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Feasibility of Nearshoring European Manufacturing Located in China to Russia

Yulia Panova
Department of Logistics and Supply Chain Management,
National Research University Higher School of Economics, St. Petersburg, Russia
Email: YPanova@hse (*Corresponding Author*)

Per Hilletofth
Department of Industrial Engineering and Management,
School of Engineering, Jönköping University, Jönköping, Sweden
Email: per.hilletofth@ju.se

ABSTRACT

The purpose of this study is to identify and analyze factors that support nearshoring of offshored European manufacturing located in China to Russia. The attention is paid to factors, such as labor cost, inflation, exchange rate, and labor productivity that are analyzed based on deterministic models to identify logical dependencies. This study shows that wage growth might deprive manufacturing in China from its main competitive advantage of cheap labor in the forthcoming years. The growing wage rates naturally contribute to the prime cost that is aggravated by the potential inflation, which, in turn, limit the margin in the selling price. The cumulative effect of other extra costs can aggregate such an amount that, in the foreseeable future, companies would need to relocate manufacturing to new locations. One option could be to nearshore manufacturing to Russia.

Keywords: *offshoring, reshoring, nearshoring, China, Russia*

1. INTRODUCTION

China has for a long time been considered as a favorite low-cost destination for offshored and outsourced manufacturing from more developed countries (Hilletofth, 2011). Still, this is changing profoundly, and there is no end for the structural movements in this regard (Wiesmann et al., 2017). Western companies have started to recognize that relocation of manufacturing to the home country only is single digits more expensive than manufacturing in China, if taking all the hidden costs into account (Gray et al., 2013; Gylling et al., 2015; Tate, 2014). The effect of hidden costs has in the past few years, motivated nearly 350 companies to reshore manufacturing to the United States, bringing 40,000 manufacturing jobs back from overseas (Woolhouse, 2015). The reshoring examples range from large enterprises, like General Electric, to small and medium-sized enterprises, as ET Water Systems (Pearce, 2014; Tate et al., 2014; Uluskan et al., 2016). Even Apple announced its plan of manufacturing one of the Mac computer lines in the United States (Theyel, 2012). Reshoring examples could also be found in a European context (Ancarani et al., 2015; Bailey and De Propris, 2014; Fratocchi et al., 2014).

Other Western companies have instead of reshoring manufacturing back to the home country, decided to relocate manufacturing closer to the home country. This type of movement is entitled nearshoring. For instance, companies based in the United States have begun to nearshore manufacturing from China to Mexico, which has a better manufacturing cost index (Javalgi et al., 2013; Hadjimarcou et al., 2013; Pearce, 2014). Companies based in Europe have instead begun to nearshore manufacturing from China to Central and Eastern Europe (Capello et al., 2015; Schuh, 2014; Slepniov et al., 2013).

Western companies have also begun to move manufacturing from China to neighboring countries, such as Vietnam, India, Bangladesh, and Russia (i.e., employing a China+1 strategy), where wages are several times lower than in China (Hwang et al., 2016; Foerstl et al., 2016). For instance, major retail chains like IKEA, Zara, H&M, and Decathlon, are thinking about moving manufacturing from China to Russia (Protsenko, 2016). Western companies are also relocating manufacturing within China to use regions with less economic development, and, thus with lower wage levels. However, this inland relocation strategy will only be feasible in a medium-term perspective.

The change with regard to preferable manufacturing locations highlighted above has not only taken place amongst Western companies. The growth of wages in China has also motivated Chinese manufacturing companies to move manufacturing to neighboring countries like Russia and India. For instance, the government of China intends to move manufacturing within twelve leading industries to Russia (Isaev, 2016). An example would be the Chinese clothing retail chain, Sela, which is interested in moving manufacturing to Russia (Protsenko, 2016). Other examples of Chinese manufacturing that has been, or probably will be, transferred to Russia include industries like shipbuilding, chemical, and metallurgical (Isaev, 2016). These prospects will be more viable, if right infrastructure projects portfolios are set in export oriented zones of seaports in the foreseeable future (Panova and Hilletofth, 2016).

The reasons behind Western companies reshoring and nearshoring of manufacturing are usually seen as patriotic

and political. Nevertheless, the root cause for this trend is financial aspects (Ellert, 2015). First and foremost, wages are rising rapidly in China. At the same time, the increased level of automation and computerization in developed countries has increased cost-efficiency and manufacturing competitiveness (Wiesmann et al., 2017; Woolhouse, 2015). For example, it has been predicted that the cost of having manufacturing in China will be equal to the cost of having manufacturing in the United States, in the nearby future (LeBeau, 2013). Despite the fact that manufacturing movements between developed and emerging countries nowadays is going in both directions (Brennan et al., 2015; Kinkel, 2012; Schuh, 2014), very few studies have investigated the phenomenon of manufacturing reshoring and nearshoring (Arlbjørn and Mikkelsen, 2014; Kinkel, 2014; Martínez-Mora and Merino, 2014; Tate, 2014).

The purpose of this study is to identify and analyze factors that support nearshoring of offshored European manufacturing located in China to Russia. The attention is focused on the labor-intensive industries (e.g. plastics processing, textile, knitwear, footwear, garment industry, engineering, machine-building and metalworking enterprises, electronics, machine tools, chemical fiber, rubber, instrument production), for which the growth of wages has a considerable impact on the competitiveness of the products selling price (Scott, 2006). The specific research questions are: (1) 'What are the factors that support nearshoring of offshored European manufacturing in China to Russia?' and (2) 'What effect do the factors have on manufacturing cost?'. These questions have been analyzed through literature review as well as development and evaluation of deterministic factor models. The factor models have allowed the calculation and justification of the possible effect of the individual factors.

The remainder of this paper is structured as follows: To begin with, the main factors for nearshoring manufacturing located in China to Russia are analyzed and discussed in Section 2. Factors considered in the analysis include labor cost, inflation, exchange rate, and labor productivity. The analysis is grounded in statistics and the identified logical dependencies between the factors with the help of deterministic models. Finally, the study is discussed and concluded in Section 3.

2. ARGUMENTS FOR NEARSHORING MANUFACTURING

As was mentioned before, a manufacturing relocation process has been ongoing in the last decades, resulting in that an enormous amount of manufacturing has been moved from Western countries to China in order to achieve cost reductions. In recent years, a change with regard to preferable manufacturing locations has taken place amongst Western companies who have started to reshore or nearshore manufacturing previously offshored to China. In the following, some factors that support nearshoring of offshored European manufacturing located in China to Russia will be identified and analyzed (e.g., labor cost, inflation, exchange rate, as well as labor productivity).

2.1 Labor Cost

As a rule, labor cost accounts for 20 percent of selling price of the product in China, while, in developed countries it is close to 50% (Harrington, 2011). Labor cost is growing in China (especially in terms of Chinese currency), which means that they may converge with the labor cost in developed countries and overpass wages in countries of the same level of development, in the foreseeable future. In order to investigate this statement further, estimations of wage development in China and Russia until 2020 were made (**Figure 1**). The value of wages in Chinese Yuan (CNY) and Russian Ruble (RUB) were converted into USD (US Dollar) based on the current exchange rates (SNB, 2016). As can be noted in the figure, wages were 30% higher in Russia compared to China in 2014. However, after the collapse of the RUB in 2015, the wages in China overpassed the wages in Russia. Based on the approximation, it was found that the wage development in China follows a linear growth, while in Russia exponential. If the decrease of Russian wages, which started in 2015, continues this may change to a linear growth as well.

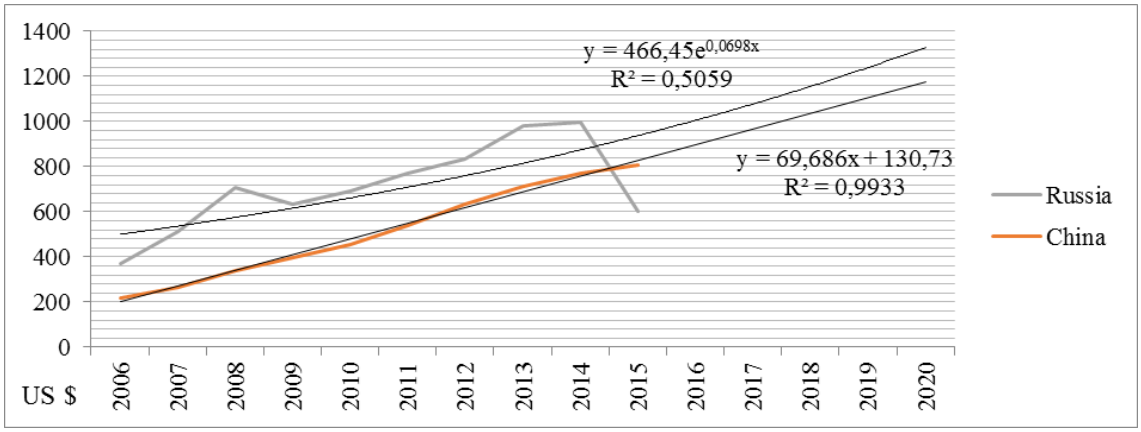

Figure 1 Estimated wage development in China and Russia until 2020
Sources: RFSSS, 2016; Tradecon, 2016

In order to calculate the effect of these labor cost changes on the selling price for a product made in China and Russia, a comparison was made in relation to the wage level of 2016 and 2020 (**Table 1**). In the calculation example, the selling price (p) consists of raw material costs (m), wage costs (w), overhead costs (o), and profit (r). In

addition, the raw material costs and wage costs constitute the unit prime cost (u), while the overhead cost and profit constitute the unit gross profits (s), as shown below (Feiwel, 1989):

$$p = m + w + o + r \ ,$$

$$p = u + s \ .$$

The calculation depicts that the labor cost is predicted to increase by 46% in China and 120% in Russia during this period, while the selling price is predicted to increase by 9.1% in China and 18.9% in Russia. Meanwhile, the labor cost as the percentages of the selling price is predicted to increase from 20% to 26.7% in China and from 15.8% to 29.1% in Russia. Thus, the growth of selling price in China and Russia is predicted to be 5.1 and 6.4 times lower than the increase of labor cost.

Table 1 Selling price before and after estimated wage change

Indicators		Before estimated wage change (2016), USD		After estimated wage change (2020), USD		Change, %	
		China	Russia	China	Russia	China	Russia
Unitprime cost	Direct material (raw materials)	2262				-	
	Direct labor (wage)	808	604	1176	1329	46	120
Unit gross profits		970				-	
Selling price		4040	3836	4408	4561	9.1	18.9
Direct labor of selling price, %		20.0	15.75	26.7	29.1	33.5	84.2
Note: the idea of developing the table was taken from Petrov-Shikotihin (2003).							

Sources: RFSSS, 2016; Tradecon, 2016

As can be seen in the analysis, wages have grown strongly in China in recent years and this is predicted to continue. This development might deprive manufacturing in China from its main competitive advantage of cheap labor. As a matter of fact, European companies located in China may in the nearby future need to transform their operations, i.e. automate the processes and reduce the number of workers. Alternatively, they can leave the country to find new low cost locations or consider reshoring or nearshoring of manufacturing. If also taken other hidden costs (i.e. logistics and supply chain) into account, the calculation could favor reshoring or nearshoring closer to final markets.

2.2 *Inflation*

As was addressed in the previous section, wages in Russia have grown faster than in China in the recent years (if not considering the collapse of the RUB in 2015). One possible explanation could be a difference in the inflation rates. As can be seen in **Figure 2**, the inflation is much higher in Russia compared to China. The expected inflation at the end of 2016 is 3% in China, and 5-6% in Russia. The acceleration of inflation can result in the growth of wages, since the escalation of prices, as a rule, leads to the increase of wages.

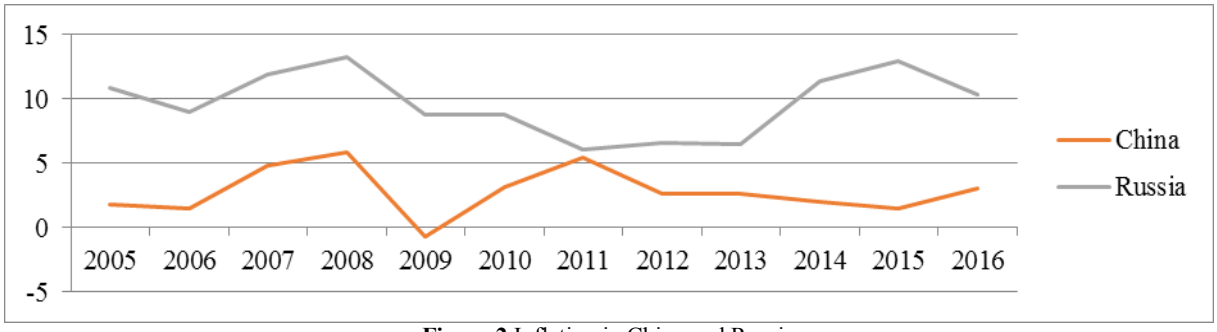

Figure 2 Inflation in China and Russia
Sources: Globrat, 2016; Tradecon, 2016

A High inflation is an indicator of increasing cost necessary to manufacture the product. For instance, if the cost of oil and gas is growing this, automatically, leads to an increase in the cost of other goods or services, especially those in need of transportation services. It means that inflation is a criterion to consider in the manufacturing location decision.

2.3 *Exchange Rate*

If the manufacturing is located in developing markets, it is important to take into account the influence of the exchange rate on the profit that manufacture can make out of the exported products. As was shown in **Table 1**, the selling price is comprised of prime cost and profit. Assuming that prime cost, as well as manufactured volumes are remained the same, the entrepreneur, which owns the manufacturing in China or Russia can obtain different

profit, depending on the varied exchange rates in relation to the widely excepted trading currency of USD.

In particular, if manufacturer is located in Russia and exports products, the currency pair of the RUB in relation to USD should be considered. The statistics depicts that RUB value has decreased with regard to USD for the last ten years. The highest level of RUB was in 2008 (23.17 RUB per 1 USD), while the lowest level was in 2016 (82.28 RUB per 1 USD).

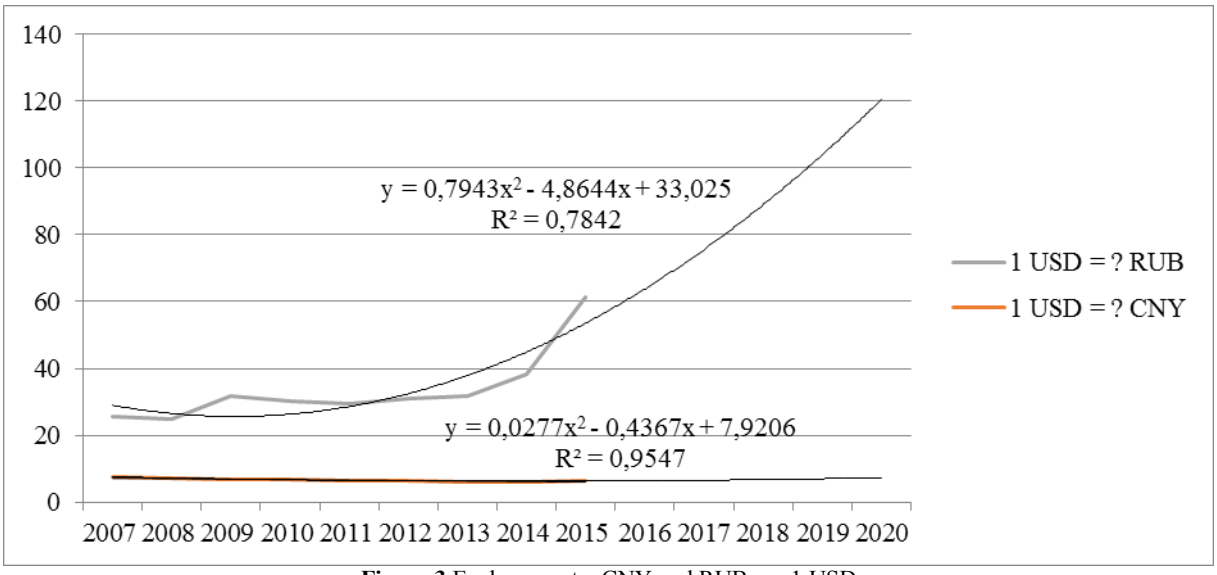

Figure 3 Exchange rate: CNY and RUB per 1 USD
Sources: SNB, 2016

The continued decrease of RUB in relation to USD can provide the growth of the profit for manufacturers located in Russia. If to assume that the exporter by selling the manufactured product from Russia abroad made revenue of 100 USD, with the latest level of exchange rate (1 USD=82.28 RUB), the exporter will receive the income of 8 228 RUB. If the prime cost equals 75% of the selling price (**Table 1**) or 6 171 RUB, the profit would be 2 057 RUB. With the previous exchange rate of 2008 (1 USD=23.17 RUB), the profit would be 3.5 times lower (100 23.17 0.25=579 RUB). Based on the annual decrease of RUB in regard to USD, the proposed decline of RUB can reach 96.7% by 2020 (**Figure 3**), providing a positive scenario for the profit generation for manufacturer situated in Russia (**Table 3**). The same situation is with CNY, but with lower growth rates (15.1% by 2020; **Figure 3**). The fit of the models have been checked by the program STATISTICA. The quadratic model provides an adequate fit to the data of Russian and Chinese case (**Table 2**).

Table 2 Diagnostics of regression analysis

Russian Case

Test of SS Whole Model vs. SS Residual (Spreadsheet1)

Multiple R	Multiple R?	Adjusted R?	SS Model	df Model	MS Model	SS Residual	df Residual	MS Residual	F	p
0,900509	0,810917	0,747889	48,65502	2	24,32751	11,34498	6	1,890831	12,86604	0,006760

Chinese Case

Test of SS Whole Model vs. SS Residual (Spreadsheet1)

Multiple R	Multiple R?	Adjusted R?	SS Model	df Model	MS Model	SS Residual	df Residual	MS Residual	F	p
0,940718	0,884950	0,846600	53,09700	2	26,54850	6,903005	6	1,150501	23,07560	0,001523

Thus, the development of the exchange rate by 2020 regarding CNY and RUB, in both countries favor the profit, but in Russian case it can be higher. From this point of view, Russia could be a preferable manufacturing location in a view of the considerable positive exchange rate's effect on profit (**Table 3**).

2.4 Labor Productivty

Another factor important to consider in the manufacturing location decision is the labor productivity. **Figure 4** shows that the labor productivity per person employed and its growth trends are higher in China compared to Russia. It may also be noted that a couple of years ago the labor productivity in China overpassed the labor productivity in Russia. The expected labor productivity growth until 2020 is 47.5% in China and 25.6% in Russia from the level of 2016 (CBO, 2016).

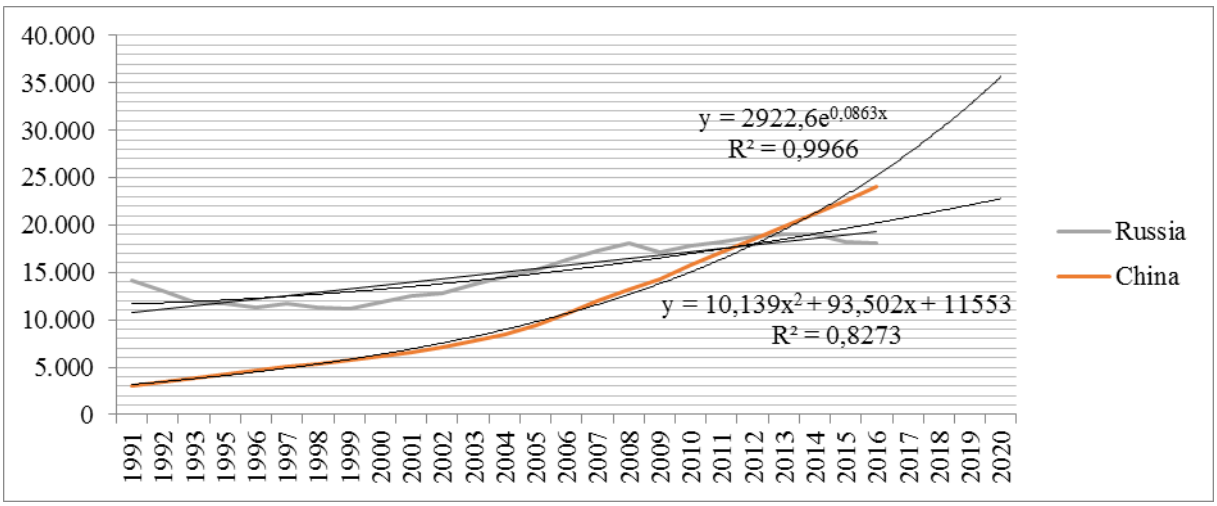

Figure 4 Labor productivity per person employed in USD
Sources: CBO, 2016

The analysis proves the labor productivity is expected to grow fast in China and Russia, which is a natural process for the developing countries. However, it is important to bear in mind that in these emerging economies, especially in China, wages have grown strongly in recent years, and this is predicted to continue. Therefore, the growth of labor productivity can be a costly option for the manufacturing located in China. For the justification of reshoring or nearshoring of manufacturing from China, it is worthwhile to take into account the ratio of the wages to productivity. In 2015, the ratio was 0.0358 in China and 0.0331 in Russia. In this regard, Russia can be a preferable location for manufacturing. However, the situation can change dramatically in the future (0.032 for China and 0.064 for Russia). That is why, for the accuracy of decisions, the factors should be continuously monitored.

2.5 Effect of Factors on the Manufacturing Cost

In the previous section, some factors and their relation to the selling price, as well as choice of manufacturing location were analyzed. In the following, the combined effect of these analyzed factors is calculated (**Table 3**). Admitting that labor cost and labor productivity play the most important role in the prime cost, their cumulative effect is verified. For instance, if the productivity is sufficiently high, the pressure of wage growth on prime cost can be mitigated. With a small increase in productivity, not to mention the stability or decline of this indicator, the pressure of growing wage can be considerably enhanced. In order to depict these dependencies, the next adjustments have been made. Assuming that wage accounts for 20% and 15.8% of the selling price in China and Russia, their expected growth by 46% and 120%, may be offset by the increase in productivity by 47.5% and 25.6%, respectively (**Table 3**). By decreasing the prime cost, businesses increase profit margins that are included in the selling price. The profit margins can also be positively affected by the exchange rates. The decrease of the national currency in China by 15.1% and by 96.7% in Russia, in relation to USD, can have a huge impact on the percent change of the profit, which is 24% of the selling price in China and 25% in Russia (**Table 3**).

On the whole, it is expected that the selling cost by 2020 in China will decrease by 0.4%, (+9.2 – 9.6 = –0.4; **Table 3**), while, in Russia, the growth would be 14.86% (+18.96 – 4.1 = +14.86; **Table 2**). However, if also consider additional effect of the exchange rate, it would be more preferable for the exporter to locate manufacture in Russia. The reason is that the increase of the profit in the national currency could be as much as by 36.7%, while in China, the profit of the owner, manufacturing and exporting the products from the country, is expected to increase in less percentage (by 9.97%).

3. CONCLUDING REMARKS

The purpose of this study is to identify and analyze factors that support nearshoring of offshored European manufacturing located in China to Russia. This research shows that the primary factor is labor cost. In particular, due to the collapse of RUB against USD in 2015, depreciation of the Russian currency by 70% has led to the situation, in which the wages in China overpassed the average wages in Russia by 25%.

Despite the critical role of labor cost factor, others, such as inflation, exchange rate, and labor productivity also were investigated. It was found that ratio of labor cost to labor productivity could be used as one of the indicators for choosing the location for manufacturing. In this regard, nowadays, Russia may be considered for nearshoring of European manufacturing currently located in China.

The assessment of the expected combined influence of all factors has helped to depict their logical dependencies with the main components of the selling price, i.e. the prime cost and profit. In particular, a factor of labor productivity could counterbalance the growth of direct labor cost, thus, reducing the percentage increase of selling price due to the growth of wage cost. This effect can provide the situation, in which China could even have the decrease of the selling price: –0.4% (+9.2 – 9.6 = –0.4; **Table 3**). Meanwhile, in Russia, by 2020 the percentage change of selling price could increase: +14.86% (+18.96 – 4.1 = +14.86; **Table 3**).

Table 3 Combined effect of analyzed factors on the selling price, in percentage change by 2020

Effect	Dependencies between factors and components of selling price	
	China	**Russia**
Increase of wage cost	**Factor Wage cost**	
	$(\frac{1.46 \times 20}{1.46 \times 20 - 20 + 100}) \times 100 - 20 = 6.74\%$ (+)	$(\frac{2.2 \times 15.8}{2.2 \times 15.8 - 15.8 + 100}) \times 100 - 15.8 = 13.4\%$ (+)
Increase of selling price	*Effect on selling price*	
	$0.46 \times 0.20 \times 100 = 9.2\%$ (+)	$1.2 \times 0.158 \times 100 = 18.96\%$ (+)
Decrease of wage cost	**Factor Labor productivity**	
	$(1 - \frac{1}{1.48}) \times 20 = 6.49\%$ (–)	$(1 - \frac{1}{1.26}) \times 15.8 = 3.26\%$ (–)
Decrease of selling price	*Effect on selling price*	
	$0.48 \times 0.20 \times 100 = 9.6\%$ (–)	$0.26 \times 0.158 \times 100 = 4.1\%$ (–)
Change of profit for the exporter	**Factor Exchange rate**	
	$(\frac{100 + 15.1 - (100 - 24)}{100 + 15.1}) \times 100 - 24 = 9.97\%$ (+)	$(\frac{100 + 96.7 - (100 - 25)}{100 + 96.7}) \times 100 - 25 = 36.7\%$ (+)
Decrease of selling price	*Effect on selling price*	
	$100 - (\frac{100 - (24 + 9.97)}{100 - 24}) \times 100 = 13.1\%$ (–)	$100 - (\frac{100 - (25 + 36.7)}{100 - 25}) \times 100 = 48.98\%$ (–)
Decrease of selling price	**Combined effect on selling price**	
	13.5% (–)	34.1% (–)

Alternatively, businesses can sacrifice the additional development of the profit margins (if available) so as to reduce the selling price of the product. For example, in Russia, due to the effect of the exchange rate, the exporter, if locates manufacturing in the country, could increase the profit in the national currency as much as by 36.7% by 2020. That is why businesses can use this abandoned volume of the profit for the purpose of lowering the enhancement of selling price from +14.86% to –34.1% (+14.86 – 48.98 = –34.1; **Table 3**). Concerning China, the offset of selling price change by the profit from the exchange rate could be not so significant (from –0.4% to –13.5%; –0.4 – 13.1= –13.5; **Table 3**). On the whole, the combined effect of all factors on the selling price shows that the anticipated rate of its decrease is higher in Russia (–34.1%) than in China (–13.5%).

In conclusion, it is essential to note that few studies have investigated the phenomenon of manufacturing nearshoring and this is particular the case for Russia. This research contributes to the fields of nearshoring with an individual contribution to the case of Russia. This study adds to the theory by analyzing how changes in a popular offshore location could require reconsideration of previous manufacturing location decisions and alter the direction for future decisions. The managerial implications of such results are of course significant. A manufacturing relocation process has been ongoing in the last decades, resulting in that an enormous amount of manufacturing has been moved from developed countries to China to achieve cost reductions. In this study, it is shown that wage growth might deprive manufacturing in China from its main competitive advantage of low labor costs. The growing wage rates naturally contribute to the prime cost that is aggravated by the potential inflation, which, in turn, limit the margin in the selling price. The cumulative effect of all extra costs can aggregate such an amount that, in the foreseeable future, companies would need to relocate manufacturing to new locations with a more favorable environment. One option could be to reshore manufacturing to nearby countries like Russia. This possible development also needs to be considered in all present offshoring decisions.

As in all research, it is important to acknowledge its limitations. One limitation of this study is that only a few factors have been considered in the analysis (i.e., labor cost, inflation, exchange rate, and labor productivity). In order to thoroughly review the motivations behind manufacturing relocation from China, future studies should extend the review to include additional factors, such as import/export costs, direct material costs, energy costs, taxes, as well as logistics costs. The logistics costs is dependent on the available (existing and developing) transportation infrastructure. The increased investments in both China and Russia (some even joint) in the development of transportation corridors in the Eurasian area may in the future reduce the logistics costs and favor European manufacturing relocation to other regions such as the Baltic region or more distant regions like Russian Far East.

REFERENCES

Ancarani, A., Di Mauro, C., Fratocchi, L., Orzes, G., and Sartor, M. (2015). Prior to reshoring: A duration analysis of foreign manufacturing ventures. *International Journal of Production Economics*, 169, pp.141 – 155.

Arlbjørn, J. S., and Mikkelsen, O. S. (2014).Backshoring manufacturing: Notes on an important but under-researched theme. *Journal of Purchasing and Supply Management*, 20(1), 60 – 62.

Bailey, D., and De Propris, L. (2014). Manufacturing reshoring and its limits: the UK automotive case. *Cambridge Journal of Regions, Economy and Society*, 7(3), pp.379 – 395.

Brennan, L., Ferdows, K., Godsell, J., Golini, R., Keegan, R., Kinkel, S., and Taylor, M. (2015). Manufacturing in the world: where next?.*International Journal of Operations & Production Management*, 35(9), pp. 1253 – 1274.

Capello, R., Caragliu, A., and Fratesi, U. (2015). Global trends and the economic crisis: Future alternative European growth strategies. Technological Forecasting and Social Change, 98, pp. 120 – 136.

CBO (2016). Total Economy Database. Available at URL: https://www.conference-board.org/data/economydatabase/index.cfm?id=27762 Retrieved: 04.08.2016.

Ellert, R. (2015). Reshoring, off-shoring. Same result for the US economy? Linkedin.com. Available at URL: http://onshoreadvisory.com/2015/03/31/reshoring-off-shoring-same-result-for-the-us-economy/ Retrieved: 02.05. 2016.

Feiwel, G. R. (Ed.). (1989). *Economics of Imperfect Competition and Employment: Joan Robinson and Beyond*, MacMillan, London.

Foerstl, K.,Kirchoff, J. F., and Bals, L. (2016). Reshoring and insourcing: drivers and future research directions. *International Journal of Physical Distribution & Logistics Management*, 46(5), pp. 492 – 515.

Fratocchi, L., Di Mauro, C., Barbieri, P., Nassimbeni, G., andZanoni, A. (2014). When manufacturing moves back: Concepts and questions. *Journal of Purchasing and Supply Management*, 20(1), pp. 54 – 59.

Globrat (2016).CPI in Russia. Available at URL: http://www.global-rates.com/economic-indicators/inflation/consumer-prices/cpi/russia.aspx Retrieved: 03.05. 2016.

Gray, J.V., Skowronski, K., Esenduran, G., and Johnny Rungtusanatham, M. (2013). The reshoring phenomenon: what supply chain academics ought to know and should do. *Journal of Supply Chain Management*, 49(2), pp. 27–33.

Gylling, M., Heikkilä, J., Jussila, K. and Saarinen, M. (2015). Making decisions on offshore outsourcing and backshoring: A case study in the bicycle industry. *International Journal of Production Economics*, 162, pp.92 – 100.

Hadjimarcou, J., Brouthers, L. E., McNicol, J. P., and Michie, D. E. (2013). Maquiladoras in the 21st century: Six strategies for success. *Business Horizons*, 56(2), pp. 207 – 217.

Harrington, L. (2011). Is US manufacturing coming back? Inbound logistics. Available at URL: http://www.inboundlogistics.com/cms/article/is-us-manufacturing-coming-back/ Retrieved: 03.05. 2016.

Hilletofth, P. (2010).*Demand-supply Chain Management,* Doctoral thesis, Chalmers University of Technology, Gothenburg, Sweden.

Hilletofth, P. (2011). Demand-supply chain management: Industrial survival recipe for new decade, *Industrial Management and Data Systems*, 111(2), pp. 184–211.

Hwang, Y. S., Hwang, Y. S., Chen, D., and Chen, D. (2016). A reversal theory in internationalization: case of Korean

jewelry inside China. *Chinese Management Studies*, 10(1), pp. 82 – 101.

Isaev, A. (2016). RF - China: Can the new format of economic cooperation established between the two countries? Information-analytical agency 'EastRussia'. Available at URL: http://www.eastrussia.ru/material/dobrososedskaya-kooperatsiya/ Retrieved: 24.06. 2016.

Javalgi, R. R. G., Benoy Joseph, W., Granot, E., and Gross, A. C. (2013). Strategies for sustaining the edge in offshore outsourcing of services: the case of India. *Journal of Business & Industrial Marketing*, 28(6), pp. 475 – 486.

Kinkel, S. (2012). Trends in production relocation and backshoring activities: Changing patterns in the course of the global economic crisis. *International Journal of Operations & Production Management*, 32(6), pp. 696 – 720.

Kinkel, S. (2014).Future and impact of backshoring – Some conclusions from 15 years of research on German practices. *Journal of Purchasing and Supply Management*, 20(1), pp. 63 – 65.

LeBeau, P. (2013). U.S. Manufacturing No More Expensive Than Outsourcing To China By 2015: Study, The Huffington Post. Available at URL: http://www.huffingtonpost.com/2013/04/19/china-manufacturing-costs_n_3116638.html Retrieved: 02.05. 2016.

Martínez-Mora, C. and Merino, F. (2014). Offshoring in the Spanish footwear industry: A return journey?.*Journal of Purchasing and Supply Management*, 20(4), pp. 225 – 237.

Panova, Y. and Hilletofth, P. (2016).Infrastructure project portfolios for sourcing nearshoring of manufacturing to Russia.*Russian Journal of Logistics and Transport Management*, 3(1), pp. 52 – 63.

Pearce, J. A. (2014). Why domestic outsourcing is leading America's reemergence in global manufacturing. Business Horizons, 57(1), pp. 27 – 36.

Petrov-Shikotihin, A. (2003). The massive increase of salaries as an impetus to economic growth.*International Journal 'Problems of the Theory and Practice of Management'*, Vol.5. Available at URL: http://vasilievaa.narod.ru/11_5_03.htm Retrieved: 29.06. 2016.

Protsenko, A. (2016). Network companies have been offered to place the production in Russia. The Russian Gazette. Available at URL: https://rg.ru/2016/04/05/setevym-kompaniiam-predlozhili-razmeshchat-proizvodstvo-v-rossii.html Retrieved: 24.06. 2016.

RFSSS (2016).Databases, Russian Federation State Statistics Service. Available at URL: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/wages/ Retrieved: 03.05. 2016.

SNB (2016). Swedish National Bank. Monetary policy report. Available at URL: http://www.riksbank.se/Documents/Rapporter/PPR/2016/160421/rap_ppr_160421_eng.pdf Retrieved: 07.05. 2016.

Scott, A. J. (2006). The changing global geography of low-technology, labor-intensive industry: clothing, footwear, and furniture. *World Development*, 34(9), pp. 1517 – 1536.

Schuh, A. (2014). Strategic Responses to the Global Financial and Economic Crisis in Central and Eastern Europe – The Foreign Multinational Company Perspective. In Van Tulder, R., Verbeke, A., and Strange, R. (Eds.), *New Policy Challenges for European Multinationals*, Emerald Publishing, UK.

Slepniov, D., Brazinskas, S., and VejrumWæhrens, B. (2013). Nearshoring practices: an exploratory study of Scandinavian manufacturers and Lithuanian vendor firms. *Baltic Journal of Management*, 8(1), pp. 5 – 26.

Tate, W. L. (2014). Offshoring and reshoring: US insights and research challenges. *Journal of Purchasing and Supply Management*, 20(1), pp. 66 – 68.

Tate, W. L., Ellram, L. M., Schoenherr, T., and Petersen, K. J. (2014).Global competitive conditions driving the manufacturing location decision.*Business Horizons*, 57(3), pp. 381–390.

Theyel, G. (2012). Production location and sustainability.*International Journal of Agile Systems and Management,* 5(3), pp. 367 – 275.

Tradecon (2016).Databases.The Trading Economics. Available at URL: http://www.tradingeconomics.com/ Retrieved: 03.05. 2016.

Uluskan, M., Joines, J. A., and Godfrey, A. B. (2016).Comprehensive insight into supplier quality and the impact of quality strategies of suppliers on outsourcing decisions.*Supply Chain Management: An International Journal*, 21(1), pp. 92 – 102.

Van Tulder, R., Verbeke, A., and Strange, R. (Eds.). (2014). *International Business and Sustainable Development*, Emerald Publishing, UK.

Wiesmann, B., Snoei, J.R., Hilletofth, P., and Eriksson, D. (2017).Drivers and barriers to reshoring: A literature review on offshoring in reverse.*European Business Review*, 29(1), pp. 15–42.

Woolhouse, M. (2015). Some offshored manufacturing jobs return to US, The Boston Globe. Available at URL: https://www.bostonglobe.com/business/2015/07/26/some-companies-bringing-manufacturing-back-mass-from-overseas/GdJ3H5CGA9d8QFaFI6BAUN/story.html Retrieved: 03.05. 2016.

Yulia Panova is working as an Associate Professor in National Research University Higher School of Economics and Emperor Alexander I St. Petersburg State Transport University, where she obtained Russian Candidate of Technical Sciences' Degree. Recently, she completed PhD research, concerning dry port public-private partnership investments and risks management methods, which was publicly defended in Lappeenranta University of Technology (Finland). Miss Panova holds several international publications in the field.

Per Hilletofth is a Professor of Operations and Supply Chain Management at Jönköping University in Sweden. He holds a PhD in Technology Management and Economics (with specialization in Logistics and Transportation Management) from Chalmers University of Technology (Sweden). His research focuses on operations and supply chain management with an emphasis on strategy, shoring, sourcing, demand and supply planning, information systems, and sustainability. He has published articles in various international journals including *Industrial Management and Data Systems*, *Expert Systems with Applications*, *International Journal of Shipping and Transport Management*, and *European Business Review*. He is currently in the Editorial Board for *Industrial Management and Data Systems*, *World Review of Intermodal Transportation Research*, *International Journal of Logistics Economics and Globalization*, and *International Journal of Management in Education*.