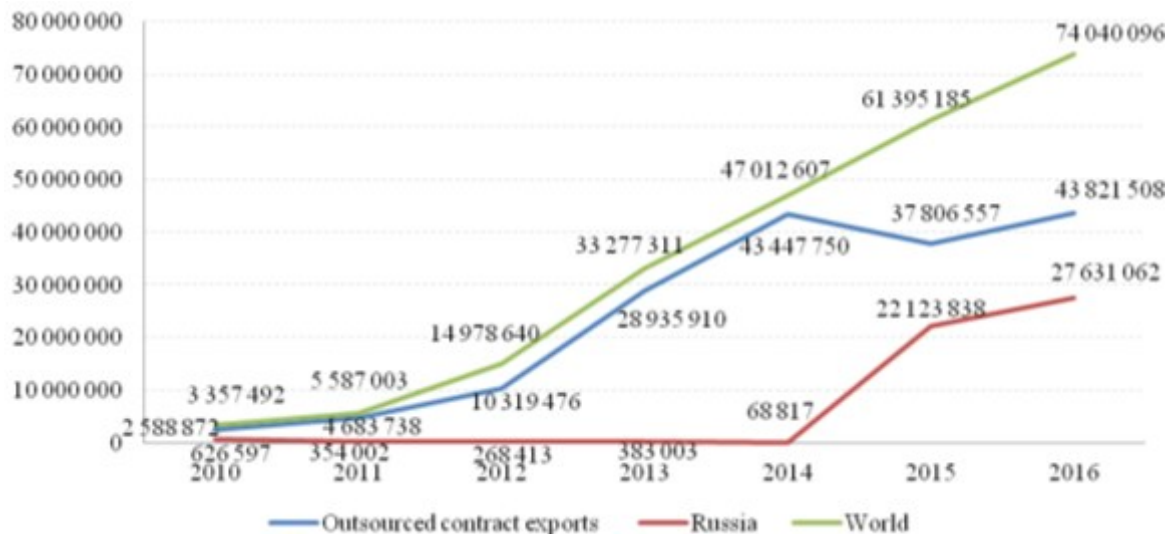


Figure 1: Exports of Group 62: Articles of apparel and clothing accessories, not knitted or crocheted from 2010 to 2016 by destination (current US dollars)

Source: [15]. Author’s own calculations.

Hence, by taking into account the role of outsourced contract exports in explaining the changes in the real output of the wearing apparel industry the main purpose of the article is to attempt to estimate how changes in outsourced contract exports placed by Italian and German brand names within Group 62 (articles of apparel and clothing accessories, not knitted or crocheted) exports explain the statistically significant changes in the output of the Armenian wearing apparel industry.

¹ Source: [8], [9], [10], [11], [12], [13]. Author’s own calculations.

² Sum of exports of Group 61 (articles of apparel and clothing accessories, knitted or crocheted) and Group 62 (articles of apparel and clothing accessories, not knitted or crocheted) according to Harmonized System of Commodity Nomenclature of the World Customs Organization [14]

³ Source: [15]. Author’s own calculations.

⁴ As an outsourced contract exports or outsourcing opportunity placed by a foreign company we mainly consider the exports of Group 62 for the purpose of this article, although we do admit that such opportunities are available and took place with respect to the exports of Group 61. As an outsourced contract exports here we consider only the exports of group 62 and only the exports from Armenia to Germany and Italy (sum of exports to these destinations).

Makaryan (2017:105-107) identified and proposed 4 growth scenarios of growth: Emergence of Armenia as one of the leading suppliers of apparel and clothing accessories in Russia and other EAEU member states; Gateway to the Eurasian Economic Union; Outsourcing-led growth; and Dual-nature growth [19, pp.105-107]. Under the Outsourcing-led growth scenario, the author anticipates that Armenia would emerge as a “proximity sourcing” destination and indicates those measures that the Government needs to undertake and implement (Makaryan, 2017:106-107) [19, pp.106-107]. Under this scenario it is expected that Armenia could attract those EU-based brand names that “would like to enter especially the Russian market or would like to shift the production to Armenia due to Armenia’s accession to the EAEU ... to gain more market share in Russia” (Makaryan, 2017:106) [19, p.106]. Armenia could attract those companies that would like to enter and penetrate the Russian market.

Design/methodological approach

Our model is defined as:

Real output of the wearing apparel industry = f (real value of outsourced contract exports placed by German and Italian brand names within Group 62 (articles of apparel and clothing accessories, not knitted or crocheted) exports) (1)

In our original dataset 84 observations were included covering the period 2010:1-2016:12 (monthly data). The nominal monthly values of real output of the wearing apparel industry and real value of outsourced contract exports were converted into real ones (2010=100) and were seasonally adjusted by using moving average method. Here the methodology applied by Bayadyan and Makaryan is utilized (2017:25). Due to the fact that we had 2 missing values for the year of 2010 in our original dataset we included 72 observations covering the period 2011:1-2016:12. the wearing apparel industry output nominal monthly values [17] were converted into real ones by using the growth rates (at comparable prices) of the given month of the respective year compared to the respective month of the previous year starting from 2011 onward, while 2010 monthly data as a base year values for the given month of the year. In the case of the outsourced contract exports placed by German and Italian brand names, export values expressed in US dollars were first converted the into Armenian drams [18], the consumer price index (CPI) [16] values for the given period (2010:1-2016:12) with each month of the year of 2010 being taken as a base year month were calculated. Then by applying the calculated CPI data the real values of the outsourced contract exports expressed in AMDs were calculated. The same equation was estimated twice for two different sample periods (2011:5-2016:12 and 2014:1-2016:12) to identify how the contributions of the real outsourced contract exports to the real output of wearing apparel industry changed overtime. Before estimating the same equation twice we took the log of the variables of interest.

The stationarity tests (using Augmented Dickey Fuller test) that was performed on the variables (lags length: 1) showed evidence on non-stationarity, and that the variables are stationary at the first-difference (lags length: 2) (see tables 1).

Then we estimated the following equation using ordinary least squares (OLS) with variables in the first difference for two different sample periods:

Estimation# 1, 2

$$D(LROUTPUTSA_t) = \alpha_0 + \alpha_1 * D(LOUTSCONTRACTEXPSA_t) + \varepsilon_t \quad (2)$$

Where:

D(LROUTPUTSA_t) is the first difference of the log of the seasonally adjusted value of the real output of the Armenian wearing apparel industry in period t.

D(LOUTSCONTRACTEXPSA_t) is the first difference of the log of the seasonally adjusted value of the real outsourced contract exports placed by German and Italian brand names within Group 62 (articles of apparel and clothing accessories, not knitted or crocheted) exports in period t.

α_0, α_1 , are model unknown parameters.

ε_t is the error term in period t.

Hence, upon testing for the evidence of serial correlation respective orders of MA and AR processes were included in the equations to fix the problem of autocorrelation. And afterward, Breusch-Godfrey Serial Correlation LM Test was conducted on the residuals to check for evidence of the problem of serial correlation. Upon performing the test it was concluded that there was no evidence of the presence of serial correlation (see Table 2) at 5% (lags: 6) in the case of two equations being estimated.

Table 1

Unit Root Test Results

Period	Variable			
	D(LOUTSCONTRACTEXPSA)			
2011:5-2016:12	ADF Test Statistic	-5.895799	1% Critical Value*	-3.5281
			5% Critical Value	-2.9042
			10% Critical Value	-2.5892
	*MacKinnon critical values for rejection of hypothesis of a unit root.			
2014:1-2016:12	ADF Test Statistic	-5.194852	1% Critical Value*	-3.6228
			5% Critical Value	-2.9446
			10% Critical Value	-2.6105
	*MacKinnon critical values for rejection of hypothesis of a unit root.			
Period	D(LROUTPUTSA)			
2011:5-2016:12	ADF Test Statistic	-8.424333	1% Critical Value*	-3.5281
			5% Critical Value	-2.9042
			10% Critical Value	-2.5892
	*MacKinnon critical values for rejection of hypothesis of a unit root.			
2014:1-2016:12	ADF Test Statistic	-4.904471	1% Critical Value*	-3.6228
			5% Critical Value	-2.9446
			10% Critical Value	-2.6105
	*MacKinnon critical values for rejection of hypothesis of a unit root.			

Table 2

Test for no serial correlation in the error terms

Estimation	Breusch-Godfrey Serial Correlation LM Test Results			
Estimation#1 Sample period: 2011:5-2016:12	Breusch-Godfrey Serial Correlation LM Test:			
	F-statistic	0.842565	Probability	0.542284
	Obs*R-squared	5.243662	Probability	0.512963
	Breusch-Godfrey Serial Correlation LM Test:			
Estimation#2 Sample period: 2014:1-2016:12	Breusch-Godfrey Serial Correlation LM Test:			
	F-statistic	1.576749	Probability	0.192235
	Obs*R-squared	9.341008	Probability	0.155289
	Breusch-Godfrey Serial Correlation LM Test:			

We performed normality test to check whether the residuals were normally distributed or not. The test results showed the evidence of normally distributed error terms (see Table 3).

Estimation #1 results indicate that, on average, if the real value of outsourced contract exports placed by German and Italian brand names within Group 62 changes by 10% in period t it could cause statistically significant changes in the real output of the wearing apparel industry by 1.152 per cent in period t over the entire reported period. Meanwhile, according to Estimation #2 results, other things being equal, if the real value of outsourced contract exports placed by German and Italian brand names within Group 62 changes by 10% in period t it could cause statistically significant changes in the real output of the wearing apparel industry by about 2.06 per cent in period t.

These results indicate the following:

- The contribution of the outsourced contract exports placed by German and Italian brand names within Group 62 to the changes in real output of the wearing apparel industry has increased over the time;

- The increase in contribution of the outsourced contract exports served by the Armenian manufacturers to the changes in industry real output could be achieved by either serving more and/or large-scale contracts placed by established partners or attracting new sourcing opportunities with other brand names or their combination other things being equal (with exports of Group 62 to Russia reporting moderate growth or remaining at the same level);

- The growth of exports to the Russian Federation over the medium-term could be a crucial factor that would affect the further contribution of the outsourced contract exports to the changes in the real output of the wearing apparel industry. If the exports to Russia continue skyrocketing as it was reported from 2015 to 2016, the contribution of the outsourcing to the changes in real output might decline, or at least remain at the same level depending the fact how Armenian manufacturer would be successful in attracting new contracts from established partners and/or from new ones.

Conclusion. Overall, serving the outsourced contracts placed by German and Italian brand names within Group 62 proved to have a positive statistically significant impact on the growth of the real output of the Armenian wearing apparel industry over the reported period (2011:5-2016:12). The contribution of the outsourcing to the industry intensified from 2014 to 2016, due to the growth of the volumes served by the Armenian manufacturers.

The future growth of the contribution of the outsourced contracts to the growth perspective of the wearing apparel industry served by the Armenian manufacturers will depend on 2 factors:

- The growth rates of the of exports to Russia;
- Increase in volumes of works served within the outsourced contracts either by serving the orders of the existing and established partners or attracting new sourcing opportunities or their combination.

Policy Implications. Hence, the government priorities with respect to attracting more sourcing opportunities could be the followings:

- To position Armenia as a Gateway or a Platform to the Eurasian Economic Union, thus attracting those EU-based based companies that would like to enter and penetrate the Russian market or those ones that would like to increase the market share by ensuring the most cost-effective (adjusted with the high quality sewing services) production by benefiting from the common customs union advantages;

- To position Armenia as a reliable partner for those EU-based companies that prefer “near-shoring sourcing opportunities” and attract those brand names that are sensitive to the quality of items manufactured and would like to ensure the most cost-effective production possible within the reasonable time-periods.

The Government could implement these strategies either separately or simultaneously depending on the priorities the government would like to pursue and funding limitations to advance these two objectives.

References:

1. Keane, Jodie and Willem te Velde, Dirk (2008), *The role of textile and clothing industries in growth and development strategies, Final Draft, Investment and Growth Programme, Final Draft, Overseas Development Institute*, 71p., available at: <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/3361.pdf> (last accessed: June 11, 2017).
2. Berg, Achim, Berlemann, Benedikt, Hedrich, Saskia (2013) *The global sourcing map – balancing cost, compliance, and capacity McKinsey’s apparel CPO survey 2013, Apparel, Fashion & Luxury Group, McKinsey & Company, Inc.* 11p.
3. Brenton, Paul and Hoppe, Mombert (2007) “*Clothing and Export Diversification: Still a Route to Growth*

- for Low Income Countries?” Policy Research Working Paper 4343, International Trade Department World Bank, Washington DC, available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/7334/wps4343.pdf?sequence=1&isAllowed=y> (last accessed: June 30, 2017).
4. Henn, Christian, Papageorgiou, Chris, and Spatafora, Nikola (2013) “Export Quality in Developing Countries”, IMF Working Paper 13/108, The International Monetary Fund Washington DC, 33p., available at: <https://american.edu/cas/economics/news/upload/Papageorgiou-Export-Qualities-in-Developing-Countries.pdf> (last accessed: June 30, 2017).
5. OECD/WTO/IDE-JETRO (2013) *Aid for Trade and Value Chains in Textiles and Apparel*, 51p., available at: https://www.oecd.org/dac/aft/AidforTrade_SectorStudy_Textiles.pdf (last accessed: June 30, 2017).
6. EV Consulting (2017). *Armenia Investment Map*, EV Consulting: Yerevan Armenia, 44p. Available at: http://evconsulting.com/sites/default/files/attachments/ArmlInvestmentMap_Jan_2017.pdf (last accessed: March 6, 2017).
7. Development Foundation of Armenia, <http://www.dfa.am/invest/textile/> (last accessed: March 26, 2017).
8. National Statistical Service of Armenia, *Main Indicators of Industrial Organizations by Economic Activities (two-digit code)*, by Marzes and Yerevan city for January-December 2011, 2012, NSS: Yerevan, Armenia (in Armenian).
9. National Statistical Service of Armenia, *Main Indicators of Industrial Organizations by Economic Activities (two-digit code)*, by Marzes and Yerevan city for January-December 2012, 2013, NSS: Yerevan, Armenia (in Armenian).
10. National Statistical Service of Armenia, *Main Indicators of Industrial Organizations by Economic Activities (two-digit code)*, by Marzes and Yerevan city for January-December 2013, 2014, NSS: Yerevan, Armenia (in Armenian).
11. National Statistical Service of Armenia, *Main Indicators of Industrial Organizations by Economic Activities (two-digit code)*, by Marzes and Yerevan city for January-December 2014, 2015 NSS: Yerevan, Armenia (in Armenian).
12. National Statistical Service of Armenia, *Main Indicators of Industrial Organizations by Economic Activities (two-digit code)*, by Marzes and Yerevan city for January-December 2015, 2016, NSS: Yerevan, Armenia (in Armenian).
13. National Statistical Service of Armenia, *Main Indicators of Industrial Organizations by Economic Activities (two-digit code)*, by Marzes and Yerevan city for January-December 2016, 2017, NSS: Yerevan, Armenia (in Armenian).
14. World Customs Organization, *Harmonized System Database*, available at: <http://www.wcoomd.org/en/topics/nomenclature/instrument-and-tools/tools-to-assist-with-the-classification-in-the-hs/hs-online.aspx> (last accessed: March 29, 2017)
15. United Nations, *UN Comtrade Database*, available at: <https://comtrade.un.org/data/> (last accessed: July 5, 2017).
16. Central Bank of Armenia, “Consumer Price Index (monthly), over previous month, over December of previous year, over the same month of previous year, over average prices of 2005 year.” online database, available at: <https://www.cba.am/en/sitepages/statrealsector.aspx> (last accessed: March 7, 2017), (in Armenian).
17. National Statistical Service of Armenia, *Monthly Reports of Main Indicators of Industrial Organizations by Economic Activities (two-digit code)*, by Marzes and Yerevan city for the period 2012-2016, NSS: Yerevan, Armenia (in Armenian).
18. Central Bank of Armenia, “Exchange rate of dram against several currencies” online database, available at: <https://www.cba.am/en/sitepages/statexternalsector.aspx> (last accessed: July 6, 2017).
19. Makaryan, A.R. (2017) “Scenarios of Growth of the Wearing Apparel in Armenia,” *Regional problems of transforming the economy (Региональные проблемы преобразования экономики)*, No. 1 (75), pp.100-108
20. Bayadyan A.H., Makaryan, A.R. (2017) “Interplay of Commercial Bank Lending to the Manufacture of Food Products with the Industry Output in Armenia,” *Regional problems of transforming the economy (Региональные проблемы преобразования экономики)*, No. 1 (75), pp.21-29.