Contents

Editorial ................................................................. 5
Adam Szyszka

The Innovation-Driven Impact on Economic Structure Transition.
The Case of China ...................................................... 9
Hailun Zhang, Sheng Xu

Long-Term Comparative Advantages of the Eurasian Economic Union
Member States in International Trade ................................... 27
Krzysztof Falkowski

Is Intra-Industry Trade Specialization a Precondition to Business Cycle
Synchronization When Joining the Euro Area? The Case of Poland .......... 50
Elżbieta Kawecka-Wyrzykowska

Examining the Behavior of Credit Rating Agencies Post 2008 Economic
Turmoil ................................................................. 61
Çağrı L. Uslu

A Dyadic Perspective on Determinants of Entry Choices in the Global
Hospitality Industry ...................................................... 77
Kun Yang, John D. Buschman

Word-Of-Mouth in Social Media. The Case of Polish Tourist Industry .......... 93
Bartosz Deszczyński

List of Reviewers 2017: Issues 53(1)–53(4) ........................................... 115
It is time to welcome our readers to the last issue of the *International Journal of Management and Economics* in 2017. This time we offer four papers in international economics and two in management, namely in hospitality and tourism. Five of them are based on empirical research and one is an original conceptual work. From the geographical perspective, one paper is on China, one on Eurasia region, another two on the Eurozone and Poland, and there are also two papers of general international orientation.

In the first article, entitled “The Innovation-Driven Impact on Economic Structure Transition. The Case of China”, Hailun Zhang and Sheng Xu show the role of hi-tech industries in changing composition of Chinese economy. Although China’s tertiary industry has been growing, the proportions of primary industry and secondary industry are still relatively higher compared to developed countries. It is argued that more innovation can further expand the tertiary industry transforming China’s economic structure to a more advanced pattern.

Krzysztof Falkowski in his paper “Long-Term Comparative Advantages of the Eurasian Economic Union Member States in International Trade” focuses on a relatively new integration block comprising Belarus, Kazakhstan, Russia, and also Armenia and Kyrgyzstan. He attempts to identify the Union’s long-term international comparative advantages within four basic groups of goods according to the OECD classification of manufacturing industries based on technology intensity. He concludes that the EAEU countries lack competitiveness in the high-technology, but fare the best in the medium-low-technology category. The author attributes this finding to the resources-based character of these economies.

The third paper, “Is Intra-Industry Trade Specialization a Precondition to Business Cycle Synchronization When Joining the Euro Area? The Case of Poland”, is by Elżbieta Kawecka-Wyrzykowska. First, taking the theoretical approach, the author argues that business cycle convergence and the cost of the lack of an autonomous monetary policy depend on intra-industry trade (IIT) intensity rather than on general trade growth. Later, using the IIT index as a measure of synchronization of business cycles, she attempts to assess the readiness of the Polish economy to join the Eurozone. The observation that the IIT intensity in Poland is already relatively high and it continues to grow, particularly
with partners from the Eurozone, is a sign of increasing complementarity of the Polish economy with the monetary union, hence reducing the probability of asymmetric shocks.

The fourth article is dedicated to the practices of credit rating agencies after the last financial crisis when they were frequently accused of missing warning signs, misunderstanding of risk factors, over-optimism, conflict of interest, and other wrongdoing. Çağrı L. Uslu, in his paper “Examining the Behavior of Credit Rating Agencies Post 2008 Economic Turmoil”, shows a significant change in attitude of credit rating agencies in the period after the financial crises. He demonstrates an increasing conservative nature of the three major credit rating agencies i.e., Standard & Poors, Moody’s, Fitch, and attributes it to two possible sources. First, quantitative (undisclosed) models used for scoring may include new macroeconomic variables or changed weights of the already existing macroeconomic variables producing more cautious results. Second, reputational concerns may give more space to subjective qualitative assessments rather than to purely quantitative outcomes of macroeconomic models, leading to more conservative scores.

The next paper, “A Dyadic Perspective on Determinants of Entry Choices in the Global Hospitality Industry”, is by Kun Yang, John D. Buschman. It discusses the firm-level determinants of entry choices for international hotel companies, contrasting acquisition with management and franchise contracts. This is an original conceptual work based on the Resource Dependence Perspective and Appropriability Theory accompanied with fair illustrative examples and real business cases. The authors point out that brand equity, relatedness of products and market segmentation, partner-specific knowledge of at least two hotels, international experience, and the duration of proprietary knowledge impact hotel companies’ entry choices into a foreign market. In addition, the paper proposes that there exists a sequence of entry choices such that acquisition is likely to happen after the management contract expires and when the franchisors’ or management companies’ proprietary knowledge attenuates, and contract activity is likely to happen again post-acquisition once the management company has established a new form or a higher level of proprietary knowledge.

The final paper of this issue also deals with tourist industry, but from the side of a new, attention-grabbing marketing technique. “Word-Of-Mouth in Social Media. The Case of Polish Tourist Industry” was written by Bartosz Deszczynski. The author’s main finding is that even if online marketing, and social media in particular, is currently a very fashionable way of communication with customers, in practice online channels still seem to be not fully exploited by many companies.

This is the last issue of the International Journal of Management and Economics in 2017. As usually on this occasion, at the end of the issue, we list the reviewers who helped us assess over 100 submissions considered for publication over the past year (Vol. 53, Iss. 1–4). We would like to thank them cordially for their time and expertise in keeping our academic standards high. We express our appreciation also on behalf of the many authors who benefited from inspiring remarks and suggestions how to improve their articles.
Traditionally, at the turn of the year, I would like to wish all readers, authors, and other members of our academic community a Happy New Year 2018. Please accept our Best Wishes and Seasonal Greetings. Stay with us for more scientific reports and inspiring papers in further issues of the coming new volume.
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The Innovation-Driven Impact on Economic Structure Transition. The Case of China

Abstract

The research measures the driving force of innovation in economic structure transition. In order to change the pattern of economic development, China is implementing a strategy of innovation-driven development. China’s capacity of innovation has been increasing, especially since 2012, and China’s innovations have taken a leap-forward development. Nowadays, innovation has become a main driving force in China’s economic development and hi-tech industries particularly make a great contribution. Although China’s tertiary industry has been dominant and its share in three industrial sectors has been exceeding 50% since 2015, a problem still exists in China’s economy that the proportions of primary and secondary industries are relatively higher compared with developed countries. In this paper we use PLSR model to measure the impact of innovation on China’s economic structure transition. It is found that innovation can expand the tertiary industry through shrinking the proportions of primary and secondary industries, transforming China’s economic structure into a more advanced pattern. Additionally, China is also devoting itself to the “Belt and Road Initiative”, which should be combined with China’s domestic innovation-driven development and realize sustainable development of economy worldwide.

Keywords: innovation-driven impact, economic structure transition, tertiary industry, PLSR model, “Belt and Road Initiative”, sustainable development

JEL: O39, L16
Introduction

Schumpeterian endogenous growth theory refers to the incentives of technological knowledge for a long-run economic growth. In Schumpeter’s view, creative destruction generated from innovative activities can promote technological advancement, which has a profound influence on economic growth [Aghion, Howitt, 1989]. Under the pressure of economic downturn, China is carrying out a new pattern of economic growth, which is the strategy of innovation-driven development. The process of economic growth can be divided into four phases [Porter, 1990]. Now, China is on the phase of transition into an innovation-driven country.

Though development experiences vary over time and across countries, there is sufficient uniformity within them for the industrial structure transformation to reveal consistent patterns of modern economic growth [Syrquin, Chenery, 1989]. William Petty and Colin Clark classified the whole industries into three sectors, which are primary industry, secondary industry and tertiary industry, respectively. According to Petty and Clark’s theory, with the development of economy, the proportion of primary industry decreases first, which results in the increasing proportion of secondary industry, and when economy puts forward development, the proportion of tertiary industry increases relatively. The proportion changes in three industrial sectors mean the evolution of industrial structure, and tertiary industry should account for the highest proportion in an advanced structure.

Endogenous and exogenous factors drive simultaneously the process of innovation. From an endogenous perspective, innovation defines intrinsic motivation that determines individual creativity, which is also influenced by work environment [Amabile, 1997]. Innovation is a learning process and a mechanism of creating new knowledge through solving problems [Chesbrough, 2003]. Also, innovation can be seen as an exogenous process or a by-product of investment in machinery and equipment [Grossman, Helpman, 1991]. As a result of dual properties of innovation, an enterprise not only is taking the role of “innovation-makers”, but also is being forced to act as an “innovation-taker” [Ghezzi et al., 2015], so it acquires innovation exogenously and drives innovations generated endogenously.

Based on microcosmic theory, the technological advancement and innovation can shape the industrial structure. As early as in the 1970s, the scale of manufacture in western countries has been cutting down, which can be attributed to the emergence of new computer-based technology that improved the quality and productivity of small and medium scale businesses [Bo, 1989]. Industrial entry is often used as a vehicle for introducing new technology [Geroski, 1995], and a good environment can also help innovation to occur across the economic spectrum and for a robust and sustainable industrial base, which is aimed at the industrial transition [Lahorgue, Cunha, 2004]. Furthermore, technological innovation can intensify the competition between new industries and the old ones and
form a brand-new industrial system through process and production innovations [Klepper, 2002]. At the industrial level, the structural shifts can result from the diffusion of knowledge such as technologically sophisticated methods of production [Peneder, 2003]. But there are a few significant differences between service and manufacturing industries in terms of the impact of different types of innovation strategies [Evangelista, Vezzani, 2010].

Based on macrocosmic theory, innovation plays a role in changing economic structure. South Korea and Taiwan are catching up with technology and are transforming into innovation-based economies [Wang, 2007]. As an emerging developing country, China needs to transform the input-based economic growth pattern into an innovation-based one, and the new economic growth driven by innovation is mainly initiated by the transmutation of entrepreneurship [Zheng, Hu, Wang, 2008]. In terms of Greece’s currently planned institutional reforms for limited economic growth, it should add innovative sectors to its economic structure to strengthen its competition in industry [Herrmann, Kritikos, 2013]. Anyway, innovation is the key for the world to fight the economic crisis, and innovation policy of structural shifts towards service-related industries can stimulate economies [Policy responses..., 2009].

China has entered an important period of economic development. This paper focuses on the strategy of China’s innovation-driven development and attempts to measure the impact of innovation on the transition among three industries. It will answer the questions: How does the development of innovation look like in China? Is the innovation driving the economic structure effectively?

**Theoretical Hypothesis**

This research focuses on technological innovation on the basis of science and technology. There are three main factors in innovation-driven process, including innovation circumstance, innovation input and innovation output. Specifically, innovation mainly offers basic support such as manpower, material resources and infrastructure. Once inputs are put into the innovation process, outputs can be produced that can be converted into driving force of economic and social progress. Specifically, one country can stimulate technological innovation when its economy, education and informatization reach a certain level. Besides, good situation of economy and society provides conditions and basis for development. The government invests in R&D conducted on tertiary universities and in research institutions, cultivating lots of creative talents and also encouraging Industry – University – Research institutions collaboration. After a period of accumulation of knowledge, technology and experience, innovations will appear such as research papers and invention patents, a part of which can be converted into enterprises’ production technology while other parts can be used to produce new products through business transformation. Eventually, one can achieve sustainable development of economy based on innovation.
Economic structure transition is based on industrial structure transition and upgrading, namely expanding the tertiary industry with the simultaneous limiting of primary and secondary industries, and also increasing added value of productions in all industries. Therefore, economic structure transition can be conducted two-dimensionally. Productivity of primary industries should be restrained by redistributing resources while the development of secondary and tertiary industries should be put forward, especially new hi-tech industries, which can achieve the goal of economic structure transition from industries based on the input of materials. Besides, all industries should increase the efficiency of productivity and meanwhile cut down production costs by pursuing technological research, which can improve value of production and strengthen enterprises’ core competences, and promote the optimization of industrial productivity. Actually, both industrial restructuring and industrial upgrading rely on technological advancement. Under the restraint of production factors, it is necessary to transform the mode of production and increase the production efficiency with high technology to maximize resource utilization, by which inter-industry and intra-industry can reach Pareto efficiency and economy a sustainable development.

Innovation and economic structure transition are an interactive whole rather than two separate systems. Economic structure transition needs the support of science and technology, which can be gained from foreign countries and also can be developed by enterprises themselves. In fact, it is difficult to bring in core cutting-edge technology from other countries, so the feasible and fundamental way is that enterprises increase their own independent innovation capacity, and then the new technology can be learned across the whole industry by industrial agglomeration, which can promote the industrial optimization and achieve the continuous development of economy. Based on the analysis of the relationship between innovation and economic structure transition, hypothesis of this paper is as follows:

H: Innovation has a positive impact on economic structure transition, which leads the optimization of industry and helps one to achieve the sustainable development of economy.

China’s Innovation-Driven Development

In 2016, China drafted Outline of the National Strategy of Innovation-Driven Development. It identifies three stages for implementing the strategy of innovation-driven development, which is proposed in 18th CPC National Congress, including becoming an innovative country by 2020, moving to the forefront of innovative countries by 2030 and being an innovation power by 2050. The general outline is a petition for industrial structural transformation.

For a long time, China had a reputation of a big manufacturing country and has been a major trade power. An interesting thing is that commodities made in China are being
sold worldwide, while many goods imported from foreign countries sold in China are made in China. But with the increase of salary of Chinese labor force, the advantage of labor-intensive industries in China has not been obvious recently, and lots of manufacturing factories are being moved to Eastern Asian countries. In the meantime, pollution from low-end industries is destroying health of Chinese citizens. As can be seen in Figure 1, the trend of China’s GDP growth rate is slowing down, which indicates that China has heavier downward pressure on domestic economy. However, the traditional driving force generated by investments, consumption and export has been undermined by fast change of worldwide economic situation.

**FIGURE 1.** GDP growth rate of China (at a constant price) in the years 2006–2015

As the economy enters a new standard, China faces the risk of “middle-income trap”. Internationally, it’s a problem of many countries because of inferior economic structure. Few countries such as Japan and Singapore in Asian zone managed to get through middle-income trap due a fact that they changed economic development mode based on innovation. It is time for China to develop a new engine of innovation in order to change development pattern and upgrade industries, and finally realize a sustainable economic growth. In recent years, China’s innovation-driven development has made a progress with the rapid expansion of some hi-tech industries lead by network industry. In the future, main tasks of industries in China will include promoting ability of self-innovation, mastering core technologies, producing high value-added products and propelling industries to a high-end level.

Since 2011, NBS of China has begun to publish China Innovation Index (CII), which shows China’s innovation power every year.
The fact that China’s innovation power is increasing gradually can be seen in Figure 2. Over 10 years, China’s innovation power has increased 1.7 times compared to 2005. Obviously, the innovation output index increases the most among the 4 sub-indices, growth rate of which exceeds that of innovation index. It means that innovation output is the most important factor for the growth of China’s innovation. However, the trends of innovation input and innovation circumstance are similar and always maintain the same level with innovation index, while the growth of innovation effect is the slowest, which drags down the whole innovation development.
By using original innovation index from NBS of China, the method of cluster analysis can divide China’s innovation development into phases, as shown in Figure 3. Eleven-years process of China’s innovation-driven development is divided into three stages. Phase 1 – from 2005 to 2008, phase 2 – from 2009 to 2011 and phase 3 – from 2012 to 2015. The distance between phase 1 and phase 2 is relatively small, which means that these two phases have similar characteristics. But there is a big difference between first two phases and phase 3, which suggests that the year 2012 was a turning point in the process of China’s innovation development. The period from 2005 to 2011 is primary phase of innovation development, but since 2012, China’s innovation capacity has achieved a leap-forward promotion and China’s innovation has been developing rapidly.

China’s 12th five-year plan was implemented in 2011–2015 and it emphasized that enterprises in China should speed up the increase of innovation capacity and convert technological outcome into real productivity force. It also pointed out that China’s economy should rely on science and technology as driving force. China’s government has stressed the importance of innovation in industrial production and economic development and many documents were published afterwards, including 12th industrial technology innovation plan, 12th national independent innovation capacity building plan, 12th national major innovation based construction plan and so on. The year 2011 is the first one of China’s 12th five-year plan, relative innovation plan published and implemented since 2012. Therefore, China’s innovation capacity has rapidly increased since 2012 so that innovation development has witnessed substantial progress from 2012 to 2015, which is a brand-new and significant period of development.

China’s Scientific and Technological Development

The process of innovation is underpinned by science and technology. It needs multiple factors ranging from research and education to industrial production, which are worth paying more attention to, in order to investigate the development of China’s innovation. We analyze the income of hi-tech industry, expenditure on education and R&D in order to measure their development.

As can be seen in Figure 4, income of hi-tech industry, expenditure on education and R&D have been increasing to a different degree over these eleven years. Especially, income of hi-tech industry makes dramatic progress and it increases more than three times compared with the 2005. Conversely, the increases in the expenditure on education and R&D are not apparent. The expenditure on education and R&D are two key inputs of innovation, while income of hi-tech industry can be seen as an output of the whole innovation process, which indicates that the conversion rate of input to output is high in China’s innovation process and confirms that China’s innovation is efficient.
Hi-tech industries contribute to China’s innovation-driven development the most. Industries connect the research, patents and consumer market, which can converse the outcomes from research institutes and universities into real productivity. So, it is hi-tech industry that is playing the most important role in the process of China’s innovation-driven development. China’s hi-tech industries are categorized into five sectors including pharmaceuticals, aircraft and spacecraft, electronics and communication equipment, computers and office equipment as well as medical equipment and measuring instruments. The practice of China’s innovation-driven strategy provides hi-tech industries with a broader space for development.
Figure 5 shows the growth of China’s hi-tech industry and GDP at current prices. It can be seen that the development of China’s hi-tech industry has almost identical trend with GDP, namely that they always increase and decrease at the same time in the period of 2006–2015. At first, the growth of hi-tech industry fell behind China’s GDP from 2007 to 2009 and also it had a similar downward trend with GDP. In 2011, China’s hi-tech industry began to develop rapidly, and has been exceeding the growth of GDP for 5 years. In fact, the butterfly effect of financial crisis brought severe damage to China’s economy, which compelled China to transform the mode of economic development. Since then China has found a way to realize continuous growth of economy drove by science and technology. Under the background of innovation development, China’s hi-tech industry seized the opportunity and has advanced with leaps and bounds. Until 2015, China had 29,631 hi-tech enterprises and 146 hi-tech industrial development zones were located across the whole country.

Innovation and Economic Structure Transition

China’s Economic Structure

Fundamentally, innovation-driven development was proposed and upgraded as a national major strategy for economic structure transition under current situation of China’s New Normal. The main task for economic structure transition is to enlarge the proportion of tertiary industry. Tertiary industry is the foundation of China’s innovation-driven strategy, with high-tech industry being the leader. As an important sector in modern tertiary industry, hi-tech tertiary industry has strong innovation ability and development potential. After the implementation of “Guidance of State Council on Accelerating the Development of Hi-tech Tertiary Industry” in 2011, hi-tech tertiary industry is playing more and more important role in promoting industrial structure transition. Unlike hi-tech tertiary industry, China’s entire tertiary industry is underdeveloped, and accounts for 50% of the whole industry, while its proportion in developed countries can reach 70% and even 80%.

It can be seen in Figure 6 that proportions of China’s three industries have been changing continuously since 2005. Over eleven years, primary industry had always the lowest share, while both secondary and tertiary industries made great contributions to China’s economy. Obviously, the proportion of tertiary industry has increased steadily and even exceeded secondary industry to be the dominant industry in whole industrial economy during recent years. The development of tertiary industry has fell behind the secondary industry until 2013, and afterwards tertiary industry has surpassed secondary industry and the gap on proportion between these two industries has widened. In 2015, the proportion of tertiary industry increased to 50% but it is relatively lower compared
with developed countries, which means China's tertiary industry and economic structure transition have space for improvement. With innovation-driven development, it is still a top priority for China at the current stage to further increase the proportion of tertiary industry in order to optimize the economic structure.

**FIGURE 6. Proportions of China's three industries**

![Bar chart showing proportions of China's three industries from 2005 to 2015.](image)

*Source: NBS of China.*

**Innovation-Driven Impact on Economic Structure Transition**

**Variables and Data**

According to the theory of William Petty and Colin Clark, increase of the proportion of tertiary industry with the development of economy is inevitable. In terms of proportions of three industries, China's aim at economic structure transition is to increase share of tertiary industry with the simultaneous decrease of the secondary industry, so the ratio of tertiary industry to secondary industry can influence the innovation-driven impact of economic structure transition. In our calculations \( y_1, y_2, y_3 \) and \( y_4 \) represent primary's, secondary's, tertiary's industries proportions and the innovation-driven impact of economic structure transition respectively, while \( x \) represents innovation-driven index.

China's Economic Structure Transition (Figure 7) has accelerated since 2011, when China's economy grew under economic downward pressure. It is obvious that China's economic structure has upgraded with the increasing proportion of tertiary industry compared with secondary industry, which is the goal of China's innovation-driven strategy. Nowadays, the levels of China's innovation and economic structure transition are being improved simultaneously as can be seen in Figure 2 and Figure 7.
Correlation Between Innovation and Economic Structure Transition

Pearson correlation coefficient can be used to measure the closeness of relationships between proportion changes in three industries or economic structure transition and innovation.

TABLE 1. Pearson Correlation

<table>
<thead>
<tr>
<th></th>
<th>Primary Industry</th>
<th>Secondary Industry</th>
<th>Tertiary Industry</th>
<th>Economic Structure Transition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation</td>
<td>–0.922**</td>
<td>–0.904**</td>
<td>0.963**</td>
<td>0.931**</td>
</tr>
</tbody>
</table>

** Correlation is significant at 0.01 level (2-tailed).

Innovation has significant correlations with proportion changes in three industries and economic structure transition under 0.01 level. All absolute values of correlation above 0.9 indicate that innovation has strong correlations with changes in three industries and economic structure transition. A closest relationship exists between innovation and tertiary industry, while the correlation of innovation with economic structure transition is also relatively high, which means that innovation has significant impact on changing the proportions of three industries and transiting economic structure.
Generally, innovation adversely affects the proportion changes in primary and secondary industries, while oppositely it plays positive role in changing the proportion of tertiary industry and economic structure. In other words, with the increase of innovation, the proportion of primary and secondary industries will shrink but tertiary industry will scale up and level of economic structure transition will improve. Therefore, innovation is leading the development of China’s economy in a right direction, which is upgrading China’s economic structure transition. Namely, expanding tertiary industry with the reduction of primary and secondary industries, which not only maintains an advanced economic structure in China, but also bridges the gap between China and developed countries in the proportion of tertiary industry.

Measurement of Innovation-Driven Impact

Pearson correlation coefficient reflects the closeness of correlation between innovation and economic structure transition, but it can’t measure the specific impact of innovation on economic structure transition. Data are selected for 2005 to 2015 period, a total of eleven years, and the samples are insufficient to build a common regression model which would cause spurious regression, so it is necessary to apply a new method suitable for small sample study.

PLSR is also Partial Least Squares Regression and it combines several statistical methods including principal components analysis (PCA), correlation analysis and linear regression, which can regress a model by using a small sample. If there are \( p \) dependent variables \( y_1, y_2, \ldots, y_p \) and \( m \) independent variables \( x_1, x_2, \ldots, x_m \), first principal component \( t_1 \) can be extracted from independent variables and similarly another first principal component \( u_1 \) can also be extracted from the set of dependent variables, and the two first principal components should have the closest correlation. Afterwards, we build a regression equation by using \( y_1, y_2, \ldots, y_p \) and \( t_1 \). If the precision of the regression is up to a standard then we stop the calculation process, otherwise we continue to extract the second principal component until the precision can be up to a standard. \( R \) components are extracted from independent variables, \( t_1, t_2, \ldots, t_r \), firstly building the regression equation by using \( y_1, y_2, \ldots, y_p \) and \( t_1, t_2, \ldots, t_r \) and then converting it into the model with \( y_1, y_2, \ldots, y_p \) and \( x_1, x_2, \ldots, x_m \), which constitutes a PLSR model.

Main factors that promote economic structure transition include GDP, labor force, technology, domestic investment and FDI. However, China Innovation Index includes sub-indices like GDP, labor and technological advancement but there is no index of investment, so models here should include variables of Fixed Asset Investment (FAI) and Foreign Direct Investment (FDI) other than CII.

The model equation is conducted as follows:

\[
Y = \alpha + \beta X + \lambda FAI + \gamma FDI
\] (1)
where variables are all in the form of matrix, namely, \( Y = [y_1, y_2, y_3, y_4]^T, X = [x], FAI = [FAI] \) and \( FDI = [FDI] \).

Likewise, standard model can be established as equation (2).

\[
\tilde{Y} = \alpha + \beta \tilde{X} + \lambda FAI + \gamma FDI
\]

where \( \tilde{Y} = [\tilde{y}_1, \tilde{y}_2, \tilde{y}_3, \tilde{y}_4]^T, \tilde{X} = [\tilde{x}], FAI = [FAI] \) and \( FDI = [FDI] \).

Variables in models have different units so firstly we use Z-score method to process all data for standard forms, then regress models by PLSR. Coefficients of variables in standard equations are shown in Table 2.

**TABLE 2. Standard Coefficients**

<table>
<thead>
<tr>
<th>( \tilde{Y} )</th>
<th>Constant</th>
<th>( \tilde{X} )</th>
<th>FAI</th>
<th>FDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \tilde{Y}_1 )</td>
<td>0</td>
<td>-0.3237</td>
<td>-0.3249</td>
<td>-0.2934</td>
</tr>
<tr>
<td>( \tilde{Y}_2 )</td>
<td>0</td>
<td>-0.3085</td>
<td>-0.3096</td>
<td>-0.2796</td>
</tr>
<tr>
<td>( \tilde{Y}_3 )</td>
<td>0</td>
<td>0.3314</td>
<td>0.3326</td>
<td>0.3003</td>
</tr>
<tr>
<td>( \tilde{Y}_4 )</td>
<td>0</td>
<td>0.3186</td>
<td>0.3198</td>
<td>0.2887</td>
</tr>
</tbody>
</table>

Source: data is from calculation result of Matlab.

Then we convert all variables into original forms and real coefficients can be seen in Table 3.

**TABLE 3. Original Coefficients**

<table>
<thead>
<tr>
<th>( Y )</th>
<th>Constant</th>
<th>( X )</th>
<th>FAI</th>
<th>FDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>( Y_1 )</td>
<td>0.1275</td>
<td>-0.0001</td>
<td>-1.5788E-08</td>
<td>-1.0011E-09</td>
</tr>
<tr>
<td>( Y_2 )</td>
<td>0.5257</td>
<td>-0.0003</td>
<td>-3.8364E-08</td>
<td>-2.4328E-09</td>
</tr>
<tr>
<td>( Y_3 )</td>
<td>0.3468</td>
<td>0.0004</td>
<td>5.4144E-08</td>
<td>3.4326E-09</td>
</tr>
<tr>
<td>( Y_4 )</td>
<td>0.6018</td>
<td>0.0014</td>
<td>2.0843E-07</td>
<td>1.3212E-08</td>
</tr>
</tbody>
</table>

Source: data is from calculation result of Matlab.

The sign of innovation is the same as in the results of Pearson correlation analysis showed in Table 1, which indicates that PLSR models can also illustrate the correlation between innovation and industrial indices accurately. Specifically, the improvement of innovation has a negative impact on the scales of primary and secondary industries. When China’s innovation capacity increases by 1%, the proportions of primary industry and secondary industry decrease by 0.0001% and 0.0003%, respectively. Therefore, innovation can restrict
the development of secondary industry more than of primary industry. Oppositely, the advancement of China’s innovation has a positive impact on the proportion of tertiary industry and the process of economic structure transition. When innovation indices increase by 1%, the proportion of tertiary industry and the level of economic structure transition increase by 0.0004% and 0.0014%, respectively. It can be seen that innovation-driven impact promotes economic structure transition twofold i.e., by decreasing primary and secondary industries and at the same by increasing tertiary industry.

FAI and FDI have the similar impact on economic structure as innovation, which has negative impact on primary industry and secondary industry but positively influences tertiary industry and economic structure transition. In terms of absolute coefficients, those of FAI and FDI are remarkably smaller than coefficients of innovation in all of the models, which means that the impact of FAI and FDI on economic structure is weaker than that of innovation. In other words, China’s economic structure transition is mainly affected by the innovation and China’s innovation-driven strategy is efficient for economy’s development.

There is ambiguity about the optimum constitution of industrial structure. The proportion of three industries in the US, for an example, is about 1.3 : 20.7 : 78. At the same time, the proportion in China is approximately 10 : 40 : 50. Therefore, proportions of primary and secondary industries in China are too high and limit the expansion of tertiary industry, which is needed to improve the economic structure. The solution is to cut down the proportion of low-end industries. As can be seen in Table 3, innovation is playing an important role in decreasing the proportions of primary and secondary industries (it decreases the share of secondary industry to a greater extent). At the same time, innovation is driving the rapid development of tertiary industry and also has positive impact on economic structure transition. Therefore, China’s economic structure will be more advanced with the innovation-driven strategy.

Innovation-Driven Strategy and the B&R

The Belt and Road Initiative is a heated issue about economic development, which is proposed by China but will contribute to worldwide economic development. China’s President Xi raised the Silk Road Economic Belt when he visited Kazakhstan in September, 2013. He advocated to establish the 21st Century Maritime Silk Road when he spoke at a conference in Indonesia in the following month of the same year. The Silk Road Economic Belt and Maritime Silk Road constitute the Belt and Road Initiative, which illustrates that China is taking a bigger role in global affairs. The goal of China is to coordinate production with other countries and to boost their demand by taking the advantage of China’s excessive manufacturing capacity, and shifting China’s surplus manufacturing capacity to other countries which have relevant demands, so the Belt and Road Initiative is a way to develop mutual benefits and realize a win-win economic cooperation.
In fact, economic entities worldwide are still developing slowly under the shadow of financial crisis in 2008, while the Belt and Road Initiative provides them additional path of economic development. The Belt and Road Initiative includes five aspects i.e., policy coordination, unimpeded trade, financial integration, facilities connectivity and people-people bond. China has led to the establishment of Asian Infrastructure Investment Bank (AIIB) and created Silk Road Fund as the means to support the implementation of the Belt and Road Initiative and to reach those five goals. Many infrastructure projects are pursued in countries under the Belt and Road Initiative and are funded by AIIB, China Development Bank and the Export-Import Bank of China. Also, volumes of trade between China and those countries are increasing rapidly. In 2016, China's bilateral trade volume with countries on the new belt road amounted to about 1 trillion USD, which accounted for 25.69% of China's total volume of trade. Besides, China's FDI in 53 countries along the Belt and Road reached 14.5 billion USD, which made up 8.5% of China's total FDI. Furthermore, fifty-six economic and trade cooperation zones are being built in 20 countries by Chinese enterprises in order to facilitate commercial trade between China and these countries. China's Belt and Road Initiative is contributing to economic development of all countries along the road.

It is a fact that the Belt and Road Initiative can also stimulate worldwide economic development, but it is a narrow approach to focus on superficial economic growth rather than on the improvement in the quality of economic development, which was China's old economic development pattern. Nowadays, China is implementing innovation-driven strategy domestically and the Belt and Road Initiative externally at the same time. By analyzing China's innovation-driven impact, it can be found that innovation has a positive impact on economic structure transition, which is in favor of the out-of-date pattern change of economic development and also introduces new dynamics into economic development under economic downward pressure. With the Belt and Road, China and other countries constitute a community of shared interests and goals. As the pioneer of the Belt and Road Initiative, it is China's responsibility to advocate for the development of a sustainable economy with innovation as a driving force all over the world.

Domestically, China's innovation-driven development strategy is playing a key role in the China's economic development. Through the implementation of the Belt and Road Initiative, China attempts to strengthen cooperation in the field of technological innovation with other countries. In the Belt and Road Forum for international cooperation held in May, 2017, China's president Xi pointed out that the Belt and Road is a creative initiative, which would pave a technological innovation development path, and he insisted to build E-Road. Next, China will take four actions to promote innovation development of the Belt and Road, including the connection of technological talents, the joint establishment of technological laboratories, the cooperation of science and technology parks, and technology transfer. China's government promised that it would invite 2500 young scientists to do short-term research in China and also train 5000 scientific and technological workers
to implement the Belt and Road. China’s innovation-driven strategy is applied into the Belt and Road, which will promote regional economic structure transition along the Belt and Road. In the future, innovation will drive China and even the world to realize economic sustainability in more extensive global affairs, which is the essence of economic development, and which is also a goal of the Belt and Road Initiative.

Conclusions

This paper focuses on the impact of China’s innovation-driven development on economic structure transition based on their theoretical relationship. Characteristics of China’s innovation development are showed clearly through descriptive analysis. Furthermore, this paper uses PLSR model to measure the innovation-driven impact of economic structure transition and other main influencing factors also involved in the model, including FAI and FDI. China’s economy has been bound up with the world and it is not only carrying out innovation-driven development internally, but it also implements the Belt and Road Initiative externally. Thus, this paper also analyzes the necessity to combine innovation-driven development and the Belt and Road. The results of this paper are as follows:

a. China’s innovation capacity has been increasing since China Innovation Index was published in 2005. Elements of China’s innovation involve innovation circumstance, innovation input, innovation output and innovation effect, among which innovation output index increases in the fastest way and it exceeds the growth rate of innovation index, while innovation input and innovation circumstance grow on the same level as innovation index. Thus, innovation output makes greatest contributions to innovation index.

b. The development process of China’s innovation can be divided into three phases, the first one – from 2005 to 2008, the second one – from 2009 to 2011 and the third one – from 2012 to 2015. The characteristics of phase 3 differ substantially from another two phases and China’s innovation had entered the phase of a rapid development ever since. The year 2012 is a turning point in China’s innovation-driven development, which resulted from the fact that many relevant plans were proposed and implemented in this year under the China’s 12th Five-Year Plan.

c. Expenditure on R&D, education and income of hi-tech industry are the most important parts in China’s innovation development. Expenditure on R&D and education can be regarded as the input in the process of innovation input, while income of hi-tech industry can be regarded as the output in the same process. Compared with expenditure on R&D and education, hi-tech industry has been growing more rapidly with the development of China’s innovation, and its growth has exceeded China’s GDP growth, which reflects the efficiency of China’s innovation-driven development.
d. There still exists a problem in China's economic structure that the proportions of primary and secondary industries are relatively high and restrain the expansion of tertiary industry. But the strategy of China's innovation-driven development has achieved good results, which is expanding the proportion of tertiary industry and limiting primary and secondary industries. In terms of economic transition pattern, the strategy of innovation-driven development is effective and it is promoting China's economy to an advanced structure.

e. Under the global economic recovery, China is playing an important role in global affairs and it has proposed the Belt and Road Initiative that can benefit the economic development of the world. China, as the advocator of the Belt and Road, has the obligation to pursue a sustainable development by applying innovation-driven pattern into this initiative. In the process of the Belt and Road construction, China should improve development quality by developing science and technology and enhancing the cooperation with countries along the Belt and Road in the same fields.

Notes

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References


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Long-Term Comparative Advantages of the Eurasian Economic Union Member States in International Trade

Abstract

On 1st January 2015 the Eurasian Economic Union (EAEU) – a new integration block comprising initially Belarus, Kazakhstan, and Russia, and later that year also Armenia and Kyrgyzstan – appeared on the world map. This paper endeavors to identify the EAEU countries’ long-term international comparative advantages within four basic groups of goods according to the OECD classification of manufacturing industries based on technology intensity. The analysis, using B. Balassa’s RCA methodology and covering the years 2000–2014, indicates that these countries lack competitiveness, with none of them possessing any RCAs in the high-technology category whereas in the medium-high-technology category – only Belarus. In contrast, all the EAEU countries fared the best in the medium-low-technology category, which is mostly attributable to the resources-based character of their economies. Surprisingly, dramatically low international competitiveness was recorded by Kazakhstan and Russia.

Keywords: international competitiveness, comparative advantages, Eurasian Economic Union

JEL: F14, O57, P45
Introduction

At the beginning of 2015, a new regional integration bloc – the Eurasian Economic Union (EAEU) – made its debut on the contemporary world map. Created at the initiative and under the aegis of Russia on the basis of the previously existing Customs Union of Belarus, Kazakhstan and Russia, as at now (August 2017) it comprises five member states in total. Apart from the EAEU founding states listed above, these are also Armenia (formally since January 2nd 2015) and Kyrgyzstan (formally since August 6th 2015). In Russia’s view, the EAEU is to be the next, and this time long-term successful, form of economic cooperation in the post-Soviet area, which will effectively stop potential aspirations of the other four EAEU member states to integrate with the EU while keeping in check the growing influence of China in the region [Kirkham, 2016; Roberts, Moshes, 2016; Popescu, 2014]. What is more, the assumption goes that the role and economic importance of the EAEU in the world economy will gradually rise as a consequence of increasingly tighter cooperation between its member states, which fits in very well with Russia’s growing imperial aspirations not only in the geopolitical but also in the economic arena [Molchanov, 2015; Starr, Cornell, 2014]. However, this process is unlikely to be quick and smooth for a number of reasons, both endogenous that is originating from within the EAEU member states themselves (as observed by Libman [2015], who stresses a lack of any stable pragmatic foundations for deeper cooperation within the bloc) and exogenous, that is coming from the world economy such as, amongst others, connected with their high vulnerability (sensitivity) to cyclical developments on international commodity markets (as noted by Boguslavska [2015]). At the same time, international interest in the EAEU is on the rise not only among politicians or business practitioners but also among researchers, as evidenced by the growing number of scientific publications on this integration project [see e.g., Vinokurov, 2017; Hartwell 2016; Khitakhunov, Mukhamediyev, Pomfret, 2016; Mussatayev, Kaidarova, Mekebaeva, 2015; Tarr, 2015; Lagutina, 2014; Roberts et al., 2014; Vymyatina, Antonova, 2014; Dragneva, Wolczuk, 2013].

In light of the above, the crucial question naturally arises as to the real position of this bloc (as diverse as it is when looking at the economic potential of its member states separately, which is pointed out by, amongst others, Bikár and Kmet'ko [2015]) in the contemporary world economy, the acid test for which is the competitiveness of the individual EAEU member states’ economies in international trade. It is, thus, the purpose of this paper to conduct a synthetic analysis of these countries’ foreign trade in the years 2000–2014 in order to establish the actual competitiveness of their economies as well as to identify any comparative advantages possessed by them within the basic groups of goods in line with the OECD classification of manufacturing industries based on their technology intensity.
Additionally, it should be noted here that despite the fact that some research has already been conducted on the competitiveness of some selected aspects of the EAEU member states’ economies [see e.g., Falkowski, 2017a; Ustyuzhanina, 2016; Amirbekova, Madiyarova, 2015; Fal’tsman, 2014; Saubanov, Bagautdinova, Maklakova, 2014; Mamadiev, 2013], the review of international economic literature has revealed an alarming lack of comprehensive comparative studies as to the competitiveness and competitive advantages of all the EAEU member states in international trade within any longer time horizons and using uniform methodology. Therefore, this paper is also an attempt at filling in this important research gap.

Moreover, another big advantage of this paper is likely to be its comparative approach to the analysis of international competitiveness of all five EAEU member states in a relatively long period of time (comprising the years 2000–2014) conducted using the afore-mentioned OECD classification of manufacturing industries based on their technology intensity [OECD, 2011; Hatzichronoglou, 1997], which allows for the comparison of achieved results and for drawing conclusions.

This paper puts forth the thesis that the competitiveness of Eurasian Economic Union member states in international trade differs significantly among them, albeit it is generally low, whereas their comparative advantages can only be detected in the medium-low and low technology categories relying heavily on their respective natural resource bases.

**Literature Review**

The issue of international trade competitiveness of Eurasian Economic Union member states as the integration bloc regarded in a comprehensive comparative approach is virtually non-existent in the international economic literature (exceptions being few and far between). This can be mostly put down to the EAEU’s relative novelty. The review of international literature has revealed that papers devoted to competitiveness of the individual EAEU member states dominate, with main focus on Russia and Kazakhstan. Only in a handful of them can references to the competitiveness of the entire bloc be found. For instance, Drobot [2016] analyses the EAEU’s potential as a whole by calculating ratios of foreign trade dynamics and by comparing key macroeconomic indices to determine the competitiveness of Russia and the other EAEU member states, though mostly focusing on Russian economy. The author concludes that Russian economy needs diversification and a shift from export of resources to sales of final products is required while stimulating import substitution. Incidentally, she also remarks that a unified economic security strategy for the EAEU should be developed.

In turn, Hartwell [2016], who in his paper identifies – using SWOT analysis of present and possible future EAEU member states – threats and opportunities for the improvement
of their economies’ competitiveness in the coming years, stresses the importance of innovation barriers present in the EAEU economies, which seem to be the key factor significantly lowering their international trade competitiveness at present and in future. By eliminating such impediments to international competitiveness of the EAEU economies while simultaneously leveraging the synergy effects between them resulting from their economic integration, new internationally competitive value chains could possibly be built in some industries [Ustyuzhanina, 2016].

Coming back to Russia, its current competitive profile in the world economy, predominantly and almost entirely based on natural resources (especially the energy ones), which leads to the so-called “Dutch disease”, is the subject of numerous papers [see: Fetisov, 2014; Dobrynskaya, Turkisch, 2010; Ahrend, 2005; Aslund, 2005, etc.]. According to Tabata [2006], who using, amongst others, the RCA method measured how comparative advantages of Russia’s major export and import commodities were changing in the years 1994–2005, falling competitiveness in meat, plastics and vehicle production (and growing imports thereof) as well as stagnation in the machinery sectors need to be balanced out by rising competitiveness of Russia’s crude and natural gas exports in the first place and, to a lesser degree, those of arms, some base metals, roundwood and fertilizers.

A detailed analysis of Russia’s international trade competitiveness is conducted by Falkowski [2014], who shows that – bar just a few exceptions in the medium-low-technology goods in some years – Russia did not possess any comparative advantages in the years 1996–2010. What is more, the country’s competitiveness in the groups of high-technology, medium-high-technology and low-technology goods dramatically decreased in that period, whereas the only groups of goods in which Russia recorded some comparative advantages in international markets in the same period were: non-ferrous metals (mostly copper, tin, zinc, aluminum), refined petroleum products, non-metallic mineral products, ferrous metals – all of which belong to the medium-low-technology category – and, albeit rarely, aircraft and spacecraft, from the high-technology category. Pharmaceuticals, computing and office machinery, motor vehicles and R&D apparatus, as well as textiles and textile products were among the most uncompetitive Russian goods in international markets in the analyzed period.

To similar conclusions, i.e. the alarming – from the point of view of the actual place of Russian economy in contemporary international trade – nature of low competitiveness of Russian high-tech industrial companies, came, amongst others, Garbuzova [2015], Connoly [2008], Cooper [2006], while Kuzin specifically stated that “the state of Russian industry and its competitiveness causes serious anxiety” [2007, p. 125].

Given these specifics of Russian economy and its competitive profile e.g., Bolshakov [2016] observes that, in order to increase the country’s competitiveness, Russian authorities should put in place innovative measures aimed to create “competitiveness poles” which would allow for Russian resources (not only the mineral but also, more importantly, the human ones) to be used more effectively in future. Also, Udaltsova and Mikhelashvili [2016]...
stress the importance of raising the efficiency of the national innovation system already implemented in Russia as a key factor to improving the competitiveness of its economy. And finally, according to Eletskikh [2015], the rate of creation of original cutting-edge innovative technologies and their export should be increased and funds should be raised for developing innovative businesses.

Like with Russia, in the case of Kazakhstan – the second largest economy in the Eurasian Economic Union – its dependence on the country’s natural resource base is noticed [see e.g., Falkowski, 2017c; Farra, Burgio, Cernoy, 2011; Matveev, 2011]. For instance, Macerinskiene and Sakhanova [2011] state that, apart from its stable macroeconomic situation, Kazakhstan’s main competitive advantage is its vast base of mineral resources; as the key weaknesses of Kazakh economy, which adversely affect its international competitiveness, the same authors identify its low innovativeness and pervasive corruption.

As for Kazakhstan’s international competitiveness, what needs to be stressed is that, as observed by e.g., Khatibi [2008], despite some comparative advantages possessed by the country in the energy and mineral sectors (as, significantly, mineral fuels account for more than 80% of Kazakhstan’s exports), its competitiveness has generally suffered a significant blow in the recent years, also with respect to the goods from these sectors. This is confirmed by Amirbekova and Madiyarova [2015]. The reasons seem to be the general rise in competitiveness in the increasingly globalized and internationalized contemporary world economy but also unfavorable price dynamics in the international energy resource markets [Alzhanova, 2013].

Concerning Kazakhstan’s current competitive or, more broadly, economic profile, as stressed by Nurmukhanova [2008], the key decision for its future development will be the strategic choice between the resource-based vs. the innovative and technological orientation of its economy. Along the same line goes Danabayeva [2013], who observes that a major challenge still faced by Kazakhstan, a country with vast natural resources, is transformation of its economy into a knowledge-based one. Moreover, she also points out that taking the strategic course on industrial-innovative development of the country is a condition precedent for elaborating and then implementing new scientific ideas and technologies. This process of necessary transformation is currently underway in Kazakhstan, although it is progressing relatively slowly [Bhuiyan, 2011].

The body of research into the international trade competitiveness of the third largest EAEU economy, i.e. Belarus, which was published in English and is widely available to researchers worldwide, is very limited. The situation is worse still in the case of the remaining two EAEU member states, Armenia and Kyrgyzstan. An interesting study into Belarus’ competitiveness in international trade was conducted by Freinkman, Bakanova and Sidarenka [2010], which shows that Belarus’ comparative advantages have been decreasing for more than a decade or so. Using the RCA method, they found that the country’s comparative advantages have moved away from labor- and capital-intensive goods towards natural resources and petroleum, which impedes job creation and productivity
improvements. Moreover, what has hardly changed is the so-called “export sophistication”, a feature of more developed countries, meaning that they are able to export a wider range of higher value goods. This would indicate that the shift has been towards goods with lower technological content. Alarmingly, Belarus also seems to be losing its share in markets with higher export sophistication, namely Russia.

Similar conclusions were reached also by Falkowski [2017a], who found that Belarus’ highest comparative advantages were with respect to trade in labor-intensive low-technology goods (mainly, wood and furniture, textiles and textile products, as well as food products, beverages and tobacco – the reasons for the success in the latter group are discussed by e.g., Gusakov and Pilipuk [2013]), as well as refined petroleum products and chemicals. On the other end of the spectrum, Belarus’ competitiveness in international trade was by far the worst in high-technology goods, where Belarus not only did not have any comparative advantages whatsoever but also Belarusian products from this goods category were becoming less and less competitive by the year.

Big challenges facing Belarusian economy, also in the context of its actual relative low international competitiveness, are described by e.g., Shirov, Sabchishina and Potapenko [2016], Bikár and Kmeťko [2015], and Egorov [2014].

As for research into the international trade competitiveness of Armenia, the results of the study conducted by Weber and Yang [2011] are worth noting. According to them, in 2010 Armenia practically lost its external competitiveness, as evidenced by its greatly diminished share in world exports and poor performance of competitiveness indicators, as well as the exchange rate. The urgent need to take decisive actions aimed to improve the situation is highlighted by e.g., Ghulijanyan [2012]. And finally, with regard to Kyrgyzstan, Mamadiev [2013] points out that although – after regaining its independence in 1991 – the country was able to trade freely with the rest of the world, it did not manage to benefit much from international trade due to the total lack of competitiveness of its economy. Except for that one paper, a lack of any other economic analyses can be observed.

In summary, a thorough overview of international literature on the international trade competitiveness of EAEU member states has revealed a clear quantitative difference among them, in favor of the bloc’s largest economies i.e., Russia and Kazakhstan. Therefore, the analysis of the competitiveness covering all countries forming the Eurasian Economic Union as conducted in this paper seems all the more needed.

Research Methodology and Data

To begin with, it should be stressed that there are various definitions of international competitiveness in the economic literature, depending on who (companies or countries) and at which level (mega, macro, mezzo or micro) as well as within which range (within
the sphere of production factors or goods) competes with other entities on the international stage. A synthetic overview of them can be found in e.g., Żmuda and Molendowski [2016], Bhawsar and Chattopadhyay [2015], Misala [2014], and Banwet et al. [2002].

However, as it is the subject of this article, it seems necessary that the notion of international competitiveness of economies in trade, as it is understood in this article, is defined. According to OECD [2005], said competitiveness should be understood as an economy’s ability to compete fairly and successfully in international goods and services markets, which, as a result, leads to a steady rise in the living standards in the long term. Similar definitions are provided by i.a., Siggel [2006] and Boltho [1996]. In turn, Weresa [2014] stresses the dynamic character of competitiveness, stating that it is the ability to derive faster (than other countries) and bigger benefits from own and foreign production factors under the conditions of an open economy, which naturally also translates into a more dynamic growth of welfare. According to Carbaugh [2017], international competitiveness boils down to the ability to develop, produce and sell goods and services which are more attractive because of their price or quality than the export offer of other countries, as evidenced by the growing share of the given country in international trade with respect to the sale of such goods as compared to other countries.

The international competitiveness of economies can also be defined and analyzed from the so-called “competitive position” point of view (i.e., in static terms). According to Weresa [2014], in line with this approach competitiveness should be understood as the country’s own place within the global economy. In practice, this is reflected in its contribution to broadly understood international trade, indicating the country’s position in relation to other economies in trade in goods, services and the flow of international production factors [Carbaugh, 2017; Collignon, Esposito, 2014; Fagerberg, 1996].

While being aware of the existence of a multitude of different methods for assessing the international competitiveness of economies (a synthetic overview of which can be found in Startiene and Remeikiene [2014]), in this article the traditional and widely accepted (despite some controversies discussed hereinbelow) method of analyzing revealed comparative advantages (RCA) developed by Balassa [1965, 1989] has been applied; specifically, the paper uses Balassa’s original logarithmic formula of:

\[
RCA_{ij} = \ln \left( \frac{x_{ij}}{\sum_{i} x_{ij}} \right) \left( \frac{\sum_{j} x_{ij}}{\sum_{i} \sum_{j} x_{ij}} \right)
\]

where:

- \( RCA_{ij} \) – the revealed comparative advantages index of the given country in the \( i \) goods category in relation to the \( j \) country or category of \( j \) countries,
- \( x_{ij} \) – exports of the \( i \) goods category from the given country to the \( j \) country or category of \( j \) countries,
\[ \sum_i x_{ij} \] – total exports from the given country to the \( j \) country or category of \( j \) countries,
\[ \sum_j x_{ij} \] – total exports of the \( i \) goods category from the \( j \) country or from the category of \( j \) countries,
\[ \sum_i \sum_j x_{ij} \] – total exports from the \( j \) country or from the category of \( j \) countries.

The logarithmic form of the formula ensures the symmetry of both positive and negative values of the RCA index in the region around 0, which facilitates their interpretation [Vollrath, 1991]. If \( RCA_i > 0 \), then the country enjoys a revealed comparative advantage in trading goods from the given category and the value of the index indicates the degree of such an advantage. On the contrary, if \( RCA_i < 0 \), then no such revealed comparative advantage, to a higher or lower degree, exists.

When choosing the method for analyzing economies’ international competitiveness in trade using Balassa’s RCA index described above, one should be aware of its certain limitations and fallibilities even though they do not discredit it entirely. According to Siggel [2006], the Balassa method does indeed enable one to detect the successes in the exports of a country as compared to the world as a whole; however, it fails to reveal the reasons of such successes, which could be the effect not of increased competitiveness and efficiency of the economy but of subsidies for the given manufacturing sector introduced by the country or manipulations of its currency’s exchange rate. This opinion is shared by Hinloopen and Van Marrewijk [2001], who also point out that the Balassa method does not allow for the (ex ante) factors specific to the exporter-sector – being the source of comparative advantage – to be isolated. What is more, the methodology for detecting the existence of potential comparative advantages proposed by Balassa is also subject to some weaknesses concerning empirical distribution, the most important ones being time instability and poor ordinal ranking property. Similar reservations were made by Costinot, Donaldson and Komunjer [2012], who stated that, owing to its simplicity, the Balassa method fails to capture such subtleties as heterogeneous preferences and heterogeneous trade costs, which is why the RCA index shows the effects but not the reasons behind the comparative advantages already present. Another shortcoming of this method observed by Yeats [1985] is that results achieved when measuring a country’s comparative advantage with Balassa’s RCA index can often be inconsistent or even misleading as the index is skewed in favor of countries with a small market share in the world export market, giving them relatively stronger comparative advantage than others. Moreover, as Hoen and Oosterhaven [2006] point out, the distribution of the standard Balassa’s RCA index seems impossible to be theoretically derived owing to its dependence on the number of countries and sectors included. Another problem observed by them is the instability of the index’s mean and that it exceeds 1 – the value to be expected theoretically.

On the other hand, however, in spite of its different shortcomings identified above, Balassa’s RCA index still enjoys the widest acceptance and remains broadly used today as a gauge of international specialization and comparative advantage. Unquestionably,
the most important virtue of this method of analyzing competitiveness of economies is that it allows one to spot and measure changes in comparative advantages possessed by a country with respect to goods of given factor intensity, i.e. the relative proportion of the various factors of production used to make a given good, with respect to technologically advanced goods, for instance; another one being the simplicity of the index’s structure. Furthermore, as the European competitiveness report 2014 “Helping firms grow” [EC, 2014] observes, trade data used to calculate revealed comparative advantage indices are very detailed and can be further disaggregated to the level of individual products or groups of products, which gives a fuller picture of the advantages and disadvantages of an economy as a whole and of industrial sectors of individual countries separately. This, in turn, allows for comparisons between and rankings to be drawn of individual countries (with respect to the given sector) or individual sectors (within a given country) [De Benedictis, Tamberi, 2001; Balance, Forstner, Murray, 1987].

It should be clearly stressed, though, that despite there being many different theoretical modifications of the traditional Balassa’s formula in use in the literature proposed on the grounds of its objective shortcomings as mentioned above [see e.g., Donges, Riedel, 1977; Bowen, 1983; Ballance, Forstner, Murray, 1985; Proudman, Redding, 2000; Hoen, Oosterhaven, 2006; Yu, Cai, Leung, 2008; Leromain, Orefice, 2013; Laursen, 2015], which in turn themselves are also subject to criticism, this approach continues to be widely used in a number of empirical studies concerning international competitiveness of economies from all around the world, ranging from special reports on the EU competitiveness commissioned by the European Commission [see e.g., EC, 2015; Pashev, 2015; EC, 2014; CIREM, 2013] to publications of the World Bank [Reis, Farole, 2012] and to research papers written by numerous economists [see e.g., Weresa, 2014; Ekmen-ÖzÇelİk, Erlat, 2013; Saboniene, 2009]. All this seems to be proof enough that – to quote the words of Grigorovici [2009] – “RCA index is the most widely used for estimating the comparative advantage in the commercial relations between countries”. The use of the RCA formula in order to conduct the analysis of the issue being the subject of this paper is thus fully justified.

In this paper, in order to assess international competitiveness and to detect potential competitive advantages of the EAEU countries in international trade, the trade goods structure of these countries in the years 2000–2014 has been analyzed within the basic groups of goods in line with the OECD classification of manufacturing industries based on their technology intensity. This allows one to measure the competitiveness of each of the five analyzed economies with respect to goods from the high-technology, medium-high-technology, medium-low-technology and low-technology goods categories [OECD, 2011; Hatzichronoglou, 1997]. Thanks to this methodology, conclusions can be drawn as to the actual international competitiveness of the EAEU countries with regard to goods from the high-technology and medium-high technology goods categories, which are particularly important for the competitiveness of the given economy in the international arena in face of the realities of the contemporary world, which increasingly relies on
knowledge, innovations and modern ICT. All data used for the analysis are derived from
the United Nations Commodity Trade Statistics Database.

The timeframe for the analysis, i.e. the years 2000–2014, has been chosen intentionally,
as it includes the 15 years directly preceding the formal formation of the EAEU. The analysis
of the issue in question conducted in the paper is intended to constitute the benchmark
for future research into the competitiveness of countries forming this integration bloc,
taking into account the consequences of its formation for their competitiveness.

**Empirical Research Results**

Given the realities of the contemporary international trade on the one hand and the
position of the country in the world economy on the other, comparative advantages are
especially desirable in the high-technology goods category. Such advantages are achieved
in industries characterized by intensive use of modern factors of production and high
innovativeness. Under the OECD classification, the high-technology goods category
comprises the following subcategories: *aircraft and spacecraft; medical, precision and optical
instruments; office, accounting and computing machinery; pharmaceuticals; and radio, TV
and communications equipment.*

First, when looking at the values of the RCA indices calculated for goods from the high-
technology category overall (in line with the OECD classification) concerning international
trade of the EAEU member states over the years 2000–2014, it is noticeable that none of
them recorded any comparative advantages whatsoever in this respect (all RCA index
values < 0). Kazakhstan, in particular, fared by far the worst among all the EAEU countries,
followed closely by Kyrgyzstan and, surprisingly, Russia. More importantly, no discernible
improvement in this regard can be observed for any of the analyzed countries, which
allows one to assume that no improvement in the international trade competitiveness of
these countries with respect to goods from the high-technology category can be expected
in the foreseeable future either. In line with Hartwell [2016], this can be put down mostly
to the low innovativeness of these countries.

More specifically, the values of RCA indices for the five subcategories of the high-
technology category (in line with the OECD classification) listed above clearly show that
the only EAEU countries which did, at times, record some, albeit very limited, comparative
advantages in any of them during the analyzed period were Russia and Armenia. In the
case of Russia, these were revealed in the *aircraft and spacecraft* subcategory in the years
2002–2003, whereas Armenia enjoyed comparative advantages in the *medical, precision and optical instruments* subcategory in the years 2002–2003 and in the *aircraft and spacecraft*
subcategory in the years 2011–2013.
Second, as for the goods from the medium-high-technology category overall, which under the OECD classification comprises the subcategories: chemicals excluding pharmaceuticals; electrical machinery and apparatus, n.e.c; machinery and equipment, n.e.c.; motor vehicles, trailers and semi-trailers; and railroad equipment and transport equipment, n.e.c., the situation was different insomuch as the only EAEU country enjoying some (rather small) comparative advantages in international trade in this respect was Belarus. In contrast, the worst performing countries were, again, Kazakhstan, and Armenia (Figure 2).

A closer look at the values of the RCA indices for the individual subcategories of the medium-high technology category (in line with the OECD classification) allows one to identify the leader among the EAEU countries in this regard, that is Belarus, which recorded some comparative advantages, in fact only in two subcategories, i.e. chemicals excluding pharmaceuticals – over the entire analyzed period – and machinery and equipment, n.e.c. – in the years 2000–2007, 2010 and 2013 (concerning, mainly, heavy goods vehicles and agricultural machinery exported predominantly to former USSR countries). However, the advantages in these two subcategories were high enough for Belarus to enjoy positive (> 0) values of RCA indices for goods from the medium-high technology category overall over the entire analyzed period. In contrast, it is noteworthy that none of the remaining EAEU countries (i.e., Armenia, Kazakhstan, Kyrgyzstan and Russia) achieved any comparative advantages in any of the five subcategories of the medium-high-technology category (in line with the OECD classification) and in any of the years of the analyzed period 2000–2014. In particular, the subcategory which proved the least competitive...
in the international arena (that is, with the lowest recorded values of the RCA index) for all these countries was vehicles, trailers and semi-trailers.

FIGURE 2. Revealed Comparative Advantages (RCA) in exports of the EAEU countries within medium-high-technology goods in the years 2000–2014

Third, the analysis has shown that the only category with respect to which all the EAEU member states are competitive in the international arena is the medium-low-technology category, which is characterized by both high capital-intensity and low innovativeness. Under the OECD classification, this category comprises the following subcategories: basic metals and fabricated metal products; building and repairing of ships and boats; coke, refined petroleum products and nuclear fuel; other non-metallic mineral products; and rubber and plastics products. In the years 2000–2014, all the EAEU member states enjoyed comparative advantages (RCA index values > 0) with respect to this category overall; their magnitude differed among the individual countries, though.

In particular, for many years the strongest – among all the EAEU member states – comparative advantages in international trade in the medium-low-technology category were observed in Kyrgyzstan (except for in 2008, the only year when Belarus scored better in this respect), mostly due to the high competitiveness of Kirgiz products from non-metallic minerals (i.e., in the other non-metallic mineral products subcategory). On the other end of the spectrum was Kazakhstan which not only fared by far the worst against the other EAEU countries but also recorded a downward trend in its international trade competitiveness in the medium-low-technology category, mostly attributable to the falling competitiveness of Kazakh economy in the building and repairing of ships and boats subcategory.
The more detailed analysis of the values of the RCA indices for the individual subcategories of the medium-low-technology category in the EAEU countries in the years 2000–2014 reveals that Armenia, Kazakhstan and Kyrgyzstan are decidedly the most competitive in the basic metals and fabricated metal products subcategory. In the case of Kyrgyzstan, also its high competitiveness in the other non-metallic mineral products subcategory, as mentioned earlier, should be noted. Russia, in turn, for many years enjoyed the highest comparative advantages in trade in goods from the coke, refined petroleum products and nuclear fuel subcategory, which is the direct consequence of the large deposits of mineral fuels, that is oil and natural gas, it possesses and exploits. Like Russia, Belarus also is very competitive in international trade with respect to the coke, refined petroleum products and nuclear fuel subcategory; however, this is mostly due to the relatively low-cost processing of crude oil imported from Russia at preferential prices.

Fourth, with respect to the fourth category in line with the OECD classification of manufacturing industries based on their technology intensity, i.e. the low-technology goods, which comprises the following subcategories: food products, beverages and tobacco; manufacturing, n.e.c.; textiles, textile products, leather and footwear; and wood, pulp, paper, paper products, printing and publishing, competitiveness of the EAEU member states differs extensively from one to another. For many years, the highest comparative advantages, as measured by the RCA index, have been achieved by Armenia, followed by Belarus. For Armenia, this is mostly attributable to its relatively high competitiveness with respect to production and exports of alcoholic beverages (including wines), fruits
and vegetables as well as tobacco products. In contrast, the countries which recorded the lowest comparative advantages in this category are again (like in the case of the high-technology goods) Kazakhstan and Russia.

**FIGURE 4. Revealed Comparative Advantages (RCA) in exports of the EAEU countries within low-technology goods in the years 2000–2014**

The detailed analysis of the RCA index values for the individual subcategories of the low-technology category in the years 2000–2014 calculated for the EAEU member states shows that Armenia enjoyed comparative advantages in the *food products, beverages and tobacco* and *manufacturing, n.e.c.* subcategories; Belarus – in *food products, beverages and tobacco* and *wood, pulp, paper, paper products, printing and publishing*; Kyrgyzstan – in *textiles, textile products, leather and footwear* (and in the years 2002–2008, it also recorded slight comparative advantages in the *food products, beverages and tobacco* subcategory); and Russia – only in the *wood, pulp, paper, paper products, printing and publishing* subcategory and only until 2007. In contrast, Kazakhstan was the only EAEU member state which did not have any comparative advantages with respect to the individual subcategories of the low-technology category (in line with the OECD classification).

Finally, by going one step further to look at the individual goods traded internationally by the EAEU member states and analyzing their comparative advantage for them as measured by the RCA index, their actual competitive position in the international arena can also be assessed through identifying their export bestsellers i.e., their most competitive products in international trade.
<table>
<thead>
<tr>
<th>No.</th>
<th>Category*</th>
<th>Name</th>
<th>Value of the RCA index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Armenia</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>MLT</td>
<td>Molybdenum, unwrought, bars/rods simply sintered, scrap</td>
<td>7.25</td>
</tr>
<tr>
<td>2.</td>
<td>MLT</td>
<td>Ferro-molybdenum</td>
<td>6.61</td>
</tr>
<tr>
<td>3.</td>
<td>HT</td>
<td>Watch cases, n.e.c.</td>
<td>5.97</td>
</tr>
<tr>
<td>4.</td>
<td>HT</td>
<td>Watch cases of, or clad with, precious metal</td>
<td>5.94</td>
</tr>
<tr>
<td>5.</td>
<td>LT</td>
<td>Spirits obtained by distilling grape wine, grape marc</td>
<td>5.67</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Belarus</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>MHT</td>
<td>Threshing machinery, n.e.c.</td>
<td>5.39</td>
</tr>
<tr>
<td>2.</td>
<td>LT</td>
<td>Bovine carcasses and half carcasses, frozen</td>
<td>5.35</td>
</tr>
<tr>
<td>3.</td>
<td>LT</td>
<td>Dairy spreads</td>
<td>4.71</td>
</tr>
<tr>
<td>4.</td>
<td>MHT</td>
<td>Potassium chloride, in packs &gt;10kg</td>
<td>4.71</td>
</tr>
<tr>
<td>5.</td>
<td>MLT</td>
<td>Bituminous mix, mastic from asphalt, bitumen/tar/pitch</td>
<td>4.61</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kazakhstan</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>MLT</td>
<td>Beryllium, unwrought, waste or scrap/powders</td>
<td>5.32</td>
</tr>
<tr>
<td>2.</td>
<td>MLT</td>
<td>Ferro-silico-chromium</td>
<td>4.90</td>
</tr>
<tr>
<td>3.</td>
<td>MLT</td>
<td>Ferro-tungsten and ferro-silico-tungsten</td>
<td>4.82</td>
</tr>
<tr>
<td>4.</td>
<td>MLT</td>
<td>Natural uranium, its compounds, mixtures</td>
<td>4.68</td>
</tr>
<tr>
<td>5.</td>
<td>MHT</td>
<td>Chromium oxides, hydroxides except chromium trioxide</td>
<td>4.47</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kyrgyzstan</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>MHT</td>
<td>Double or complex silicates of metals</td>
<td>7.57</td>
</tr>
<tr>
<td>2.</td>
<td>MHT</td>
<td>Filament lamps, of a power &lt;= 200 Watt, &gt; 100 volts</td>
<td>5.52</td>
</tr>
<tr>
<td>3.</td>
<td>MLT</td>
<td>Worked calcareous stone, n.e.c.</td>
<td>5.40</td>
</tr>
<tr>
<td>4.</td>
<td>LT</td>
<td>Woven fabric &lt;85 per cent artificial staple+cotton, yarn dyed</td>
<td>4.89</td>
</tr>
<tr>
<td>5.</td>
<td>MLT</td>
<td>Float glass etc. in sheets, non-wired, clear</td>
<td>4.55</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Russia</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>MHT</td>
<td>Isoprene rubber (IR)</td>
<td>3.00</td>
</tr>
<tr>
<td>2.</td>
<td>MHT</td>
<td>Fertilizers with nitrates and phosphates, n.e.c., &lt;=10kg</td>
<td>2.94</td>
</tr>
<tr>
<td>3.</td>
<td>MLT</td>
<td>Ferro-chromium, &lt;4 per cent carbon</td>
<td>2.89</td>
</tr>
<tr>
<td>4.</td>
<td>MLT</td>
<td>Bar/rod of silico-manganese steel not in coils</td>
<td>2.86</td>
</tr>
<tr>
<td>5.</td>
<td>MHT</td>
<td>Saturated acyclic hydrocarbons</td>
<td>2.80</td>
</tr>
</tbody>
</table>


Source: own study based on United Nations Commodity Trade Statistics Database.
As the data presented in Table 1 indicate, the most competitive products in international trade for each and every EAEU member state are all low-technology, low added-value and capital-intensive goods, mostly coming from industry sectors heavily relying on averagely-skilled workers. One exception to that rule is the relatively high international competitiveness of watch cases and parts thereof for Armenia. In all the remaining cases, however, these are mostly relatively low-processed natural raw materials and their derivatives.

However, if we look at the dynamics of revealed comparative advantages in international trade of the individual EAEU countries excluding any trade between them (to eliminate the factor of historically very strong trade relations between them, which potentially positively affects the values of RCA with respect to exports to the other EAEU countries of those goods which they cannot export outside the former Soviet area), it turns out that the values of RCA have changed most significantly for Belarus. As a result of such revision, Belarussian economy (which, as shown above, possessed comparative advantages in all categories except for the high-technology category) has lost all its comparative advantages in the medium-high-technology and low-technology category whereas those in the medium-low-technology have substantially decreased. The main reason for that is the fact that the other EAEU countries traditionally account for almost half of total Belarussian exports (in 2016, the respective share was 49.3%, of which Russia alone accounted for 47%). Moreover, if we look at the structure of the country’s exports, which is dominated by machinery and equipment as well as transport equipment (tractors, heavy goods vehicles, combine harvesters, motorcycles, bearings and refrigerators), petroleum refining products, potassium fertilizers, as well as some agri-food products (such as dairy products, eggs, honey, and edible products), the results achieved are hardly surprising.

A similar adjustment has to be made in the case of Armenia and Kyrgyzstan, which, after the trade with the other EAEU countries has been excluded from the analysis, have lost their comparative advantages in the low-technology category while in the medium-low category – their advantages have significantly diminished. In the case of Russia and Kazakhstan, however, the same revision has not brought any significant changes in their comparative advantages.

Conclusions

The subject-matter of this paper was an in-depth analysis of the international competitiveness of the economies of the countries forming since 2015 the Eurasian Economic Union (EAEU) (Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia), conducted in order to identify their main comparative advantages in international trade in the years 2000–2014.
The analysis of comparative advantages enjoyed by individual EAEU member states within the four basic goods categories in line with the OECD classification of manufacturing industries based on their technology intensity, i.e. the high-technology, medium-high-technology, medium-low-technology and low-technology categories, has revealed that all the EAEU countries, without any exceptions, are able to compete internationally only in goods of relatively low technological advancement, low added value, high capital intensity, coming mainly from industries using medium-qualified workers i.e., generally speaking, in raw materials and their derivatives.

The analysis has shown that for many years running none of these countries had any comparative advantages in the categories of high-technology and medium-high-technology goods overall (the exception being Belarus in the latter category). Secondly, all analyzed EAEU member states recorded comparative advantages in trade in the medium-low-technology category, with their magnitude differing from one to another, whereas only two of them, namely Armenia and Belarus, possessed comparative advantages in the low-technology category.

It should be stressed here that the advantages recorded by the EAEU countries are the effect of a consistent and deliberate export specialization of their economies in the raw materials possessed and their derivatives, which is additionally strongly supported by the targeted policies of their governments. The most striking examples of this are, first and foremost, Russia but also Kazakhstan, albeit to a lesser extent, where, as is clearly visible, the natural resource sector is nurtured, controlled, and subsidized by state authorities. As a consequence, it further strengthens the negative effects of the so-called “Dutch disease”, which is the overexploitation of natural resources (mostly the energy ones), owing to the relatively easy acquisition of extra budget revenues (taxes on their extraction and export), which in turn leads to stifled progress and falling competitiveness of other sectors of the economies of these two states (more on this subject: Falkowski [2017b]; Mironov and Petronevich [2015]; Dülger et al. [2013]). The analysis has shown that, paradoxically, the two largest EAEU economies, Russia and Kazakhstan, have a relatively low level of competitiveness in contemporary international trade, given their economic potential.

On the other hand, the strongest among all the countries of the EAEU, at least at face value, taking into account the comparative advantages in international trade in the years 2000–2014, is Belarus, which possessed such advantages in three categories: medium-high-technology, medium-low-technology and low-technology. However, its relatively high competitiveness in these categories is, de facto, to a large extent the direct consequence of low-cost processing of Russian petroleum imported at preferential prices, as well as the large share of post-Soviet countries (especially Russia) in Belarussian exports. Interestingly, and very importantly, if we consider the country’s exports excluding the rest of the EAEU member states, Belarus loses its comparative advantages (in the middle-high-technology and low-technology categories) or they are significantly weaker (in the medium-low-technology category). This clearly underscores the real (i.e., low) competitiveness of the
Belarusian economy in contemporary international trade. Also, similar revisions have to be made to the comparative advantages of Armenia and Kyrgyzstan.

Given the above as well as the specifics of the contemporary, globalized world economy and dynamic changes in international trade, which is becoming increasingly dominated by high-technology and medium-high-technology goods, any substantial changes in the structure of comparative advantages of the countries forming the EAEU are hardly to be expected without decisive actions taken by their authorities to improve their competitive potential. The most important recommendations in this respect, addressed to all the EAEU countries, should include: (i) to create comprehensive, coherent and consistently implemented long-term economic policies fostering modernization and innovativeness, and, as a consequence, leading to increased productivity and competitiveness of their economies; (ii) to develop clear legal framework (i.a. to eliminate any inconsistencies in regulations, to protect ownership and to improve the effectiveness of efforts to combat corruption), which is necessary to raise these countries’ investment attractiveness to foreign capital and to implement innovative projects, including R&D ones; (iii) to take action to diversify as much as possible their export offer, i.a. by gradually abandoning the state policy of selectively supporting and subsidizing the sectors of extraction and processing of raw materials and, instead, by supporting the development of knowledge- and innovation-based sectors; (iv) to deepen systematically and consistently the integration within the EAEU in order to create a fully-fledged economic union allowing for free movement of production factors, which can lead to their increased productiveness, and thereby improve the competitiveness of the individual EAEU economies (especially the smaller ones – Armenia and Kirgizstan), and of the entire bloc as a whole.

In conclusion, in view of the growing importance of the issue of international competitiveness on the one hand (in connection, amongst others, with the search for causes and consequences of the divergence which has been growing for years), and the attempts at ever closer economic integration in the post-Soviet area within the Eurasian Economic Union on the other, the need for further research into the EAEU’s competitiveness using research methods other than the one applied in this paper seems to be justifiably called for. Also, it would be expedient to conduct a cross-sectional analysis for the economies of the each EAEU member state separately to evaluate their individual competitiveness. With the passage of time and new statistical data becoming available, it should also be checked whether and to what extent the formation of the EAEU has contributed to the improved competitiveness of the individual EAEU countries in contemporary international trade.
Notes

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Is Intra-Industry Trade Specialization a Precondition to Business Cycle Synchronization When Joining the Euro Area? The Case of Poland

Abstract

The first objective of this paper is to present theoretical approaches to the impact of trade growth (induced by monetary integration) on business cycle synchronization which is an important factor of a country’s readiness for a currency union accession. The main conclusion from the first part of the analysis is that business cycle convergence and the cost of the lack of an autonomous monetary policy depend on intra-industry trade (IIT) intensity rather than on general trade growth. The second objective is to assess – using the IIT index as a measure of business cycle synchronization (and of susceptibility to asymmetric shocks transmitted mostly through trade channels) – preparedness of the Polish economy to the euro adoption. Calculations reveal that the IIT intensity in Poland is already relatively high (in particular in relations with the euro area members) and continues to rise. This confirms the increasing complementarity of Poland’s economy with the economic structures of the euro area partners which reduces the probability of asymmetric shocks.

Keywords: intra-industry trade, optimum currency area, trade specialization, EU-10 countries, euro area

JEL: F11, F12; F15, F44

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Introduction

In recent years the links between trade integration and business cycle synchronization have become an important area of discussions in the context of the euro area (in) stability and in the context of the applicant countries’ commitments to join this area. There is a common understanding in theory that countries with high intensity of foreign trade and positively correlated business cycles are more likely to join and benefit from a monetary union [Frankel, Rose, 1996; Czarny et al., 2013]. There is no consensus, however, on whether the increased trade intensity fostered by the creation of a currency union leads to more or less synchronization of trading countries’ business cycles.

The objective of this paper is to explore the impact of economic integration (trade specialization) on the synchronization of business cycles and to draw conclusions for Poland.

The analysis includes theoretical and statistical parts. The objective of the first part is to present the existing theoretical approaches to the impact of trade growth (induced by monetary integration) on business cycles synchronization. The main conclusion is that a growth in trade results in greater business cycle convergence only in the case of intra-industry trade (IIT) which leads to an increase in the complementarity of countries’ economic structures. The statistical part contains calculations of IIT intensity in Poland’s foreign trade in the period of 1995–2014, i.e. years covered by the research grant, which became the basis for preparing this paper. The main conclusion is that a high and increasing share of IIT in the country’s trade with the euro area members suggests sustainability of Poland’s business cycle synchronization with the euro area and the complementarity of the Polish economy with the economic structures of the euro area partners.

The paper is structured as follows. It briefly summarizes the theoretical framework of relations between trade specialization and business cycle synchronization, discusses changes in the intensity of IIT between Poland and its trading partners and finally it concludes.

Theoretical Framework

Trade specialization and related susceptibility to asymmetric shocks (transmitted mostly through trade channels) is one of the most debated issues in the theory of monetary integration. According to the concept of an optimum currency area (OCA) as formulated in 1961 by R. Mundell and later developed by his successors, the synchronization of business cycles is one of the most important criteria for the creation of a currency union suitability [Mundell, 1961]. Countries that enter a currency union are likely to experience different business cycles as compared to the previous periods, partly because of changes in monetary policy (implementation of a new, single currency), partly as a result of closer trade links with the other members of the union. If business cycles in the countries...
forming/participating in a monetary union are not convergent enough, the single monetary policy of the union will not be optimal for each country concerned. Thus, the losing of a country’s own currency (monetary independence) and ‘foregoing the possibility of dampening business cycle fluctuations through independent counter-cyclic monetary policy’ [Frankel, Rose, 1996] brings costs for the monetary union members. Countries give up a potentially important stabilizing tool when they decide to join a currency union. The greater the chance of asymmetric shocks is, the higher the cost will be.

As already mentioned, there is no consensus in theory on whether the increased trade intensity fostered by the creation of a currency union leads to more or less synchronization of trading partners’ business cycles. Therefore, there is no uniform approach on the impact of increased trade in the currency union on the potential for asymmetric shocks and suitability of monetary integration [Frankel, Rose, 1996].

Historically, two opposing views appeared on the possible outcome of deepening economic integration, in particular trade integration, which are known as ‘the European Commission’s View’ and ‘the Krugman’s View’ [Handler, 2013; Blanes-Cristóbal, 2009].

a) The Commission’s view [Commission of the European Communities, 1990] was based on Kenen’s [1969] idea that strongly diversified economies, with a high share of IIT, are less susceptible to asymmetric shocks [Kenen, 1969]. It assumed that deeper integration in the form of Economic and Monetary Union (EMU) will lead to a situation where asymmetric shocks occur less frequently (this approach is also referred to as the convergence approach). The explanation is a big role of intra-industry trade between the EMU member states. The more integrated the countries are, the more similar their reaction to distortions is. As a result, their business cycles will also become more symmetric (any changes in the pattern of demand in individual industries will be more similar), [Böwer, Guillemineau, 2006]. Also, monetary integration will be easier (less costly) for participating (and applicant) countries as adjustments to changes ongoing in the economy will appear in the same industries and not between them [Faustino, Leitão, 2009].

The Commission’s assumption that increased trade in the EMU would be mostly of IIT, and not of inter-industry character, partly reflected the previous experience with the European Economic Community (EEC) integration. Researchers who analyzed liberalization results among the member countries of the EEC and other integration blocs in the 1960s and in the next decades found that the resulting trade increase was mostly due to intra-industry trade [Balassa, 1966; Fontagné, Freudenberg, 1997].

This finding also contributed to the theoretical research as it contradicted the traditional Heckscher–Ohlin theory which explained the sources of trade growth in comparative costs and advantages based on different factor endowments. New theoretical models appeared in the late 1970s and the early 1980s and stressed other determinants of intra-industry trade like, among others, increasing returns of scale and consumer preferences in conditions of imperfect competition [Czarny, 2002]. Moreover, additional sources of trade advantages were pointed out i.e., reduction in trade transaction costs and costs
related to the volatility of exchange rates. According to the theory, this would benefit trade in differentiated products (which is the essence of IIT) more than trade in homogeneous products (typical for inter-industry trade).

b) The opponents of this view were represented by Krugman [Krugman, 1991; Eichengreen, 1992, pp. 138–161]. He argued that the EMU would increase the divergence of business cycles, which would result in more inter-industry trade in Europe (a rise in trade specialization), rather than an increase in intra-industry trade. Thus, the EMU would result in the countries becoming more specialized in the goods in which they have comparative advantages. He cited the example of the USA and argued that in Europe, as in the USA, closer integration will result in the increased regional concentration of industries (in order to profit from economies of scale). Thus, the economic structures of the currency union members will become increasingly different. Krugman’s conclusion was that the potential for asymmetric shocks increases with greater integration among countries (and regions).

De Grauwe [2014, pp. 23–27] added one more argument against Krugman’s approach. He noticed that since economies of scale did not matter much to services, economic integration did not lead to regional concentration of services as might be the case with industrial sectors. As a result, ‘the trend towards regional concentration of economic activities may stop even if economic integration moves forward’. In particular, high-technology industries, financial services, also the chemical and automotive industries illustrate well this thesis.

On the other hand, Bąk and Maciejewski [2015] stress that ‘eliminating law and economic barriers between regions boosts trade and likely fosters specialization, i.e. divergence of economic structures’. Thus, in some cases, economic integration will lead to higher concentration in fewer regions and deeper specialization of production, instead of convergence of economic structures and incomes.

In turn, the argument of positive effects of the EMU (of trade growth resulting from monetary integration) on business cycle synchronization was strengthened by the concept of endogeneity of the optimum currency area (OCA)\textsuperscript{5}, partly already incorporated by the Commission in its 1990 report [Commission of the European Communities, 1990]. The concept of endogeneity of OCA was formally formulated by Frankel and Rose [1996, 1997]. The authors presented the argument that a common currency area might gradually become an optimal currency area, despite not having been an optimum currency area (OCA) prior to currency unification: ‘countries which join the EMU, no matter what their motivation, may satisfy OCA criteria \textit{ex post} even if they do not \textit{ex ante!’} [Frankel, Rose, 1997]. Thus, they argued, the convergence tendencies reinforce after monetary unification. ‘OCA assessment criteria need not be met prior to a monetary union’s creation, since endogeneity will lead to the fulfilment of these criteria at some point in time after monetary unification.’ This was the optimistic conclusion that the monetary union would endogenously create the conditions of its success [Fontagné, Freudenberg, 1999]\textsuperscript{6}. At the same time, currency unification should bring increased intra-industry trade and greater
business cycle synchronization among member states. According to that theory, the degree of intra-industry linkages is of key importance to the sustainability of business cycle synchronization [Borowski, 2001]. Therefore, it is crucial also to the costs of adjustment of an applicant country to a monetary union as well as of a member of such a union: the higher the IIT share in total trade of a country, the lower the cost of the lack of an autonomous monetary policy in the case of an asymmetric shock [Dautovic et al., 2014; Misztal, 2013].

Let us notice that the original Mundell’s OCA approach considered business cycle similarity to be exogenous to monetary policy. In his approach, the synchronization of business cycles was treated as a necessary (or desired) precondition of a successful monetary union. In contrast, the endogenous OCA approach stresses the possibility of achieving this criterion after the creation of monetary union.

Taking into account the lack of consensus in the theory as to the impact of trade increase on the business cycle (whether the likelihood of the cycle synchronization increases or decreases), the relationship between the two issues can be addressed in an empirical way. On account of the limited length of the article, an overview of the literature on this issue is not included. Let us only add that, as in the case of theoretical conclusions, the existing empirical evidence on association between trade flows and business cycle synchronization is mixed [Baldwin et al., 2005; Blanes-Cristóbal, 2009].

Changes in the Intensity of IIT Between Poland and the Euro Area Members

As already mentioned, the nature of commodity specialization of the countries forming a monetary union as measured by the IIT index is a useful indicator for assessing the sustainability of business cycle convergence between countries [Borowski, 2001]. Thus, we adopt below this index to assess the risk of asymmetric shocks between Poland and the euro area. We assume that the stronger Poland’s intra-industry linkages are, the lower the risk of asymmetric shocks which may affect the Polish economy after joining the euro area and of giving up the national currency as an instrument of mitigating the effects of such shocks are.

Intra-industry trade (IIT, also referred to as two-way trade) shows the extent to which simultaneous exports and imports of products belonging to the same industry occur. The calculations of IIT intensity in this paper are based on the standard Grubel–Lloyd index [Grubel, Lloyd, 1975, pp. 21–36] which allows one to compute the share of two-way trade in the total trade in an industry. The main period under analysis is 1999–2014 (i.e., from the beginning of the third stage of the EMU when the conversion rates of the national currencies against the euro became fixed to the last year for which comparable trade data are available). We also present data for the reference period, i.e. 1995–1998,
for the purpose of illustrating the scale of change. In this period, the implementation of the EMU was already in progress.

The data presented in Figure 1 allow for the following observations. Throughout the period covered, the Grubel–Lloyd index showed a steady upward trend in relations with all the groups of partners. This trend reflected ongoing structural changes in the economy as a whole, leading to a more advantageous specialization in trade and production than that offered by inter-industry trade.

The Grubel–Lloyd index was the highest in trade with the euro area countries throughout the period in question. Whereas in 1999 (the beginning of the creation of the EMU) it was only slightly (4 pps) higher than in trade with the other EU Member States, in 2014 the gap was over 8 pps i.e., it had more than doubled. Therefore, the thesis on the stimulating effect of economic integration on the development of intra-industry trade is corroborated in the case of Poland. At the same time, IIT indices of Poland’s trade confirm that the country has managed to modify its production pattern from complementary to competitive and moved towards products based on high quality and high value added, thereby accelerating convergence towards the more developed (mostly) euro area members. Thus, the Polish production and trade structures have become more similar to those of the core EU Member States.

FIGURE 1. Intra-industry trade indices in Polish foreign trade (in %)

Notes: The euro area countries: Austria, Belgium, Germany, Spain, Finland, France, Ireland, Italy, Luxembourg, the Netherlands, Portugal (since 1999), Greece (since 2001), Slovenia (since 2007), Cyprus and Malta (since 2008), Slovakia (since 2009), Estonia (since 2011), Latvia (since 2014).
‘Non-EU’ stands for countries other than the EU Member States (including Croatia).
Source: calculations and figure were made by Łukasz Ambroziak, Ph.D., a member of the research team, on the basis of the Comtrade database.
It must be also added that the increase in the intra-industry trade intensity index was even faster in trade with the non-EU countries (more than twofold in 1999–2014). However, it was mostly due to its much lower level at the beginning of the covered period (a mere 6.3% in 1999). As a result, in 2014 the index exceeding 14% in Poland's trade with the non-EU countries still accounted for less than one-third of the figure for trade with the euro area members.

The economic and financial crisis only temporarily weakened the strength of intra-industry trade links (its adverse effect materialized in trade with the euro area solely in 2009 and it lasted one year longer in trade with the non-euro area EU Member States). It suggests that IIT is rather resilient to cyclical fluctuations [Molendowski, Polan, 2013].

The theory does not offer any suggestion as to what level of IIT intensity is ‘optimal’ in order to be considered a condition of sustainable convergence of business cycles in the countries forming a common currency area. The trend of IIT changes seems more important than the level of IIT intensity. Figure 1 reveals that this is an unambiguously upward trend, even if slow. It confirms the increasing convergence of Poland's business cycle with that in the euro area.

**FIGURE 2. IIT indices in Poland’s trade with specific euro area countries and with the EU Member States outside the euro area in 2014 (in %)**

![Bar chart showing IIT indices for various countries in 2014](image)

*Source: calculations and figure were made by Łukasz Ambroziak, Ph.D., a member of the research team, on the basis of the Comtrade database.*
The above general data are also confirmed by trade with the selected individual EU Member States. Poland’s highest IIT index (53% of the total trade) was noted in relations with Germany – Figure 2. It is a positive phenomenon, especially given that Germany is Poland’s largest trading partner in the EU (25% of trade in 2014) and ranks among the EU’s most advanced economies. High business cycle synchronization with the partner should mitigate adverse effects of a possible demand shock, although it obviously does not eliminate them. The countries which ranked next were France and the Czech Republic – in both cases intra-industry trade accounted for 45% of the total trade with the partner in question. Let us note that one of them was a euro-area country, whereas the other was not. Those were followed by Italy and Hungary – with an index of 42% each. Also in this case their positions with regard to the euro area were different. The high indices of IIT with the Czech Republic and Hungary and, to a lower degree, also with the other EU Member States outside the euro area reflect the historically developed and strong trade links with those economically advanced partners as well as links among affiliates of multinational corporations operating in Poland and the above mentioned countries. Therefore, in accordance with the theoretical indications, Poland’s IIT indices were generally the highest in regard with the most developed EU Member States.

**Conclusions**

The main conclusion from the theoretical part is that a growth in trade results in greater business cycle convergence only in the case of intra-industry trade (IIT). The reason behind is that only this type of trade allows for an increase in the complementarity of countries’ economic structures and makes asymmetric economic shocks less probable.

This general conclusion drawn from the examination of the theoretical literature has been fully justified for Poland by the empirical research. Calculations have revealed that IIT intensity is already rather high in Poland, particularly in trade with the euro area countries. The high index of IIT reflects the increasing similarity of Poland’s business cycle synchronization with the euro area and the complementarity of the Polish economy with the economic structures of the euro area partners. Such a situation reduces the risk of asymmetric shocks and means that Poland is on the path to convergence with the euro area countries. Drawing on Fidrmuc [2006], we can formulate a similar conclusion more cautiously: the business cycle correlation in Poland ‘is sufficiently high as not to hinder membership in the monetary union’. Moreover, Fidrmuc argues that ‘several current members of the euro area appear to have lower business cycle correlations than the new EU members’.

We must stress, however, that the steadily increasing and relatively high IIT intensity in Poland suggests it has satisfied one, but only one, of the important criteria of successful
participation in a monetary union i.e., business cycle correlation. There are also other conditions that must be fulfilled by a country interested in joining a common currency area. One of them is the political will to adopt the common currency.

Notes

1 Author’s email address: ekawec@sgh.waw.pl
2 Adverse effects can be mitigated by high mobility of production factors, particularly by high mobility of labor and a system of financial transfers.
3 De Grauwe [1997] was the first to use the names: the Commission’s and Krugman’s approaches.
4 In a broader sense, the Commission’s approach directly referred to the report of the ‘monetarist’ point of view [Commission of the European Communities, 1990] which suggested that real convergence would be achieved after monetary unification. This approach was later characterized by the endogeneity effect of currency unions [Frankel, Rose, 1996]. The monetarists’ approach was in opposition to the so-called economists’ point of view, which was supported mostly by German researchers. They stressed the necessity of harmonization of economic policies prior to monetary integration [Bąk, Maciejewski, 2015].
5 The endogeneity of currency areas became part of the ‘new’ OCA theory; to compare the traditional OCA and new OCA theories see: Handler [2013].
6 Let us add that according to some specialists, ‘The most recent literature and analyses presented in this paper suggest that the endogeneity effect in the EMU has been frail since its onset’ [Bąk, Maciejewski, 2015].
7 The OCA Index was proposed by Bayoumi and Eichengreen [1997] to assess also the endogeneity of OCA conditions.
8 The best-known publication is probably the seminal paper by Frankel and Rose [1996] in which they pointed out and empirically tested that ‘closer international trade links result in more closely correlated business cycles across countries’ See: Blanes-Cristóbal [2009] and the review of the literature on the impact of the EMU on trade changes by Baldwin et al. [2005].
9 This index is based on bilateral trade flows at the 4-digit level of HS classification (referred to as an industry). Next, bilateral indices for individual countries were aggregated into total trade indices (across industries and by group of partner countries). The Grubel–Lloyd index takes on a minimum value of zero when there are no products in the same industry that are simultaneously imported and exported and a maximum value of 1 (or 100%) when all trade is intra-industry (see more: Ambroziak [2012]).
10 An important explanation of high share of Germany in Poland’s IIT trade is also the high involvement of Polish companies in vertical specialization (composed mostly of an exchange of final and intermediate goods produced in the same industry). The latter fact is related to global value chains managed by transnational corporations whose role in the world economy has been growing rapidly in recent years. Poland is deeply engaged in global value chains in trade with Germany mostly due to foreign direct investments of German companies in the car industry, but also in some other sectors of Polish economy e.g., household equipment (see more: Ambroziak [2016]).
11 This excludes Malta and, ranking close behind it, Cyprus, owing to the very insignificant value of trade. In such a situation, the IIT indices do not properly reflect the scale and character of trade specialization.
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Commission of the European Communities (1990), One market, one money. An evaluation of the potential benefits and costs of forming an economic and monetary union, *European Economy*, No. 44.


Examining the Behavior of Credit Rating Agencies Post 2008 Economic Turmoil

Abstract

The demand for sovereign ratings has increased throughout last decades. Until the 1990’s, credit rating agencies (CRAs) did not rate most of the emerging markets and the focus was almost only on developed countries, however, during this decade the number of sovereigns rated increased dramatically due to addition of emerging markets to the portfolio. The global financial crisis in 2008 led to the loss of credibility of these major credit rating companies. None of these three agencies showed any signal of macroeconomic problems in countries where the financial crisis created devastating macroeconomic results. It is believed that this failure has led credit rating agencies to behave more conservatively. This paper aims to determine whether CRAs tend to behave conservatively after the 2008 global financial crisis. If the downgrading is greater than the worsening of the economic situation in the given economies, then we can infer that CRAs tend to behave more conservatively. The good working model in estimating ratings assigned by CRAs before the crisis failed to estimate the ratings after 2008 crisis. This may have happened due to two reasons. First, as experienced in the aftermath of the former crisis, credit rating agencies may have added new macroeconomic variables in the process of assigning ratings or change the weight assigned to the already existing macroeconomic variables. Second, it is a known fact that ratings emerge from the combination of two distinct information; the quantitative part reflected by macroeconomic indicators and the qualitative judgements of the agency about the sovereign.

Keywords: Credit Rating Agencies, 2008 economic crisis, Turkey

JEL: F34, F63, E44, E47
Introduction

In the last couple of decades, the demand for sovereign ratings has increased substantially. Since the first publication of manuals of statistics related to evaluating the risks of stocks and bonds by John Moody in 1909, corporate ratings have played a key role in measuring credit risk information and distributing this information to counterparts in markets. While corporate ratings have been used for over a century, demand for and supply of sovereign ratings have also increased dramatically. For instance, the number of sovereigns rated by Standard and Poors increased from 7 in 1975 to 131 in 2015 (including the European Union, which is independently treated as a sovereign). Without a doubt, the need for sovereign ratings has emerged from the increasing volume of international borrowings; either by governments with greater default risk or companies in riskier host countries [Al-Sakka, Gwilym, 2009]. Yet the increase in importance of sovereign credit rating also caused credit rating agencies (CRAs) to be discussed both in the political and academic arena. At the academic plane, a vast number of empirical and theoretical studies conducted on predicting the credit rating process, sovereign credit migration, lead and lag in sovereign credit ratings [Alsakka, Gwilym, 2010; Cantor, Packer, 2010; Fuertes, Kalotychou, 2007]. The incompetence in anticipating the defaults on foreign currency denominated debt and economic crisis – the 1994 Mexican peso crisis, the 1997 Asian currency crisis, 1998 Russian ruble devaluation, 2001 credit failure in Argentina, 2008 global financial crisis triggered by sub-prime mortgage crisis – have even increased the interest in CRAs’ work.

The volume of sovereign credit rating significantly increased by the early 1990’s. Until the 1990’s, CRAs did not rate most of the emerging markets and the focus was almost only on developed countries, however, during this decade the number of sovereigns rated by the three rating agencies, namely: Moody’s, Standard & Poors (S&P) and Fitch increased dramatically due to the addition of emerging markets to the portfolio. The ratings assigned by these agencies played a key role not only in the cost of borrowings but also, indirectly, affected the macroeconomic variables via an upgrade or downgrade in rating assigned to government bonds. As in the aftermath of previous foreign currency denominated debt crisis, the global financial crisis in 2008 led to the loss of credibility of these three credit rating companies. None of these three agencies showed any signal of macroeconomic problems in countries where the financial crisis created devastating macroeconomic results. This is unacceptable, since the reputation capital is one of the most important assets of these agencies. The natural outcome of the crisis are the massive downgrades in a group of emerging economies. However, it has been questioned whether it is due to macroeconomic necessities, or it is the result of CRAs becoming more conservative in order to maintaining their reputation power.

These massive downgrades increased the criticism against CRAs and they were accused for over-grading some economies before the crisis [Matousek, Stewart, 2015; Alsakka,
Gwilym, 2010; Skreta, Veldkamp, 2009; Becker, Milbourn, 2011; Bar-Isaac, Shapiro, 2011; Bolton, Freixas, Shapiro, 2012]. Most of these studies tried to explain the mismatch of ratings by putting a focus on the market structure of credit rating. Bolton et al. [2012] and Skreta and Veldkamp [2009] constructed a model for the credit rating market: “ratings shopping”, which is believed to be an inevitable situation in the credit rating market, since issuers can choose which credit rating to purchase after having an insight of ratings and thereby creating incentives to publish only the most favorable ratings [Anand, Thakor, 2011]. Matousek and Stewert [2015] argue that the market structure may affect decision making independence in ratings assignments of individual CRAs and that major three credit rating agencies operate in an oligopolistic market and their activities account for more than 90% of the market. This structure of the market could lead actors to be less concerned about the problems of protecting their long-run reputations.

Why is over- or under-rating important for a sovereign? Nevertheless, credit rating agencies are nothing but only private companies that indicate the risk of default, that is, the probability that debt will not be paid on time. Cantor and Packer [1996] have shown that sovereign yields tend to rise as ratings decline. Their analysis reveals that sovereign ratings effectively summarize and supplement the information contained in macroeconomic indicators and are therefore strongly correlated with market determined credit spreads. In other words, the cost of borrowing by the sovereign is highly sensitive to the credit rating of the sovereign. Although sovereign ratings are notional, the assigned rates have the potential to effect the investment decisions of investors.

This paper aims to determine whether CRAs tend to behave conservatively after the 2008 global financial crisis. If the downgrading is greater than the worsening of the economic situation in the given economies, then we can infer that CRAs tend to behave conservatively. The logic in revealing the behavior of CRAs is simple; first we build a model to estimate the weights assigned to some quantitative economic variables for the pre-crisis period. Second, these weights are employed to estimate the post-crisis ratings. The assumption is: if the behavior of the CRAs did not change, the post-crisis estimations should be as strong as the pre-crisis estimations. A reduction in power of estimation implicitly implies that either; (a) CRAs introduced new quantitative, macroeconomic variables to take a more reliable snapshot of the economy, and thus, the pre-crisis weights became incapable of estimating the post-crisis ratings (b) CRAs’ country specific, private, ad hoc, information gained more importance in assigning the rating.

Literature Review

The corporate bond rating is a prolonged sector, thus, vast of the literature on credit rating deals with rating corporate bonds. Most studies concern estimating the rating
process, biases in ratings and results of assigned rates on issuer’s cost of raising capital. On the other hand, sovereign rating is a relatively new phenomenon. The volume of sovereign rating has increased in the late 1980’s and 1990’s. During this period, some 90 countries have been started to be rated. Thus, the literature on dynamics of sovereign rating dates back to the late 1990’s. The milestone in estimating sovereign ratings is the study of Cantor and Pecker [1996]. They argue that a rating can be decomposed into two separate parts. The first consists of quantifiable variables, of which most are macroeconomic variables. Without explicitly mentioning the weights assigned to these variables, all three rating agencies refer to the same variables. The second part is where unquantifiable variables are used. These variables can be interpreted as the “company view” or “private information” about the sovereign under question. Authors’ estimations revealed that rating assignments can be explained by a small number of well-defined criteria. Furthermore, authors also investigated the role of credit rating on spreads and concluded that credit ratings are strongly correlated with market-determined credit spreads.

After the New Basel Accord (Basel II, 2001) that permits banks to use internal ratings to set the regulatory capital against their credit exposure, studies on rating the corporate risks again attracted scholars and thus the literature on sovereign credit rating could not find itself a room for development. Except some limited publications, most of the literature between 1996 and 2008 are devoted to corporate risk ratings. It was the 2008 sub-prime mortgage crisis in the US that eventually turned out to be a global financial crisis that affected the entire world, and gave impetus to studies related to sovereign credit rating. The global financial crisis have shattered the reputation of credit rating agencies. After the crisis, it became clear that these agencies systematically mispriced risk through inflated rating assignments [Matousek, Stewart, 2015].

In a consequence, most of the studies on sovereign credit rating, either implicitly or explicitly questioned facts like the disproportionate role of credit rating agencies, reputational issues, the oligopolistic character of these agencies and the outcomes changes in credit ratings on cost of borrowing.

In this regard, an important criticism raised against these agencies is the so-called “herding” which may simply be defined as a decision maker taking her own decisions by basically looking at the decisions made by previous decision takers [Banerjee, 1992]. Al-Sakka and Gwilym [2009], by using 90 emerging countries and six credit rating agencies, revealed that the three large agencies had the strongest influence of “Watchlist Status” on the monthly published sovereign rating changes. In a similar study, Lugo, Croce and Faff [2014] examined how credit rating agencies react to decisions of rival agencies in the aftermath of the 2008 global financial crisis. Authors concluded that the first credit rating agency to downgrade was Fitch and for Moody’s and S&P it took relatively longer time to downgrade. An important result of the study is that these two agencies tend to downgrade, if one of them downgrades first, and it is these two agencies that Fitch is mostly influenced from. Authors conclude that results support the predictions on the role of “reputation”
in explaining the herding behavior among credit rating agencies. For further studies related to herding, see Lugo, Croce and Faff [2014], Guettler and Wahrenburg [2007].

Studies on “lead-lag” models are slightly different in nature. In this approach actors follow one leader, whereas in “herding” models all units collectively behave in the same manner. Al-Sakka and Gwilym [2010] found that it is S&P that acts as the most independent credit rating agency and Moody’s is the agency that has a tendency to upgrade sovereigns as early as possible. It was also found that the probability of a change in rating is much higher if there has already been a change in the rating by another agency in the same direction. The most important contribution of the paper is that it also includes Japanese agencies. The results indicated that these agencies tend to lag behind the major three agencies [Alsakka, Gwilym, 2010]. Matousek and Stewart [2015] also employed a lead-lag model; however, their model slightly differed from the Al-Sakka and Gwilym's one [2010]. Instead of assuming homogenous lead-lag relation across countries, authors employ a heterogeneous lead-lag relation which leads them to conduct country-by-country time-series tests. Authors conclude that S&P is the leader agency in the market, it has the greatest reputational capital and other companies look after it when making decisions.

Another intensely studied aspect of the sector is the relation between competition, reputation and credit ratings. Becker and Milbourn [2011] argued that the credit rating industry was dominated by two agencies (Moody’s and S&P) until Fitch entered the market. The increase in number of competing agencies lowered the quality of ratings measured by the increase in levels of ratings, and decrease in correlation between the rating and market implied yields. Mariano [2012] argues that the desire for reputation in an increased competition may cause bias in ratings. The source of this bias is the information private to the agency. If this private information is precise, then ratings reflect the actual situation. However, if the private information is “noisy”, the quality of the rating depends on the market structure. There are two possibilities in this case: (a) in a monopoly, the rating agency simply ignores this noisy information and conforms to public information, (b) under competition the agency has an incentive to contradict public information and pretend that the private information is actually a precise one. Finally, it is even possible for the agency to issue good ratings in attempt to protect market power. Even though the main subject of Mathis et al. [2009] is not sovereign ratings, their analysis of the rating industry deserves mentioning. According to the authors, four facts about the credit rating sector are important in explaining the low quality of (corporate bond) ratings. First, revenues of credit agencies are generated from issuers. Some comment it as “it is as if the referee was paid by one of the teams”. Second, the creation of the status of Nationally Recognized Statistical Ratings Organizations (NRSROs) in 1975 has increased due to the fact that the number of issuers looking for good rating has increased considerably which eventually created a suitable environment for low quality ratings. Third, Basel II accord further increased the need for good ratings.
Data

There are different levels of ratings issued at the sovereign level, namely: foreign currency ceilings for bonds and bank deposits and foreign and local currency government bonds. This paper covers ratings of foreign currency government bonds. Since S&P, Moody’s and Fitch cover roughly 90% of the sector, the analyses are limited to these three major rating agencies. There are 83 sovereigns that are rated by all three major rating agencies, yet, our study covers 65 of them. 17 of the remaining ones were excluded due to lack of data, and China was excluded since it is a true outlier. Beside these gaps, the dataset covers all the EU and OECD countries and accounts for roughly 85% of the global GDP.

TABLE 1. Definitions of variables used in estimating the ratings

<table>
<thead>
<tr>
<th>Variable name</th>
<th>Definition</th>
<th>Unit of measurement</th>
<th>Source</th>
<th>Anticipated sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per capita income</td>
<td>GNP per capita in 2007</td>
<td>Thousands of dollars</td>
<td>World Bank</td>
<td>+</td>
</tr>
<tr>
<td>GDP growth</td>
<td>Average annual real GDP growth on a year-over-year basis, 2005–2007</td>
<td>Percent</td>
<td>World Bank</td>
<td>+</td>
</tr>
<tr>
<td>Inflation</td>
<td>Average annual consumer price inflation, 2005–2007</td>
<td>Percent</td>
<td>Word Bank, IMF</td>
<td>–</td>
</tr>
<tr>
<td>Fiscal balance</td>
<td>Average annual central government budget surplus relative to GDP, 2005–2007</td>
<td>Percent</td>
<td>World Bank, OECD, Eurostat, CIA World Factbook</td>
<td>+</td>
</tr>
<tr>
<td>External balance</td>
<td>Average annual current account surplus to GDP, 2005–2007</td>
<td>Percent</td>
<td>World Bank, OECD, Eurostat, CIA World Factbook</td>
<td>+</td>
</tr>
<tr>
<td>External debt</td>
<td>Foreign currency debt relative to exports, 2007</td>
<td>Percent</td>
<td>OECD, Eurostat, CIA World Factbook</td>
<td>+</td>
</tr>
<tr>
<td>Indicator for economic development</td>
<td>IMF classification as a developed country as of 2007</td>
<td>1: developed 0: developing</td>
<td>IMF</td>
<td>+</td>
</tr>
<tr>
<td>Indicator for default history</td>
<td>Default on foreign currency debt since 1990</td>
<td>1: if defaulted at least once since 1990 0: otherwise</td>
<td>IMF</td>
<td>–</td>
</tr>
</tbody>
</table>

Notes: Definitions are for estimations of 2007 ratings. For the 2011 and 2014 estimations, similar aggregation methodology is employed.

Source: own study.

Our rating prediction relies on variables suggested by Cantor and Packer [1996], thus, we employ the same eight variables in estimating the foreign currency government bond
rates. Table 1 presents eight variables employed in estimating the ratings assigned by the CRAs. Most of the data is gathered from the World Bank data set. OECD, EuroStat, CIA World Factbook data are also used. Some missing data are calculated by “interpolation” conducted by the author.

Quantifying the ratings was the final step in data preparation. It was conducted by employing the conversion table of Ferri, Liu and Stiglitz [1999]. Beside other conversion tables, this conversion rate fits our study most, since the notches are quantified on a 100-point basis, and have three different correspondence columns: linear, non-linear calm and non-linear turbulent. By using these three correspondence values, estimations of different periods (i.e., pre-crisis, post-crisis) could be made more precisely. It is possible, in some cases that the quantitative correspondence of notches assigned by different agencies differs for some countries. In that case the quantitative value is just the average of quantitative correspondence of notches assigned by three agencies. Table 2 presents the conversion rates of rating agencies.

### TABLE 2. Legend for quantitative conversion of credit ratings

<table>
<thead>
<tr>
<th>Moody's</th>
<th>S&amp;P</th>
<th>Fitch</th>
<th>Linear</th>
<th>Nonlinear (calm period)</th>
<th>Nonlinear (turbulent period)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aaa</td>
<td>AAA</td>
<td>AAA</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Aa1</td>
<td>AA+</td>
<td>AA+</td>
<td>95</td>
<td>98.7</td>
<td>99.1</td>
</tr>
<tr>
<td>Aa2</td>
<td>AA</td>
<td>AA</td>
<td>90</td>
<td>97.0</td>
<td>98.0</td>
</tr>
<tr>
<td>Aa3</td>
<td>AA–</td>
<td>AA–</td>
<td>85</td>
<td>95.2</td>
<td>96.9</td>
</tr>
<tr>
<td>A1</td>
<td>A+</td>
<td>A+</td>
<td>80</td>
<td>93.2</td>
<td>95.6</td>
</tr>
<tr>
<td>A2</td>
<td>A</td>
<td>A</td>
<td>75</td>
<td>91.7</td>
<td>95.2</td>
</tr>
<tr>
<td>A3</td>
<td>A–</td>
<td>A–</td>
<td>70</td>
<td>89.3</td>
<td>86.4</td>
</tr>
<tr>
<td>Baa1</td>
<td>BBB+</td>
<td>BBB+</td>
<td>65</td>
<td>87.1</td>
<td>85.8</td>
</tr>
<tr>
<td>Baa2</td>
<td>BBB</td>
<td>BBB</td>
<td>60</td>
<td>84.4</td>
<td>85.2</td>
</tr>
<tr>
<td>Baa3</td>
<td>BBB–</td>
<td>BBB–</td>
<td>55</td>
<td>79.5</td>
<td>71.1</td>
</tr>
<tr>
<td>Ba1</td>
<td>BB+</td>
<td>BB+</td>
<td>50</td>
<td>75.0</td>
<td>59.3</td>
</tr>
<tr>
<td>Ba2</td>
<td>BB</td>
<td>BB</td>
<td>45</td>
<td>65.4</td>
<td>40.9</td>
</tr>
<tr>
<td>Ba3</td>
<td>BB–</td>
<td>BB–</td>
<td>40</td>
<td>56.9</td>
<td>42.9</td>
</tr>
<tr>
<td>B1</td>
<td>B+</td>
<td>B+</td>
<td>35</td>
<td>54.3</td>
<td>35.0</td>
</tr>
<tr>
<td>B2</td>
<td>B</td>
<td>B</td>
<td>30</td>
<td>33.8</td>
<td>30.9</td>
</tr>
<tr>
<td>B3</td>
<td>B–</td>
<td>B–</td>
<td>25</td>
<td>25.0</td>
<td>25.0</td>
</tr>
<tr>
<td>Ca1</td>
<td>CCC+</td>
<td>CCC</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Ca2</td>
<td>CCC</td>
<td>CCC</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Ca3</td>
<td>CCC–</td>
<td>CCC–</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Ca</td>
<td>CC</td>
<td>CC</td>
<td>5</td>
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<tr>
<td></td>
<td>C</td>
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</tr>
</tbody>
</table>

Source: own study.
**Methodology**

Rating agencies never reveal the exact quantitative methodology of assigning ratings to sovereigns; yet, they give clues by their publications on the industry every so often. Based on these publications, Cantor and Packer [1996] have mentioned eight macroeconomic criteria that are believed to play key role in assigned ratings. However, it is a well-known fact that agencies also employ qualitative judgements based on a set of country specific, ad hoc, information, rather than only employing quantitative variables [Ferri, Liu, Stiglitz, 1999]. Therefore, the actual rate of a sovereign is composed of two types of inputs. First, the rating based on quantitative variables, which monitors the current macroeconomic status of the sovereign, and second, the qualitative part which reflects the individual qualitative judgement of the rating agency. A formula with weights assigned to these two distinct parts may be written as follows:

\[ \text{Ratings} = w_q \text{Ratings}_q + w_j \text{Ratings}_j \]  
\[ w_q + w_j = 1 \]

where, \( \text{Ratings} \) is the actual rating assigned to a sovereign by an agency, \( w_q \) and \( w_j \) are weights of quantitative variables and qualitative judgements assigned by the agency respectively, and \( \text{Ratings}_q \) and \( \text{Ratings}_j \) are ratings based on quantitative variables and qualitative judgement of the agency. The formula simply implies that the actual rating is nothing but just a weighted average of quantitative and qualitative ratings. Weights of quantitative variables and qualitative judgements are not disclosed by agencies; nevertheless, by comparing the assigned rating and estimated rating, it is possible to end up with an inference about the qualitative judgement of the agency. For instance, if the actual rating is greater than the estimated rating, we may infer that the qualitative judgement of the agency for that sovereign is negative and that the weight assigned to qualitative judgement is greater than the weight of the quantitative variables.

The econometric model to estimate the ratings is a multiple regression model where ratings are the endogenous variable and those eight variables mentioned above are the exogenous variables. The model can be written as:

\[ \text{Ratings}_q = \alpha + \beta_i QV_i + \epsilon_i \]

where \( \alpha \) is the intercept, \( \beta_i \) is the partial slope coefficient for the quantitative variable \( QV_i \), \( \epsilon_i \) is the random error term, which can be interpreted as the qualitative judgement of the agency on that sovereign.
Results

Our aim in this paper is to determine whether CRAs have behaved extremely conservative after the 2008 global financial crisis. This aim is achieved by comparing the change in the weight of qualitative judgements of agencies over time, and especially, between pre-crisis and post-crisis periods. The main question to be answered is how did the 2008 financial crisis change qualitative judgements? A subsequent question to be answered is: if the qualitative judgements were not to change, what should the ratings of the sovereigns be? In order to answer these questions, equation 3 was estimated in three different years, 2007 for the pre-crisis period and 2011 and 2014 for post-crisis period. Table 3 presents the results of 2007 estimation. In the second column of the table, results of the regression using linear conversion are presented. The third and fourth columns are devoted to the results of non-linear conversion with calm period and turbulent period correspondences.

TABLE 3. Results of pre-crisis estimation

<table>
<thead>
<tr>
<th>Dependent variable: average ratings in 2007</th>
<th>Linear conversion</th>
<th>Non-linear conversion (calm period)</th>
<th>Non-linear conversion (turbulent period)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>69.36315</td>
<td>90.26973 (15.53)*</td>
<td>89.88263 (12.64)*</td>
</tr>
<tr>
<td>Per-capita income</td>
<td>0.000396</td>
<td>0.00032 (2.08)*</td>
<td>0.000388 (2.07)*</td>
</tr>
<tr>
<td>GDP growth</td>
<td>–0.31818 (–0.49)</td>
<td>0.39751 (0.50)</td>
<td>1.197725 (1.23)</td>
</tr>
<tr>
<td>Inflation</td>
<td>–1.65896 (–2.85)</td>
<td>–1.89303 (0.72)</td>
<td>–3.57399 (–4.04)*</td>
</tr>
<tr>
<td>Fiscal balance</td>
<td>43.88018 (2.41)</td>
<td>21.33392 (0.94)</td>
<td>28.84115 (1.04)</td>
</tr>
<tr>
<td>External balance</td>
<td>–0.09708 (–0.67)</td>
<td>–0.28492 (–1.59)</td>
<td>–0.43997 (–2.01)*</td>
</tr>
<tr>
<td>External debt</td>
<td>–0.18687 (–0.41)</td>
<td>–0.53296 (–0.95)</td>
<td>–0.69536 (–1.016)</td>
</tr>
<tr>
<td>Development</td>
<td>14.91918 (3.49)</td>
<td>0.707556 (0.133)</td>
<td>0.56136 (0.088)</td>
</tr>
<tr>
<td>Default</td>
<td>–7.38602 (–2.43)</td>
<td>–8.74856 (–2.27)</td>
<td>–10.3892 (–2.21)*</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.85</td>
<td>0.57</td>
<td>0.63</td>
</tr>
<tr>
<td>Number of Observations</td>
<td>65</td>
<td>65</td>
<td>65</td>
</tr>
</tbody>
</table>

Notes: t values are in parenthesis. * indicates significance at 5 percent. Source: own study.
Results of the 2007 estimation reveal that it is the linear conversion that has the highest prediction precision (R-squared = 0.85) of the individual slope coefficients per capita income, inflation and development and default are statistically significant. The remaining three variables, GDP growth, external balance and external debt are not statistically significant; yet the sign of GDP growth does not satisfy the anticipated sign. Our results are in line with Cantor and Packer’s [1996]; thus, the authors’ explanation for insignificant fiscal balance and external debt coefficients may be accepted as valid for our results. Cantor and Packer [1996] argue that in many cases the market forces poor credit risks into apparently strong fiscal and external balance positions, diminishing the significance of fiscal and external balances as explanatory variables.

How good is our pre-crisis model? Table 4 presents the estimation performance of the model. The regression does not yield any prediction errors that exceed two notches; furthermore, errors that exceed one notch occur in the case of only four countries. Forty-one grades out of sixty-five are an exact match. These results indicate that for the post-crisis period, the model we built has considerable power in estimating the assigned rates, given that the 100-point basis conversion of credit ratings are performed by employing linear conversion correspondences.

<table>
<thead>
<tr>
<th></th>
<th>Exact match</th>
<th>One notch</th>
<th>Two notches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exact match</td>
<td>41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over-valued</td>
<td></td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Under-valued</td>
<td></td>
<td>11</td>
<td>2</td>
</tr>
</tbody>
</table>

Notes:
One notch under-valued countries: Bahrain, Brazil, Colombia, Croatia, Iceland, Israel, Norway, Philippines, Romania, Switzerland, Ukraine.
One notch over-valued countries: Bulgaria, Greece, Latvia, Lithuania, Morocco, New Zealand, Poland, Spain, Thailand.
Two notches under-valued countries: Korea, Turkey.
Two notches over-valued countries: Chile, Singapore.
Source: own study.

Regression results of the 2011 and 2014 estimations are presented in Table 5. Since the explanatory power of linear conversion is greater than that of the non-linear conversion rates, in the post-crisis period estimations are carried throughout linear conversion only.

The foremost result of post-crisis estimations is the decrease in the explanatory power of the quantitative variable on explaining the assigned rates. As stated earlier, the unexplained part of ratings may be interpreted as the qualitative judgements of the agency on the sovereign under question. The reduction in R-squared, thus, implies that after the crisis, credit rating agencies assign more weight to qualitative judgements.
Another interpretation of the decrease in the explanatory variable is that weights of other quantitative variables may have been increased. That is most probably because the credit rating agencies are highly criticized for not publishing reliable ratings before the crisis, and that these misleading ratings (presumably over-valued sovereigns) even further deepened the global crisis. The reason for misleading ratings, in some cases, was lacking to assign deserving importance to a quantitative (macroeconomic) variable. For instance, after the East Asian financial crisis, Fitch-IBCA, in an industry comment published in January 1998, admitted that they missed the importance of short-term debt associated with foreign currency lending. Although not officially published yet, the same result may have had occurred again, and credit rating agencies may be paying more attention to one or more other quantitative variables which they did not before the 2008 global financial crisis.

### TABLE 5. Results of post-crisis estimations (2011 and 2014)

<table>
<thead>
<tr>
<th></th>
<th>Dependent variable: average ratings, linear conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2011</td>
</tr>
<tr>
<td>Intercept</td>
<td>63.60098 (13.77)*</td>
</tr>
<tr>
<td>Per-capita income</td>
<td>0.000651 (3.27)*</td>
</tr>
<tr>
<td>GDP growth</td>
<td>0.511338 (0.87)</td>
</tr>
<tr>
<td>Inflation</td>
<td>−1.90757 (−2.89)*</td>
</tr>
<tr>
<td>Fiscal balance</td>
<td>−0.18926 (−0.0066)</td>
</tr>
<tr>
<td>External balance</td>
<td>0.453071 (1.41)</td>
</tr>
<tr>
<td>External debt</td>
<td>−1.78855 (−2.12)*</td>
</tr>
<tr>
<td>Development</td>
<td>11.70472 (2.13)*</td>
</tr>
<tr>
<td>Default</td>
<td>−3.39947 (−0.822)</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.76</td>
</tr>
<tr>
<td>Number of observations</td>
<td>65</td>
</tr>
</tbody>
</table>

*Notes: t values are in parenthesis.*  
*indicates significance at 5 percent.*  
*Source: own study.*
Another point to mention in comparing the pre-crisis and post-crisis regressions is the change in significance of variables. Per capita income, inflation coherently preserved their significance in all three regressions. Development kept its significance in both pre-crisis and 2011 estimations; yet it lost its significance in 2014. On the contrary, GDP growth rate, which used to be insignificant in 2007 and 2011, became significant in the 2014 estimation. External balance is an insignificant variable in all three regressions. External debt, on the other hand, is an insignificant variable in 2007, however, in the post-crisis period, it gained significance in both 2011 and 2014 estimations.

Perhaps, the change in significance of the default factor is the most important in pre- and post-crisis periods. Apparently, the default history was a significant indicator of ratings before the 2008 global financial crisis; yet, the regression results indicate that the default is no more a significant variable in rating assignments. A plausible interpretation is that since most of the developing countries are downgraded without considering whether these countries advanced default or not, it lost its significance in rating assignments. Actually, credit rating agencies were criticized on the same aspect in the post-crisis periods of former dominant economic crises like East Asian crisis, Mexican currency crisis [Cantor, Packer, 1996; Ferri, Liu, Stiglitz, 1999; Guettler, Wahrenburg, 2007].

We have one more question to answer: what if the credit rating agencies did not behave as cautiously as they did after the 2008 crisis? More precisely, if we accept the 2007 estimation results as the true determinants with true weights in credit rating assigning, how would the ratings of sovereigns look like in 2014.

Table 6 presents the differences in estimated and true credit ratings. The second and sixth columns of the table represent the average of ratings of three major credit rating agencies on a linear 100-basis conversion. The third and seventh column are devoted to the estimated credit ratings by employing the values of 2014 and coefficients of 2007 estimation and finally, the fourth and eight columns represent the difference in assigned rating and estimated rating in notches. The positive (negative) sign in these columns implies that the assigned rating is greater (lower) than the estimated rating, and zero indicates a correct match.

Apparently, twenty-nine out of sixty-five countries are graded below the estimated rate compared to only thirteen in 2007. There are only fourteen countries whose ratings are equal to the estimated ratings (exact match), and finally twenty-two countries are rated above the estimated rate. These preliminary summaries deserve deeper analysis. There are only eleven countries which are in the “developed countries” league; yet, the assigned rates are below the estimated rates. The average under-rating in this group of countries is 4.81 notches. On the contrary, in the league of “developing countries”, there are 16 under-rated countries. The average under-rating in these countries accounts to some 2.06 notches. The difference between under-ratings of developed and developing countries mainly originates from massive downgrading for Cyprus, Greece, Iceland and Italy, all of whom are in the developed countries league.
### Table 6. Differences between estimated and actual ratings

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>20.00</td>
<td>47.30</td>
<td>-3</td>
<td>Kuwait</td>
<td>90.00</td>
<td>81.57</td>
<td>+2</td>
</tr>
<tr>
<td>Australia</td>
<td>100.00</td>
<td>92.64</td>
<td>+2</td>
<td>Latvia</td>
<td>70.00</td>
<td>69.76</td>
<td>+1</td>
</tr>
<tr>
<td>Austria</td>
<td>96.67</td>
<td>91.93</td>
<td>+1</td>
<td>Lithuania</td>
<td>70.00</td>
<td>66.57</td>
<td>+1</td>
</tr>
<tr>
<td>Bahrain</td>
<td>55.00</td>
<td>70.41</td>
<td>-3</td>
<td>Luxembourg</td>
<td>100.00</td>
<td>119.44</td>
<td>0</td>
</tr>
<tr>
<td>Belgium</td>
<td>88.33</td>
<td>95.01</td>
<td>-2</td>
<td>Malaysia</td>
<td>70.00</td>
<td>64.90</td>
<td>+2</td>
</tr>
<tr>
<td>Brazil</td>
<td>51.67</td>
<td>53.86</td>
<td>0</td>
<td>Malta</td>
<td>70.00</td>
<td>86.38</td>
<td>-3</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>55.00</td>
<td>60.72</td>
<td>-1</td>
<td>Mexico</td>
<td>66.67</td>
<td>56.66</td>
<td>+2</td>
</tr>
<tr>
<td>Canada</td>
<td>100.00</td>
<td>95.04</td>
<td>+1</td>
<td>Mongolia</td>
<td>30.00</td>
<td>39.47</td>
<td>-1</td>
</tr>
<tr>
<td>Chile</td>
<td>83.33</td>
<td>59.25</td>
<td>+4</td>
<td>Morocco</td>
<td>53.33</td>
<td>58.75</td>
<td>-1</td>
</tr>
<tr>
<td>Colombia</td>
<td>60.00</td>
<td>62.50</td>
<td>0</td>
<td>Netherlands</td>
<td>100.00</td>
<td>95.36</td>
<td>0</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>48.33</td>
<td>53.48</td>
<td>0</td>
<td>New Zealand</td>
<td>93.33</td>
<td>91.55</td>
<td>0</td>
</tr>
<tr>
<td>Croatia</td>
<td>46.67</td>
<td>61.26</td>
<td>-2</td>
<td>Norway</td>
<td>100.00</td>
<td>111.50</td>
<td>0</td>
</tr>
<tr>
<td>Cyprus</td>
<td>36.67</td>
<td>89.79</td>
<td>-11</td>
<td>Peru</td>
<td>66.67</td>
<td>57.45</td>
<td>+5</td>
</tr>
<tr>
<td>Czech Rep.</td>
<td>81.67</td>
<td>85.49</td>
<td>-1</td>
<td>Philippines</td>
<td>58.33</td>
<td>61.12</td>
<td>0</td>
</tr>
<tr>
<td>Denmark</td>
<td>100.00</td>
<td>99.62</td>
<td>0</td>
<td>Poland</td>
<td>70.00</td>
<td>63.40</td>
<td>+2</td>
</tr>
<tr>
<td>Ecuador</td>
<td>28.33</td>
<td>54.71</td>
<td>-5</td>
<td>Portugal</td>
<td>50.00</td>
<td>86.65</td>
<td>+7</td>
</tr>
<tr>
<td>El Salvador</td>
<td>36.67</td>
<td>59.55</td>
<td>-1</td>
<td>Romania</td>
<td>55.00</td>
<td>65.13</td>
<td>-2</td>
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<tr>
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<td>Russia</td>
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<td>95.23</td>
<td>-1</td>
<td>Saudi Arabia</td>
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<td>73.50</td>
<td>+3</td>
</tr>
<tr>
<td>France</td>
<td>90.00</td>
<td>88.48</td>
<td>+1</td>
<td>Singapore</td>
<td>100.00</td>
<td>92.23</td>
<td>+2</td>
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<tr>
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<td>0</td>
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<td>84.82</td>
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<td>89.96</td>
<td>-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: * The average three credit rating agencies on a hundred-basis scale.
Source: own study.
When comparing the averages of under- and over-ratings, it becomes evident that the credit rating agencies tend to under-value sovereigns in the post-crisis period. In other words, credit rating agencies became excessively conservative in the post-crisis period. The averages of under- and over-ratings for the entire sample amount to 3.18 and 2.17 notches, respectively. Considering the above, it may be argued that if 2007 weights remained unchanged, the average rate of the sample of sixty-five sovereigns would have been almost one notch (3.18–2.17) above of what we have now. Furthermore, it is a fact that those countries which were severely affected by the 2008 global financial crisis were downgraded more than it would result from their worsening macroeconomic indicators [Ferri, Liu, Stiglitz, 1999].

Another possible reason for the extreme downgrading may be the change in either weight or combination of macroeconomic fundamentals that credit rating agencies consider in determining the rating of a country. Although not officially published by the agencies, it is known from past experience that when their ratings fail to reflect the economic fundamentals of a sovereign, they tend to add new variables or increase the weight of already existing macroeconomic variables in the equation.

**Conclusions**

In this paper, we addressed the increasing conservative nature of the credit rating agencies after the 2008 global financial crisis. The economic model, as well as variables are inherited from previous studies on the issue. The model has been estimated for three periods; 2007 to represent the pre-crisis and 2011 and 2014 to represent the post-crisis behaviors of the three major credit rating agencies: Standard & Poors, Fitch and Moody’s. Results indicated that in the pre-crisis period suggested macroeconomic variables explained the ratings of sovereigns to a considerable extent. With some exceptions, the model correctly estimated the ratings of sovereigns. On the contrary, the explanatory power of the previously used macroeconomic variables decreased considerably in the post-crisis period. This may have happened due to two reasons. First, credit rating agencies may have added new macroeconomic variables in the process of assigning ratings or changed the weight assigned to the already existing macroeconomic variables. Second, it is a known fact that ratings emerge from the combination of two distinct parts; the quantitative one reflected by macroeconomic indicators and the qualitative judgements of the agency about the sovereign. It is also possible that these qualitative judgements gained more importance in determining ratings assigned to the sovereigns. This may have occurred due to the fact that credit rating agencies tend to maintain their reputation capital, and that being more conservative in assigning the rates somehow secures it.
The conservative nature of credit rating agencies becomes visible by showing the difference in actual and estimated ratings which employ the coefficients of 2007 estimation. Results indicate that sovereigns would have been assigned higher average ratings if the 2007 weights were kept unchanged. In the sample of sixty-five countries, the average level of ratings would have been roughly one notch above what we actually have.

Notes

1 Author’s email address: cluslu@yeditepe.edu.tr
2 Belgium, Cyprus, Czech Republic, Greece, Iceland, Ireland, Israel, Italy, Japan, Malta and Slovak Republic.
3 Argentina, Bahrein, Bulgaria, Colombia, Costa Rica, Croatia, Ecuador, El Salvador, Guatemala, Hungary, Mongolia, Morocco, Romania, Tunisia, Ukraine and Vietnam.

References


A Dyadic Perspective on Determinants of Entry Choices in the Global Hospitality Industry

Abstract

This paper discusses the firm-level determinants of international hotels’ foreign markets entry choices, contrasting acquisition with management and franchise contracts, based on a resource-dependency perspective and appropriability theory. It points out that brand equity, relatedness of products and market segmentation, partner-specific knowledge of hotels, international experience, and the duration of proprietary knowledge impact hotels’ decisions on how to enter a foreign market. In addition, the paper suggests the existence of entry choices sequence favorable to acquisition probability after the end of management contract when the franchisors’ or management companies’ proprietary knowledge attenuates. Contract activity is likely to be renewed after the acquisition, once the management company has established a new form or a higher level of proprietary knowledge.

Keywords: cross-border acquisition, contract, hotel, entry strategy
JEL: M16
Introduction

Global investment in acquisitions has reached unprecedented levels in recent decades [Barkema, Schijven, 2008]. It has become a prevalent growth strategy for companies and a way to acquire new resources in order to meet the swiftly shifting demand of the competitive global market. The lodging industry is no exception, experiencing an extraordinary level of consolidation as acquisitions soared to record levels in the late 1990s [Evenett, 2004]. Meanwhile, another type of entry choices, namely management contracts and franchise agreements have also been widely employed by multinational hotel companies in recent decades. Together with cross-border acquisitions, they have inevitably become important means for hotel companies to grow and expand internationally [Editor, Cornell Hospitality Quarterly, 2009].

Previous research on the expansion strategies in the hospitality industry has mainly been focused on the initiating hotel company which takes action to acquire or enter into contract with an individual target hotel or a hotel company with multiple properties. This leaves plenty room for holistic studies. First, given that the contract or acquisition involve at least two hotels, the discussion from focal-hotel perspective merely provides a unitary analysis of a dyadic event [Zajac, Olsen, 1993]. A dyadic view can be applied in the study of entry choices. Second, the categorization of entry choices is always based on equity and non-equity explored what happens after multinational hotel companies choose an expansion strategy. It is therefore of great importance to study their next moves depending on the changing situation.

Our paper seeks to answer the following questions. Under what circumstances do hotel companies use contracts (e.g., franchise agreement, management contract) or acquisitions as foreign market entry strategies? Could we view the activity from a dyadic perspective? Can we find special determinants on hotel companies’ entry choices? Is there any tendency toward strategy change after the multinational hotels’ first entry? Based on the literature review on hotel companies’ foreign entry modes, we applied resource dependence perspective and appropriability theory to answer the above questions. In the next section, we analyze the differences of acquisitions and contracts in the global hospitality industry, followed by the literature review on determinants of hotel companies’ entry choices. The fourth section lays theoretical foundations and presents our propositions. We concluded the paper by contributions and implications for the further research.
Acquisition and Contract in Global Hospitality Industry

Definitions

There are a few concepts we need to clarify in the paper, given the special, if not unique characteristics of the hotel industry. Contract refers to a franchise agreement, or a management contract, where the initiating hotel company generally makes no upfront capital expenditures in order to build or buy the assets in question [Teece, 1986]. A franchise agreement means the authorization given by a hotel company to another corporation or an individual to sell its unique products and services [Angelo, Vladimir, 2007]. Management contract refers to a “written agreement between an owner and an operator of a hotel or motor inn by which the owner employs the operator as an agent to assume full responsibility for operating and managing the property” [Eyster, 1988]. An initiating hotel company is the company that takes action to enter the hotel industry in a host country. A target hotel company is the entity or asset that is being investigated by the initiating hotel company in order to answer the question whether it is worth acquiring it, or entering into contract with it, in the host country. Hotel dyads are the relationships between the initiating hotel company and the target hotel company as defined above.

Acquisitions in Hospitality Industry

Typically, there are two types of acquisitions in the hotel industry: the acquisition of physical assets and the acquisition of a brand, consisting of brand names, brand image and brand equity. In other words, the two types of acquisitions in hotel industry include acquiring tangible property (building, land, equipment) and intangible assets such as brand names, operations and management systems. Hotel companies in the first situation seek to obtain location advantages while in the second one they wish to acquire more ownership and internalization advantages. Ownership advantages include knowledge of guests requirements, strategic planning, and reservation systems. The location advantages consist of the size and nature of the city or resort in which the hotel is to be located, the infrastructure in the region, and the perception of the region as an attractive travel destination [Johnson, Vanetti, 2005].

Location Advantages

The overall hotel’s product is composed of both tangible and intangible sub-products. The predominant product is service which occurs when the customer and the service provider meet, either in person or through service communications. A large volume of customers will tend to agglomerate in particular areas such as tourist destinations (particularly beach or waterfront locations), airports, highway roadsides or interchanges, downtown city centers or suburban business centers. These are the types of locations that are able to attract enough traffic for a profitable operation. This implies that hotels have
limited options for expansion. Once acquiring hotel companies obtain the target hotel’s location, they can begin to control the source of supply.

Ownership Advantages

One of the reasons for acquisition is when the owner of the targeted hotel(s) has not kept up investments in maintenance or modernization, or when the target hotel(s) are in need of greater cash flow. Acquiring hotel companies may also look to take over trophy hotels (renowned or historic properties, often in advantageous locations) with an undervalued price due to market inefficiency. For the target hotel(s), cash flow is the principal benefit as well as the motivation of being acquired via merger and acquisition (M&A). Trophy hotels are often those whose property value have dropped during a recession and the resultant period of oversupply in relation to demand. For instance, Hilton Corporation’s strong cash position allowed it to acquire Hilton International in 2006. Marriott acquired 49% of Ritz-Carlton at an advantageous time and ITT Sheraton acquired Ciga, a luxury Italian chain, for just 530 million USD in 1994.

Hotel companies can gain geographical presence and inventory control through acquisitions. The unique nature of the hotel industry manifests in the need to be physically present at a customer-desirable location in order to deliver its goods and services. Thus, it is both time-consuming and involves high capital investment to build new hotels. Consequently, acquisition as well as franchise/management activities become an essential tool for expansion as it enables a quicker and less-expensive way to expand in general.

Moreover, brand equity (synergy of reputation, reservation system), well established operational and management systems, and network in local region are also ownership advantages available for acquiring and target hotel companies.

Internalization Advantages

After acquisition, there may arise considerable opportunities to reduce costs or enhance revenues by consolidating the central reservation systems; combining marketing, advertising, accounting, and human-resources functions, using cross-selling, and eliminating redundant computer and system operations as well as duplicate managerial jobs. Such synergistic gains in a hotel environment can translate into higher occupancies, higher ADRs (average daily rates), and a higher RevPar (revenue per available room), as well as lower operating expenses. Meanwhile, more efficient distribution may even strengthen a hotel company’s brand equity, and support its marketing efforts.

Although international expansion through acquisitions offers significant value-creation opportunities for firms, it also presents significant challenges that can jeopardize the potential gains, such as liability of foreignness and “double-layered acculturation” [Barkema, Bell, Pennings, 1996; Eden, Miller, 2004].
Contract in the Hotel Industry

The reasons for choosing management contracts and franchises are mainly derived from the fundamental characteristics of the hotel products themselves, largely intangibles delivered twenty-four hours a day and seven days per week by a well-trained and highly-service-oriented staff. It therefore becomes clear that managing a hotel requires very special expertise. Prior impressions of familiar hotel brands frequently determine guests’ purchase decisions. So, an established brand image, experienced operations and management systems, training programs, marketing programs and reservation systems are crucial for hotel owners to succeed. Franchising and management contracts therefore are two of the most broadly-used expansion strategies in the international hotel industry to acquire valuable brand image and specialized expertise. Moreover, the simultaneity of production and consumption, a key characteristic of the hospitality business, limits customers, to a certain extent, from investigating the experience ahead of time.

Franchising presents advantages to both parties. Franchisors obtain more geographical presence with low risks. Franchisees get support from franchisors on location selection, credit, construction, fixtures and equipment, training, pre-opening and opening activities, marketing activities, economies of scale, and consistent support. Management contracts are widely used in the global hotel industry as a mechanism for separating the ownership of hotel properties and their management. It relieves the owners of day-to-day operating responsibilities and benefits them by bringing in proven operations and management systems as well as a good reputation (brand equity). Managing company can control a large number of properties with a relatively limited investment. And typically, its brand has a large geographical presence with lower financial investment and less financial risk than the owners’ brand by itself. Nevertheless, the managing company might be confined by limitations in the owner’s funding.

Acquisition vs. Contract

Acquisition is a way of creating value. Acquisitions use synergy between the target and acquiring hotels. In other words, the whole will be greater than the sum of the parts. Since cross-border acquisition generally requires significant financial investment from the initiating hotel company, it is not easy to back out if cooperation or integration between two parties becomes difficult. Acquisition involves a final irreversible transaction of ownership transfer. In contrast, the contract can consist options to complete integration through acquisition. Parties can also choose to terminate the contract if they are not satisfied with the relationship.

Contract rather produces value than creates it. Franchisors could help franchisees generate profit by spreading brand names, operation and management system, thus realizing the value production. Due to the nature of the contract, ownership and management are separated. That is, the financial issues and operational issues are executed by different parties. This division can lead to problems like power of control. In contrast, acquisition
can provide total control or relatively strong control (in cases of partial acquisition). Contractual agreements can be seen as entry modes that improve the level of flexibility for firms to leave a destination market if they are not able to adapt to an unfamiliar location [Kim, Hwang, 1992].

Acquisition and contract have two opposite ways of dealing with resources. Hotel companies conducting acquisition explore a target hotel company’s resources, while those that expand through contract exploit their own unique resources. In the case of acquisition, the resources of both parties tend to be integrated and synergized. For the initiating firm, the action of acquisition is one of appropriating or exploiting resources such as the target hotels’ geographical advantages or local customer relationship systems. In contrast, in the event of contract, initiating firms transfer their knowledge, reservation systems, and customer relationship management systems and so forth to the target hotel(s). Such activities depend on spending own resources and exploring the other party’s resources rather than on exploitation or appropriation. Our model divides the entry choices into acquisition and contract based on this rationale.

**Previous Research on Determinants of Cross-Border Acquisition and Contract**

Generally speaking, researchers studied the determinants of entry modes on two levels, namely, country, and the second – industry and firm. Scholars [e.g., Morschett et al., 2010; Rodriguez, 2002] who studied the country level found that the determinants of a firm’s entry strategy include cultural distance, market attractiveness, uncertainty about the legal environment of the host country, the host country risk, economic development and state of competitiveness, home country’s culture, firm size, international experience, and degree of internationalization. Concerning firm and industry levels, Doherty [2007] found that the combination of both organizational factors (i.e., international retailing experience, availability of financial resources, presence of a franchisable retail brand, company restructuring and influence of key managers) and environmental factors (i.e., opportunistic approaches, local market complexities, domestic competitive pressures and availability of potential franchise partners) encourage service companies to choose franchising as entry mode.

Some researchers deem entry mode as a means of acquiring or exploiting knowledge or firm resources. Considering cross-border entry mode as a means of obtaining a firm’s knowledge base and resources for local and foreign competition [Meyer et al., 2011], Pla-Barber, Villar, and León-Darder [2014] found that cultural distance and brand strength influence the level of resource augmenting modes (e.g., foreign direct investment). Applying resource based view, Choi [2007] found that entry mode choices are associated
with intangibility level. When the level of intangibility goes up, lodging firms’ entry mode choices shift from joint venture to acquisition to franchising to Greenfield to management contract. Clarke and Chen [2007] suggested that firms could choose wholly-owned subsidiary if they would benefit from high technological know-how, while firms with good managerial skills may consider franchise.

Some researchers conducted case studies on hotels’ foreign entry modes. For example, Cunill and Forteza [2010] modified transaction cost theory based on institutional differences to explore the determinants on hotel’s foreign expansion to Caribbean and the Gulf of Mexico in the case of Balearic hotel chain. Boyen and Ogasavara [2013] studied a case on Brazil as host country and observed the entry mode patterns. They found out that lodging companies favor non-equity entry mode such as management contract and franchising, particularly in their first entry to Brazil. Quer, Claver and Andreu’s [2007] empirical evidence shows that cultural distance decreases the possibility of equity entry modes, while firm profitability and financial availability encourage higher level of equity entry mode.

Several studies on acquisition and contracts selection determinants are worth mentioning. Dunning and McQween [1982] utilized the eclectic paradigm to examine the international hotel chains. They argue that these companies prefer to non-equity entry for expansion. Fladmoe-Lindquist and Laurent [1995] applied agency theory and transaction cost economics to show that the entry choice of international franchising is positively associated with monitoring costs but negatively associated with asset specificity of the service firm, for instance, brand name. Kehoe [1996] argued that the low-cost capital from non-chain sources offers a favorable explanation for the existence of management agreements that can be chosen over company ownership in the case of hotel properties with large capital inputs.

Contractor and Kundu [1998] used empirical evidence to establish the principal factors affecting hotel companies’ cross-border entry modes. They found that management contracts and franchising accounted for 66% of foreign operations. This indicates that contractual control is relatively strong in those modes. Kundu [1994] found that firm-specific factors such as size, international experience, and country-specific factors such as geographic proximity explain the majority of the variation in the degree of internationalization of multinational hotel chains. Factors such as tourism receipts, exports, inward investment, and country risk were also found to be statistically significant in explaining the differing levels of foreign direct investment in the hotel sector.

Foreign entry modes have been widely examined in the past few decades. However, the previous studies have not explored the determinants of lodging companies’ foreign entry modes in a dynamic and longitudinal way. Our research aims to close this gap by taking a holistic and dyadic view by looking at hotel dyads in a longitudinal way, instead of merely looking at the expansion strategies from the perspective of the initiating hotel company. Furthermore, rather than categorizing hotel expansion strategies into equity based and non-equity based, we classified the expansion strategy according to the approaches
hotel companies use to allocate the resources (e.g., integration or contract), particularly for the hospitality industry. We take resource dependence perspective and appropriability theory to build up our propositions.

Theories and Propositions

Resource Dependence Perspective

Resource dependence perspective posits that firms, embedded in relationships and influenced by the external environment, can use acquisitions to enhance their control of the resources needed for survival and prosperity [Pfeffer, Salancik, 1978]. A hotel's supply capacity is limited since the supply of all services must be produced at the point of contact with a customer [Olsen, West, Tse, 2008]. In other words, service can only be delivered simultaneously at certain locations where customer traffic appears, such as city centers, airports and resorts. Thus, the limited locations turn out to be critical and are limited resources. For a foreign initiating hotel company seeking a new market in the host country, the target hotel’s reservation system, customer relations management system, as well as the local network with suppliers, customers and government are dependency resources that can be internalized, and the hotel companies’ dependence on its environment decreased.

The process of cross-border acquisition is a useful way to achieve these objectives. Acquisition is a process that leads the initiating hotel companies to obtain access to critical resources in foreign countries, to show geographical presence, to gain enough market power, to obtain specific skills or technology, and neutralize the moves of competitors. Acquisition is also a process that helps target hotels to gain advanced management concepts, operation systems and new technologies from the initiating hotel companies.

Appropriability Theory

The appropriability theory of the multinational corporation emphasizes the conflict between innovators and emulators of new technologies. Where appropriability is “high,” innovators can protect their profits more easily and spend it on sophisticated technologies that lead to breakthroughs that can be transmitted worldwide through the innovator’s own subsidiaries. Conversely, where appropriability is “low,” multinationals find it less profitable to create simple technologies and ideas that require market transfer [Magee, 1981]. Applying this theory to the hotel industry, contracts are adopted when appropriability is high, that is, when the franchisor or contractor can expand in foreign markets with limited financial investment and relatively high profit. Franchisors and management contractors have the confidence that their well-established and successful operations and management systems are inimitable. Often, the local owner retains significant control and emphasizes its own interests rather than that of the group as a whole. After years of franchise or management
operation, the full-fledged franchisors or management companies can reap the rewards themselves by terminating contracts with franchisors or contract partners from whom they could emulate technology and systems. As appropriability mechanisms erode, franchisors and management companies seek ways to get the control over these hotels and protect their profits. Acquisitions help them gain greater control over the profitable franchised or managed hotels and keep the profit within their own enterprises for indefinite, extended periods of time.

**Propositions**

*Brand Equity*

Brand equity incorporates the principles of hotel groups using branding as a differentiator, as well as hotel-industry-specific product segmentation where brands are developed to target specific market segments [Olsen, West, Tse, 2008]. Lodging is a brand-equity business and brand equity is the backbone of expansion in the hospitality industry. Building strong brands is considered to be one of the key drivers or ‘powerful forces’ of success in the hotel industry [Jiang, Dev, Rao, 2002; Kotler, Bowen, Makens, 2006]. By building equity in its brand, a lodging company can “sell” its name to hotel owners and franchisors so they may reach more consumers in order to generate greater demand that will ultimately support expansion [Morgan Stanley, cited by Jiang et al., 2002]. This concept has gained considerable attention from academicians, practitioners, and researchers in recent years [Bailey, Ball, 2006; Cobb-Walgren et al., 1995; Kim, Kim, 2005; Prasad, Dev, 2000]. CEOs of hotel companies that own brands recognize that brand equity drives stock price and shareholder value.

Repositioning hotel chains’ brands or brand portfolios is one way of affecting new product development. Marriott purchased Ritz-Carlton to round out its portfolio and give it a full range of products extending fully into the luxury segment. In the case of acquisition, the initiating hotel companies acquire the targets’ intangible assets including brand names, as well as operations and management systems. If the target hotels have strong brand names and high brand equity in the host countries, the acquiring hotels are more likely to directly gain market share by acquiring the targets’ brand names. In such cases, the targets’ brand names are usually maintained after acquisition instead of dissolving them into the initiating company’s existing brand portfolio. Mahajan, et al. [1994] conducted a pilot study for the all-suite segment of the hotel industry that evaluated the effect of brand equity in acquisition decisions. The results demonstrated that brand equity as measured by brand loyalty and brand recognition accounted for 5%–30% of the explained variance in perceived desirability of hypothetical mergers.

On the other hand, in the case of an initiating hotel company that has strong brand names in its portfolio but does not possess the recognition and loyalties in the host country, it is more likely to introduce their brands directly to the host country. Initiating
Kun Yang, John D. Buschman

86

The hotel could either acquire a hotel company or enter into contract with a potential partner in the host country. Since the hotel industry is characterized by high capital intensity, contrary to other industries in the service sector [Contractor, Kundu, 1998], initiating hotel companies tend to choose contract over acquisition as it brings less risks to explore its brand's value in the host country. Thus, Proposition 1 is described as follows:
P1a: The initiating hotel company has more likelihood to conduct cross-border acquisition as entry mode when the target hotel's brand equity is higher than that of the initiating hotel companies in the host country.
P1b: The initiating hotel company is more likely to choose contracts as entry mode when the initiating hotel company's brand equity is higher than that of the target hotel in the host country.

Relatedness of Products and Market Segmentation

Initiating hotel companies can make two resource comparisons when deciding on acquiring and entering contract with another company, that is, to what extent the other companies’ resources overlap its present resources (similarity) and to what extent the other companies’ resources augment its existing resources (complementarity). We argue that similarity and complementarity between two hotel companies suggest subtle differences in the relative desirability of acquisition vs. franchise or management contract.

Similarities in products, markets, and technologies between two firms are generally referred to as the level of business relatedness [Koh, Venkatraman, 1991]. This paper discusses the similarities in products, markets for certain market segments, which can be termed upscale, moderate and economy segments. The definition of complementarity adopted in this paper is the extent to which two firms’ resources are different, yet interdependent and mutually supportive [Tanriverdi, Venkatraman, 2005], mainly referring to the complementary market segments and products. Since complementarity in one dimension does not preclude similarity at the next higher level of categorization within that same dimension, this paper focuses on the dimension of market segment and product relatedness (similarity and complementarity).

Hotels with similar market segments typically duplicate each other’s assets and operations. Obtaining similar resources might result in redundant resources and contribute little new resources or innovation to the initiating company. According to the resource dependency perspective, firms striving for survival obtain external resources to eliminate their dependency on environment, influence the environment, and to get the control of resources. The basis for control is the actual use of the resource and who controls its use. It is, of course, possible for a resource to be used by an entity other than the owner's, in which case the user has some measure of control over the resource [Pfeffer, Salancik, 1978]. By the same rationale, instead of acquiring external resources such as another company's inventory in the host country, an initiating hotel company can get control of that inventory through contract. Contract then can support gaining market share as well as reduce the
liabilities of foreignness and newness. Franchise agreement and management contract can therefore be good ways of using external resources with less redundancy and lower costs than through acquisition.

When hotel dyads, that is the initiating and targeted companies own complementary resources, they are more likely to engage in acquisition. Idiosyncratic resources could strengthen the initiating hotel company and give it more control over the environment. Acquisition enables hotels to benefit from exploiting each other’s expertise in complementary areas. As Harrison et al. [2001, p. 680] state, “resource complementarity is critical to successful acquisitions and equally important for effective strategic alliances”. So, complementarity between both firms of a dyad can generate economic benefits for two firms when they combine their resources through acquisition [Williamson, 1975; Harrison et al., 2001]. Therefore, Proposition 2 is presented as follows:
P2a: The initiating hotel is more likely to choose contracts as entry mode when there is a higher degree of similarity in products and market segmentation between initiating hotel company and the target hotel.
P2b: The initiating hotel is more likely to choose cross-border acquisition as entry mode when there is a lower degree of similarity in products and market segmentation between initiating hotel company and the target hotel.

Partner-Specific Knowledge of Two Hotels

Partner-specific knowledge is embedded in social relationships and characterized by a level of trust between two firms. The value of this knowledge is maximized when two firms continue the relationship by conducting more transactions in the future [Wang, Zajac, 2007]. With respect to information asymmetry, a firm that does not know its transacting partner faces a greater risk of opportunistic behavior by its partner, whereas repeated interactions allow two firms to better know each other’s operations and products over time, thus reducing information asymmetry. Repeated transactions with the same partner can also enhance the effectiveness and efficiency of interaction by developing a mutual understanding of routines and procedures [Williamson, 1975; Dyer, Singh, 1998].

Hotel dyads between companies with repeated transactions tend to develop absorptive capacity. Absorptive capacity of a firm refers to its ability to recognize, assimilate, and commercialize new external knowledge [Cohen, Levinthal, 1990]. As two hotel companies conduct repeated transactions, they become well acquainted, are able to identify their crucial knowledge, and even deliberately develop inter-firm knowledge-transfer routines to facilitate the learning process [Dyer, Singh, 1998]. In many cases these companies have been acquiring hotels where they had management contracts or were involved in some form of joint venture [Olsen, Zhao, 2000]. Following Proposition 3 emerges from this knowledge:
P3: The more partner-specific knowledge hotel companies have, the greater the likelihood that they will again choose this partner for acquisition or contract, and that initiating
hotel companies will acquire their contract partners rather than other hotels that they have no partner-specific knowledge of.

**International Experience**

From the aspect of resources, the more transaction-specific knowledge initiating companies have, the greater the likelihood that they will choose previous entry mode rather than the new one is. For example, Wyndham Worldwide, Holiday Inns (a subsidiary of Intercontinental Hotels Group) and Choice Hotels International are franchisors that have an estimated 16,849 hotels in total. They almost exclusively choose franchise as their entry mode since they already possess transaction-specific knowledge and can offer a well-developed franchise system package. Moreover, Contractor and Kundu [1998] state that the greater the accumulated experience of the franchise system is, the lower the perceived risk associated with its internationalization and the greater the perceived benefits are. Proposition 4 is therefore:

P4: Cross-border entry choice is positively associated with the initiating hotel company's previous international experience i.e., hotel companies already involved in acquisitions are more likely to again make acquisitions instead of entering into a contract.

**Duration of Proprietary Knowledge**

One of the main purposes of resource combinations is to create value and synergy. Initiating hotel companies entering into contract possess core advantages in brand, operation and management systems, etc. However, while the two parties cooperate, the franchisee/contract partners might grasp the main resources as well as gain the main advantages of the initiating firms. The unintended leakage of knowledge leads to “free riding” and opportunism in the form of partners seeking to terminate the relationship and to become competitors.

According to appropriability theory of the multinational corporation, initiating firms can protect their profits more easily for sophisticated technologies when appropriability is high, and on breakthroughs that can be transmitted worldwide through the innovator's own franchisees and contractor partners [Magee, 1981]. Conversely, when franchisees and contract partners have acquired “sophisticated knowledge”, meaning appropriability is “low”, initiating hotels find it less profitable to suffer from the leaked knowledge. Under this circumstance, initiating firms tend to stop the knowledge leakage and develop more sophisticated knowledge to protect or retain the profits. Thus, acquiring the prior franchisees/contract partners is an effective way to reach the goal. In some cases, the acquiring hotel company’s motive was to prevent the majority owner from switching to different partner. For example, when Hilton Corporation bought shares of the Prudential Insurance Company in flagship and key properties, it was rumored that Prudential was looking into the possibility of contracting with another company to manage the hotels, a process known in the hotel industry as re-flagging.
Once the initiating hotel firm acquires the target properties or firm and synergy is successfully created, the target hotels can obtain new core advantages and sophisticated knowledge. In such cases appropriability will be high again, allowing both sides to gain profits through contract. The initial hotel company can sell properties and then bring them back into the portfolio under contract, recovering the capital previously invested in the equity, and thereby improving cash flow. This is the strategy that was followed by the Hilton Corporation before their eventual acquisition by private equity giant Blackstone. Hotel firms are therefore likely to spin off the target hotel(s) and again enter into contract after new proprietary knowledge is formed. This leads to the following proposition:
P5a: The longer the contract relationship within hotel dyads lasts, the greater the likelihood that a subsequent acquisition happens between them.
P5b: The greater the time after the acquisition, the more likely it will be that spin-off or contract activities will happen.

FIGURE 1. Conceptual model of determinants of entry choices in hospitality industry

Conclusions

Applying resource dependence perspective, appropriability theory and dyadic perspective, this paper asserts that brand equity, relatedness of products and market segmentation, partner-specific knowledge of two hotel companies, international experience, duration of proprietary knowledge are the key determinants of multinational hotel entry choices. The paper suggests that there can be a sequence of entry choices. If a hotel management company initiates a management contract with a target hotel (or hotel company), it risks
that the contracted hotel (company) might later attempt to terminate the contract after it acquires sufficient proprietary knowledge. To avoid this from happening, the managing company might instead acquire the contracted hotel for the purpose of retaining their market share in the host country. With time, the acquired hotel would be spun off by the acquiring hotel company once the acquiring company reestablishes new proprietary knowledge and has greater controlling power over the acquired hotel even with non-equity entry mode (contract).

This paper intends to contribute to the literature of hotels’ foreign entry choices in three ways. First, instead of dividing the entry choices on equity based and non-equity based, it separates entry choices by how initiating hotel companies strategize the existing resources, that is, whether they explore target hotel’s resources, or exploit their own unique resources. Second, differently from the previous studies which took focal-hotel perspective and unitary analysis on hotels’ foreign expansion, this paper draws a dyadic perspective, considers the comparative relations as the determinants of entry choices, and probes the determinants of entry choices in the global lodging industry. Furthermore, the paper looks at the entry choices in a dynamic way by proposing a cycling sequence of the hotel company’s strategy, which hasn’t been given adequate attention in the previous studies.

Our research has opened a door to the dyadic and dynamic study on lodging companies’ foreign expansion, while previous research mostly took a unitary view instead of a dyadic one. Our propositions are mostly based on the dyadic relationship between the initiating hotel companies and the target hotel, which helps painting a fuller picture of the foreign entry mode phenomenon. We not only consider one-time acquisition or contract, but rather deem it as a series of transactions across years. Our longitudinal approach will benefit the future research on further understanding the hotel companies’ foreign expansion strategies.

The propositions need to be tested in empirical studies, and therefore it becomes both the major limitation of this conceptual paper as well as the future research direction of the authors. The paper proposed firm-level determinants of the multinational hotel companies’ entry choices. Country-level factors such as cultural differences, country risks, economy risks should be considered and examined in the empirical tests.

Notes

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Word-Of-Mouth in Social Media. 
The Case of Polish Tourist Industry

Abstract

The core objective of this paper is to determine the level of online dialogue in social media between the tourist industry leaders and their customers. This study applies sequential explanatory industry-representative comparison with statistical and qualitative analysis of online word-of-mouth communication. Its main finding is that even if online marketing is a hot topic, online channels seem to be neglected by the companies failing to provide real-time dialogue services. This results in the loss of customer attention and engagement and can be linked with overall corporate relationship management immaturity. In addition, the article offers vital insight into customer value creation chain of hotel and tour operators.

Keywords: electronic word-of-mouth (eWOM), hotel, online marketing, relationship approach, social media, tour operator, tourism, word-of-mouth (WOM)
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Introduction

The implementation of the relationship orientation in many companies has offered significantly more power to the customers, because sound relations can only be built on the basis of partnership and balanced mutual benefits. Consequently, the relationship orientation emerged not only as a new marketing paradigm but also a vital part of the prominent contemporary theory of the company and competitive advantage – the Resourced Based View (RBV) [Deszczyński, 2014].

The basic goal of a relationship oriented company is not only to sell, but also to retain solid customer base and to invest time and effort in the most profitable relations. The only way to do this is to know the customers better and to proactively engage them not only by presenting supplementary offers but also by staying open for a dialogue and even to offer them entertainment [Deszczyński, 2012]. Platforms for this dialogue are commonly composed by tools/channels such as database marketing, hotline and direct contact. All of them present an ideal space for two-way communication, however in a company-controlled environment with relationships remaining discrete affairs. This has changed with the emergence of social media, which brought democratization of knowledge resulting from customer experiences and empowerment of the individual units [Mills, 2012].

Given the above, this article presents the methodology and research findings aimed at examining the corporate policies towards word-of-mouth communication in social media on the example of the Polish tourist industry. It is supplemented by some early findings of similar research that has been initiated on the UK market. The background for the research analysis is the phenomenon of the customers empowered by social media. The article brings not only the insight into contemporary advancement in the use of new media by the leaders of the important industry but also offers some practical advice on leveraging overall corporate performance in terms of the modern relationship development. Additionally, it gives vital insight into customer value creation chain of hotel and tour operators.

Paper begins with the customer empowerment and value co-creation in the social media phenomena explanation. The first section brings also the discussion on the nature and importance of a customer – company dialogue and electronic word-of-mouth in particular. It concludes with three hypotheses, which build on the expected underperformance of business actors in dialogic communication. Next comes presentation of the research method and the discussion of research findings structured in several sections. The final part brings both generalized and tourist industry specific conclusions. It also discusses research limitations and its possible extension.
Empowered Customers and Social Media

“Customer is the king”. This old saying gets a new meaning in the era of social media. Access to knowledge, available multiple options and the willingness to use the interactive virtual communication platforms to comment on the products, services and their providers, have dethroned the company from the dominant position in the postindustrial knowledge economy [Seppä, Tanev, 2011].

To compete in this environment, companies have to adopt the Service Dominant Logic (S-D logic). The S-D logic, which was proclaimed for the first time by Vargo and Lutsch [2006] implies that the business entities instead of targeting and managing customers to create, communicate and deliver value at a profit [Kotler, 2008], have to acknowledge not just the right of the customers to co-create value, but their key role in this process [Grönroos, 2009]. Although there still exist segments of the market, where customers buy goods and services treating them just as resources, the general orientation of S-D logic applies to all businesses, as all of them primarily consist service systems [Lovelock, Wirtz, 2007; Vargo, Lutsch, 2008; Vargo, Lutsch, 2016].

Social media seem to be an ideal vehicle to pursue co-creation strategies, as they offer effective solutions for all four components of Prahalad’s and Ramaswamy’s DART model [2004], which constitutes a popular framework of conceptualizing and guiding implementation of customer value co-creation. The DART model consists of [Mazur, Zaborek, 2014, p. 108]:

- dialogue, which refers to the interactivity between the partners, eagerness to act and to learn,
- access, which can be understood as offering the right tools for communication resulting in increased freedom of choice for the customers,
- risk assessment, which represents customer’s right to be informed about the consequences of his choices,
- transparency, which means resigning from information asymmetry between the customer and the supplier.

Social media truly constitute a meeting place, a platform for an open dialogue rather than a monologue. This creates a situation, where managers learn from their customers and customers learn from the technology-enabled communication originating from the company [Niininen, Buhalis, March, 2007, p. 269].

The role of social media in empowering the customers is also substantiated in the Gruning’s excellence theory in public relations [Gruning, 2006]. According to his two-way symmetrical communication model, interactions between company and its stakeholders should be based on partnership, sincere resolution of the problems and on mutual understanding, which helps to prevent aggravation of the conflicts and creates mutual value [Wojcik, 2011].
Undoubtedly, diffusion of information through electronic word-of-mouth (eWOM) is one of the most important roles of social media [Kim, Lim, Bryner, 2015, p. 165]. However, the word-of-mouth (WOM) phenomenon defined as communication between independent purchasers about their supplier and his offer [Sotiriadis, van Zyl, 2013, pp. 108–109], is nothing new in the history of trade. Already ancient and medieval communities relied on WOM as the primary enabler of economic and social activity [Dellarocas, 2003, pp. 1409–1410]. The differences between WOM and eWOM lie in the unprecedented scale and the speed of diffusion of the latter, as well as in the change of the affected communities [Cheung, Thadani, 2012, p. 462]. Traditionally, community and WOM have been used in the context of familiarity, where people knew each other and formed direct relationships with each other [Lange, Elliot, 2012, p. 197]. In the context of eWOM, the spread of recommendations is not limited by the physical proximity, personal acquaintance and concurrent presence of the communicators [Zeng, Gerritsen, 2014, p. 31; Cheung, Thadani, 2012, p. 462]. Even though it is usually provided by total strangers, eWOM, as previously classic WOM, was found a far more credible source of information for the customers than the corporate advertising [Brown, Broderick, Lee, 2007, p. 6; Bulchand-Gidumal et al., 2013, p. 44]. Hence it is also far more influential in terms of brand selection and purchase decision making [Kim, Lim, Bryner, 2015, p. 165; Callarisa et al., 2012, p. 73], especially in case of an unfamiliar brand [Litvin, Goldsmith, Pan, 2008, p. 460].

To sum up, social media and eWOM have radically changed the situation of the customers in relation to the companies. Once alienated recipients of professional marketing communication, customers turned into broadcasters, sometimes even prominent content makers who can trump company’s marketing, sales and service efforts with unprecedented immediacy and reach [Baird, Parasnis, 2011]. What could previously seem to be a private problem of an individual, now can be easy shared with much more people than ever before or be even transformed into a crisis situation demanding high profile actions from the CXO-level management [Sparks, Browning, 2011, p. 1311].

The eminent example of how the customers can utilize their power is the crisis of two Polish TV platforms – “Telewizja n” and “Cyfra+”. They merged in 2013 and took this as an opportunity to impose unfavorable offer conditions affecting most popular tv packages. As a reaction to this, a spontaneous movement started on Facebook (page: Anty NC+ / Anti NC+), which mobilized 50 000+ angry customers in a month forcing the company to extraordinary actions. The CEO of NC+ Julien Verley issued an official open letter to the founder of the community – a young student, inviting him to talks. In the end, the company let go some of its leading executives and changed customer-unfriendly offer, while still suffering losses of approx. 200 000 customers [Facebook, 2013; Dziadul, 2013; Stysiak, 2013]. As this article will reveal, online channels seem to be still neglected by the companies, which do not apply the same standards to the online and offline communication channels and correspondingly fail to provide real-time dialogue services.
Even with the company’s best will, engaging customers in a dialogue may be problematic in a buzz of approximately several hundred advertisements competing for attention of an average consumer a day [Storbacka, Lehtinen, 2001, pp. 89–91; Kotler, 2012, p. 118; Hill Holiday, 2015]. In addition, some industries suffer from poor emotional potential of their products, which significantly hinders the introduction of customer relationship management strategies [Deszczyński, 2008]. Nonetheless, the basis for an effective online dialogue lies in the readiness to monitor and support the core activities that shape social media, which are: conversation, sharing, publishing and participation [Buchnowska, 2013]. This was perfectly exemplified in 2009 Domino's Pizza prank videos crisis, which showed some of its employees contaminating food. Prompt and honest reaction of the Domino's CEO and PizzaTurnaround campaign resulted in 10 000 related tweets, 80 000 new fans on Facebook and an increase of 14.3% in sales – one of the largest growths ever recorded by major fast-food chain in the United States [Cream, 2010; Reilly, 2015].

In a day-to-day business, less spectacular actions should support the development of relations through online engagement both with the existing and potential buyers. The basic elements of dialogic communication include [Cabiddu, De Carlo, Piccoli, 2014, p. 185; Kim, Kim, Nam, 2014, p. 2606; Bonsón, Ratkai, 2013, p. 795; Callarisa et al., 2012, p. 78]:
- involving as many people as possible,
- easing the interface of communication,
- listening to what they say,
- addressing the immediacy of conversations,
- engaging people by proactively providing useful information,
- maintaining a dialogic loop.

However, this is easier said than done. Social media are still a new tool for the most Polish companies (53% of the biggest Polish companies have at least one social media service [Buchnowska, 2013, p. 64] but in average only 8.1% to 21.7% of all companies use this communication channel regularly [Biznes.pl, 2015; Wyborcza.pl, 2015]). How many of them provide high quality customer service in social media is unknown. Hence this article is aimed to at least partially answer this question based on the example of the tourist industry.

Intangible nature of services makes its pre-purchase trial impossible, thus stressing the importance of eWOM [Rosman, Stuhura, 2013, p. 23]. Particularly affected are complex hospitality and tourism products, which are generally associated with high perceived risks. Therefore, most consumers rely on eWOM to reduce those risks before they make any purchases [Buhalis, Law, 2008, p. 613; Litvin, Goldsmith, Pan, 2008, p. 458]. Approximately 90% of the British customers browse online in search for the best offers [Deloitte, 2015]. Correspondingly, 68% of Polish tourists made a purchase based on online research. Even more interesting fact is that 28% of them decided not to try an offer after they had read negative comments about its provider [Rak, 2015]. It means that central control of time and subject of communication can no longer dominate strategies of customer-oriented companies [McQuail, 2007]. Moreover, they should try to take part in every information
exchange between their customers and influence such interactions with their openness to
listen and respond, thus accepting the rules of equal partnership in dialogue.

Meanwhile, the tourist industry is struggling to incorporate social media into business
processes [Zeng, Gerritsen, 2014, p. 34]. Understanding the role of new technology and
generating meaningful interactions with consumers seem to be a particular challenge
[Chathoth et al., 2014, p. 188]. In his 500-hotel sample research, O’Connor demonstrated
that less than 1% of hotel managers responded to online reviews posted on TripAdvisor
(a major peer-to-peer reviewing platform) [2010, p. 768]. Chan and Guillet found a little
more heartening but still unsatisfactory performance of Hong Kong hotel managers, who
hit a 24%-level response rate [2011, pp. 353–354]. In his subsequent publications devoted
to opportunity management across several industries, the author of this article found that
approximately 30% of online customers’ offer inquiries will never be responded and most
of the rest will likely get an one-off response only [Deszczyński, 2016a; 2016b]. Therefore,
even if the potential and effective influence of social media and eWOM in the tourist
industry seems to have a strong background both in the theory and practical studies of
customer behavior, based on the above, following hypotheses are made:

H1: Most of the companies in the tourist industry underestimate social media and eWOM
by failing to apply the same response standards to online dialogue as to face-to-face
communication.

H2: Underperformance in social media dialogue is partially result of lacking resources.

H3: Underperformance in social media dialogue is also result of immature corporate
online communication policies.

Research Methodology

Research was designed as a sequential explanatory industry-representative comparison.
Following the definition of Ivankowa, Creswel and Stick, it contains a quantitative and
qualitative phases [2006, p. 5]. However, unlike in the traditional approach to the precise
division of phases, statistical and qualitative analyses were partly pursued at the same time
with the exception of the last step in qualitative phase – the interviews taken with managers
of companies, whose clients opinions were taken into consideration in the first phase.

The original data in this research included customer comments posted in the leading
social network (Facebook) and on the web pages of intermediary travel services providers
(TripAdvisor, easy.go) between December 2012–December 2014, which were manually
screened. Such a long period was chosen deliberately to ensure no seasonal (i.e., local busy
times) or accidental (e.g., hotel renovation) distortions affected the results. Four hundred
and five opinions were examined in detail out of all available, chosen upon such criteria
as: complexity of the opinion (preferred longer, informative statements), concentration on
one type of service provider (tour operator or hotel), equal distribution in time (quarterly),
equal distribution of social parameters (age and marital status). Such a selection procedure poses a little risk of subjectivity, but is a common social media research practice in the tourist industry [Rhee, Yang, 2014]. If customer remarks were referring to both positive and negative aspects of the offer, general grade given by the customer would be decisive (numeric scale +50%, or more stars than the half of the best possible grade were considered a positive comment).

Tourist organizations chosen for the study are clear industry leaders with more than 50% combined market share. The group of tour operators consisted of five biggest companies (in terms of number of customers) [German, 2013]:
- Itaka,
- TUI Poland,
- Rainbow Tours,
- Neckermann Poland,
- Wezyr Holidays.

The group of hotels was made up by seven biggest chains (in terms of number of beds) [Mitulski, 2013]:
- Accor (including Mercure, Novotel and Ibis brands),
- Louvre Group (Golden Tulip, Campanile, Premiere Classe brands),
- Best Western,
- Rezidor (Radisson Blu brand),
- Gołębiewski,
- Qubus.

The research team included Poznań University of Economics International Tourist Business MA students led by the author of this article. The goals of the research were to determine, in terms of industry leaders (IL) / social media (SM):
- what are the characteristics of the presence of the IL in SM?
- does positive or negative eWOM dominate?
- what are the customers praising or complaining about in detail?
- what are the motives of the customers to share their opinions in SM?
- to what extent praises and complaints are commented/responded by other SM users?
- whether IL follow basic “listen and respond” principle of SM and engage customers in value creating dialogue?
- what is official IL policy towards word-of-mouth in SM?

**General Characteristics of Social Media Presence**

All tour operators and hotel chains have their own Facebook fan page. Some of the hotels have even sites designed for particular locations (however research focuses on
centrally managed services). The usual content concentrates on presentation of particular travel destinations with lots of pictures, some descriptions and encouragement for opinion sharing on topics associated with the destination (e.g., food preferences), contests connected with traveling and festivities (e.g., St. Valentine's day) and traditional promotions. Other social services such as Twitter and YouTube were excluded from the research, as not every company had an account there. Moreover, existing profiles found minor audience (up to 2 000 Twitter observers and 300 YouTube subscribers).

The presence in travel intermediary services providers media, such as TripAdvisor and easy.go, depends on their customers’ preferences. The offer of all industry leaders is extensively commented in these services with up to 2 700 opinions (tour operators – e.g., Itaka) / 1 500 reviews (single hotel location – i.e., Novotel Centrum Warszawa). Some industry leaders actively use their presence in TripAdvisor and publish direct links to reviews found there (e.g., Accor and Neckermann), while others provide opinion services on their own websites (e.g., Itaka), or do not provide links to intermediary services at all (e.g., Wezyr).

Characteristics of the Customers’ Comments

The word-of-mouth communication has two faces. It can be a powerful tool for winning new customers convinced by independent assessment of their satisfied fellows. On the other hand, people tend to comment on all aspects of the offer conditions. Different authors present various studies on this matter, but the general opinion is that the negative news is proliferated on more extensive scale. It is reported that dissatisfied customer shares his opinions with approx. 5–11 acquaintances, while satisfied customer reports it to 3–4 only [Richins, 1987, pp. 24–31; Deszczyński, 2005, p. 390; Jain, 2012, p. 65]. Contrary to these common perceptions, positive customer feedback in this study reached very high level. In case of tour operators, it amounted to 49% and for hotels it even reached 69% irrespectively of brand positioning and price levels.

It was not the aim of this research to study the psychological background of customer opinion making and in fact the rate of positive feedback was somewhat a surprise for the article’s author especially in face of traditional Polish tendency to complain [Wojciszko, Baryła, 2001]. However, communication tools examined in the research could have impacted these results. Site’s regulations exclude vulgar expressions, which can be found on unofficial forums and their main aim is not to collect representative opinions what is not the case if forum is raised by e.g., “the victims of Itaka” [itakaforum.pl, 2015]. On the other hand the media platforms chosen to extract customer feedback are representative, though it is possible some of positive opinions may be brought by marketing agencies hired by hotels and tour operators themselves. However, such presumptions should be examined further in a separate article.
The research procedure encompassed evaluation of each comment in 10 (tour operators) or 9 (hotels) attributes dealing with both tangible and intangible elements of the offer. The detailed results are shown in Figure 1. To guarantee high quality and comparability of the evaluation each attribute was precisely defined:

- customer service before trip/stay: offer inquiry, booking procedures,
- customer service during trip/stay including all customer remarks about the services delivery during the stay/trip not directly specified elsewhere, especially the attitude of local staff,
- travel to and back from tourist destination (tour operators only) including shuttle services and departure from the airports,
- conformity of the offer (promised vs delivered): comparison between description of the offer presented in the marketing materials and during the contacts with the company’s representatives and the actual perception of services delivered (customer has to specify whether the company did or did not keep its promises),
- price/quality ratio: all remarks expressing disappointment or satisfaction in relation to the level of services and price paid, especially if the offer is compared to the rival’s,
- rooms: room size, furnishings, equipment (excluding cleanliness and sleep quality),
- sleep quality: bed size, bed comfort, silence,
- location: customer comments on area surrounding hotel and its general location i.e., closeness to the sea shore, city center, sea shore quality,
- cleanliness: including room, bathroom, restaurants, pool and other hotel facilities,
- food: served in the restaurants, bars and other hotel premises including food brought by the room service, especially if the remarks deal with the quantity, quality or diversity.

Researchers were sensitized to analyze the comments from multiple angles as customers usually describe different aspects of tourist services, especially in longer texts. Therefore, e.g., if sleep quality was affected by external factors connected with location, such as noisy area, both attributes were classified. The remarks on the rooms were also often connected with the cleanliness and sleep quality.

Customers make comments on the performance of tour operators and hotels with different intensity. Four attributes absolutely dominate regarding tour operators: customer service before and during stay/trip, offer conformity and price/quality ratio. They appear in more than 90% of the opinions examined, while in the case of hotels only approx. 20% of the tourists mention one of them. In the case of tour operators, this can be linked with relatively complicated customer servicing process including contacts with several levels of own employees and employees of external partners e.g., travel agents. Moreover, customer care at final destination is executed by the local representatives, mostly temporary employees with limited authority and motivation to solve customers’ problems. The equally high position of the offer conformity and price/quality ratio can be again linked with the complexity of the offer and the discrepancies in its perception over time. Because most of the tourists socialize in a group at least for a week (in the hotel, during facultative trips),
it enables them to make comparisons, which can change their individual calculation of marginal utility they had made before the trip was booked.

**FIGURE 1. Customer comments by attribute**

![Customer comments by attribute](image)

Source: own study.

Customers’ comments on the hotel offers are much more equally dispersed and generally less informative. However, around 50% of them indicate the rooms including their cleanliness as major topics, with food coming third with 44%. Such concentration on physical part of the offer can be interpreted in the light of less complicated customer service process that is more likely to come as a routine and the fact that the room and food respond to the core customer needs.

The results of conjoint analysis linking the offer attributes and the positive/negative ranking are shown in Figure 2. The percentage rates indicate how many customers out of those commenting positively/negatively their stay/trip included remarks on the particular attribute. In case of tour operators, the highest ranked attributes are widely commented almost by every person indifferently whether praising or complaining. This only confirms the fact that the performance in this field is crucial for those businesses. Among other categories the differences between positive and negative feedback are less than 20%, except of food and the location. Especially in terms of the location, positive comments dominate what can be possibly linked with the improvements which the tour operators have made in the descriptions of their offers in printed and online media. Traditional categories such as e.g., “closeness to see shore” were supplemented by new behavioral expressions as e.g.,
“family friendly” attracting parents with shallow pools and kids’ animations and on the other hand warning those looking for silence about possible noise. This could have significantly narrowed the expectations gap improving customer satisfaction [Deszczyński, 2011].

Also, top commented hotel’s attribute enjoys the balance between positive and negative feedback, which proves that rooms should always attract the most attention from the hotel management as both underperformance and good performance in this field directly affect the overall customer satisfaction. Other top commented attributes fall far below the quality levels customers expect – hotel class irrespectively. This affects in particular cleanliness. This attribute was mentioned by 58% of the customers complaining about the hoteliers’ performance (32% less than in the case of praises). In this context cleanliness seems to be a hygienic offer attribute [Crompton, 2003]. It is perceived as a basic standard bringing much anger if not met, however in most cases without potential to cause customer’s delight.

As in the case of tour operators, location proved to be a category with primarily positive feedback (it was mentioned in 41% of the positive comments and in 29% of the negative ones). In fact, this attribute seems to be also one of the most important hotel’s customers satisfaction drivers, if assumed people only spend time describing major positive offer aspects.

FIGURE 2. Positive vs. Negative Comments by Attribute

The comments were also analyzed in regard to their publishing motives and their communication impact. However, the responsiveness of Facebook comments authors to our questions was far below expectations. This method also excluded analysis of the
intermediary travel services as they do not usually give such a contact opportunity. Alternatively, all posts were manually screened. It wasn’t a surprise that every customer (100% in case of hotels / 96% in case of tour operators) who posted positive comment wanted to recommend place of his visit (either directly encouraging others to come or making an overall destination advice). A little more fragmented situation was revealed after the analysis of negative comments. Most of the customers wanted to warn the others (73% in case of tour operators / 49% in case of hotels). In addition, approx. 11% of the hotel guests wanted to use social media to skip the official bureaucratic complaint handling procedures. The motives of remaining groups were not expressed directly, however they can be associated with many of the top options listed in the Global WebIndex such as: sharing opinions, filling up spare time, general networking with other people, sharing details of one’s own daily life [Desreumaux, 2015].

What comes as a little surprise is the overall little impact of the customers’ comments on the other Internet users. Only 5% of the posts were commented, responded or marked as useful (depending on media platform). It does not mean that the actual impact of the customers’ comments is so marginal. According to Nielsen Institute, 92% of the customers believe recommendations from family and friends [Whitler, 2014] and 70% of them use social media to get familiar with other people’s experiences before making a purchase decision [Nielsen, 2012]. It seems however that most of the customers limit their engagement to getting acquainted with the newest opinions about the given destination and the aggregated review indicators.

**Corporate Use of Social Media Dialogue Platforms**

Statistics showing relatively poor advancement in the use of social media by the Polish companies called in this article (see: Empowered customers and social media) are also substantiated by this research. Having corporate Facebook profile does not automatically bring engaged fans and customers, if it copies one-way communication and display-only model of the traditional Web 1.0 services [Barefoot, Szabo, 2011]. In order to be effective, social media need interactions, which can be developed into intangible social relational assets with multiple independent stakeholders (potential customers, existing loyal customers, ex-customers and the other attracted individuals). If this dialogue is a result of a formal strategy, it can create value in terms of market knowledge, strong marketing presence and reinforce individual relations irrespectively of their stage (e.g., attracting new customers, strengthening loyalty of existing customers [Deszczyński, 2014]). Meanwhile, only 37% of marketers think their Facebook efforts are effective and 88% of them would like to engage customers more applying the social media techniques [Stelzner, 2013]. It seems that the first thing to do is simply to follow the basic “listen and
respond” principle i.e., answering/commenting the customer posts on daily, preferably live, basis. Meanwhile, 34% of the customers’ comments in this research were left without any corporate reaction². In addition, further 38% of the posts got only general answer clearly based on simple templates. Whether it’s due to undervaluation of staff responsible for social media services, or lack of control on its performance, such poor feedback can be interpreted as “we don’t care” approach by the interested person and the others who read this conversation. Following conversation on Itaka’s Facebook fan page is a good example of such a situation:
- [Customer 1 and 2 lengthily commenting Itaka’s promotional offer in the light of problems they faced during their holidays],
- [Customer 3 joins and asks] – “Does Itaka execute control over the work of its local travel representatives?”,
- [Itaka @ Customer 3] – “If you have objections dealing with the performance of our local representatives please contact Customer Servicing Center dok@itaka.pl directly”,
- [Customer 1 @ Itaka] – “I have contacted them and what? And nothing! I got a blurred answer which had nothing to do with my complaint”.

This conversation shows incompetence/indifference of a given corporate interlocutor. However, it is also an “end-product” of overall organizational incompetence starting with the recruitment and management of local travel representatives to conclude with lacking support of domestic customer care office. It also confirms vividly the shift in power between the companies and the customers. If companies and corporate processes are not customer-oriented, consumers will find platforms to share their ruthless reviews and will spend time deliberating over their mistreatment by a given company, which will affect the wider audience.

But there are also positive examples. Individual responses were given to 28% of the comments, referring to customer name or nickname, to the exact case described and often offering a solution to the problems raised. This comes in line with the “addressability of marketing” postulated already in 1991 by Blattberg and Deighton [1991] and is included in every social media guide e.g., “engage in conversations with your customers” [Kaplan, Haenlein, 2010], “always respond and thank for feedback” [Adams, 2014] or “follow-up, listen and personalize fan experience” [Shukle, 2015]. A following conversation of Ikar hotel guest with its staff is a nice example of these practices:
- [Customer] – “Socialist styled rooms, air conditioning does not work, balcony closed, no room for smokers, food excellent, room dirty, dust, dirt, …”.
- [Hotel] – Mrs. Violetta, next time you come please consider our superior rooms. Price is only a little bit higher for a much better standard. I hope we will be able to change first bad impression. Cordial regards, Hotel Ikar team in Poznań”.
- [Customer] – Thank you for honest and loyal response and I wish you more success and less mishaps [emotikon]"
To make the research complete, representatives of the tour operators and hotels were interviewed and asked about the engagement of their organizations in social media. The responsiveness rate was 80% (tour operators) and 30% (hotels) with overall level at 47%. Following questions were asked:

- do you regularly monitor consumer opinions in social media?
- do you regularly monitor consumer opinions in travel advising Internet media?
- do you directly respond to comments placed in the Internet?
- what kind of company unit is responsible for evaluating the results of Internet monitoring?
- do you take corrective measures upon evaluated results?

All interviewed participants confirmed that they monitor consumer opinions in social media on regular basis and as much as 86% do so in regard to travel advising Internet media. These results are not surprising and go in line with the general trends [see: Empowered customers and social media].

The third question brought mixed answers. Almost one-third (29%) of the companies declared that they always respond to all comments, while 43% said they do it in most cases or usually. On the other hand, 29% of them gave no clear answer. It indicates two major problems. One is that, while some companies declare paying attention to all customer contacts, in fact they fail to do this. The discrepancy between what is declared and reported to the senior executives and the day-to-day practice in terms of customer service may be a common situation. Companies often lose customers not because they offer bad quality in terms of core and actual product, but because of lacking attention to augmented product, especially poor customer service performance [Stopczyński, 2012]. It happens not only in contacts via social media but also while executing processes directly responsible for sales, such as lead management. In the 2012 research devoted to lead management in automotive industry conducted by the author of this article, 25% of the online queries were left with no answer, while 52% of them got slow or and general feedback only [Deszczyński, Mielcarek, 2015, p. 28]. In spite of the fact that direct contacts were of much better quality, cumulated losses across four online and offline points of contact in analyzed process reached more than 98% (if one assumes that prospect buyers only convert into customers when they are offered the best service at every stage) [Deszczyński, Mielcarek, 2014, pp. 46–47]. It is no wonder that if customer service can be poor at a point so close to sales, it may be even worse in managing online pre-sales relations, as it was proved in this research. However, such an approach can only lead to artificial dichotomy in online and offline spheres of interaction, which results, in the light of contemporary media multiplexity theory, in the loss of the chance for developing strong relations. According to this theory, multimodality (the use of multiple media) is positively associated with the relationships' strength or so called interdependence level. Furthermore, the more available communication channels are used, the better the outcomes are [Haythronthwaite et al., 2007; Ledbetter, Mazer, 2014].
The second problem lies in the fact that while some companies do not fully support online dialogue with their customers due to lacking performance in the execution of the communication strategy, others do it intentionally. To make the impact of such fatal practice clearer, one should imagine a situation when a customer who comes in person to the showroom is ignored by the staff. No professional organization could afford to waste such an opportunity, yet so many of them do it in case of the online contacts. Customers should always feel a company’s genuine interest in them and their needs. Furthermore, they should see that the company appreciates their feedback and makes use of it [Paluch, 2011]. The nature and content of word-of-mouth communication will probably differ depending on how long was the customer involved in the interaction [Grönroos, 2004], but in order for this to happen, all the parties have to listen and respond to messages.

Partial reason behind why companies pay unsatisfactory attention to the social media dialogue can be found in the organizational anchoring of this process. Some managers interviewed in this research said that marketing department (50%), or front office (13%) are responsible for it, while many of them were not exactly sure who (37%). Correspondingly, 38% of the managers stated that corrective measures are taken upon evaluated results of the social media monitoring, 25% said that they are usually taken into consideration, and 37% could not confirm such a process even exists. Probably the difficulty in mastering the social media dialogue is linked with its dual character. Marketing department is definitely responsible for the corporate generated content (outbound communication initiating dialogue). However, the task of responding to inbound contacts should be organizationally supported either by an outsourced professional, or by a traditional front office unit. In the first case of the so called “delegated listening”, benefits of hearing to the customers’ voice, rapid responding to their concerns and gaining insight into how they speak about the company are sharply reduced [Crawford, 2009]. Therefore, own customer care team, which usually possesses factual information much needed in conversations, might be a better option. However, this unit is still not specialized in developing new programs that should be initiated after the analysis of the most frequently reported problems. This in turn is a domain of the quality departments or customer complaint offices. Finally, exploitation of the customer feedback potential should also involve sales units [Montalvo, 2011; Baird, Parasnis, 2011].

Customer social media dialogue, as a cross-border process, needs an advanced coordination effort, a clear goal setting, an accountable management and allocation of resources. In such context, this research uncovered immaturity of the Polish market leaders in organizing important part of the customer service. But this may not be national peculiarity only. I have initiated a pilot study applying the same methodology to London area tourist market. The preliminary results based on 200 comments show much similarity to the Polish market. In particular, tendency not to respond to customer feedback given in social media was vividly reflected in 19% response rate in case of the
leader of aforementioned spot check – Hilton hotels and 0% response rate in case of the 
UK market leader Travelodge. Even if these results could potentially improve after research 
is carried out in the full scale, it indicates that exploiting the potential of word-of-mouth 
in social media may be underestimated by the most companies, not only in Poland but 
also across Europe and beyond.

Conclusions

Social media is commonly described as a technology that has enabled the phenomenon 
of the 21st century with potentially huge impact on marketing communication due 
to numerous users of leading platforms and advanced targeting possibilities. What is often 
overseen is that the human passion to share news and to ordinarily chatter has always 
been present in every society [Papasolomou, Melanthiou, 2012]. Hence socializing or 
contacting via social media are the subject to the same basic rules of being able to “listen 
and respond”, as in face-to-face conversation.

In addition, proliferation of social media has to be analyzed in the light of deep 
societal changes represented by the shift towards individualization characterizing modern 
“societies of risk” [Tillmann, 2005]. This cultural mega trend formed a foundation for 
more demanding customers and coincided with global trade deregulation, which in turn 
intensified competition. All this, together with growing wealth, placed an individual, 
empowered customer in a superior position towards companies in many industries, giving 
him a potential to mobilize enough followers to actively influence corporate strategies 
or policies.

Meanwhile – as this research showed, companies are not taking the full advantage 
of the new social communication possibilities – as the hypothesis (H1) stated. Both the 
research on the online communities and the managerial survey confirmed that in most 
cases social media are used in a traditional manner e.g., as broadcasting platform of one 
sender not really interested in a sincere dialogue with its audience. Companies adopt a tool 
invited to socialize and at the same time neglect the way people normally make dialogue 
or develop relations and attempt to lead monologue instead, which confirms the second 
hypothesis (H2). Of course, this kind of an open dialogue brings risk and losing control 
is not something that companies are willing to do [Bonsón, Ratkai, 2013, pp. 795–796]. 
However, transparency and trust are essential for effective dialogue. If the companies do 
not adjust their policies to these conditions, the dialogue will be continued without them 
having a chance to contribute [Verhagen et al., 2016, p. 341].

According to the third hypothesis (H3), which was positively tested in the managerial 
survey carried out in this research, the organizational weakness of the companies striving 
to implement relationship approach in their business practice may be also the reason for 
derunderperformance in online communication. In spite of a superficial technical view that
might pigeonhole eWOM as a technology focused phenomenon or a marketing plaything, this is truly a relationship management venture. In the end, it is not the machine or a company that communicates with the customers, but its employees. Therefore, the online eWOM is likely to contribute to the development of reputation and ultimately sales, if the company provides resources that support qualitative online customer encounter [Sparks, Browning, 2011, p. 1311]. The discussion on the organizational anchoring of online dialogue process provided in the section Corporate use of social media dialogue platforms, has highlighted some elementary managerial dilemmas, which apparently are not being solved properly.

Recalling the specific tourist industry oriented conclusions, the article brought some important managerial insights into the customer preferences towards the tourist products. It turned out that, while core value provided by the hoteliers and tour operators is similar, customers tend to pay attention to different attributes when assessing their offers. The research also uncovered the areas of unsatisfactory performance of the tourist industry leaders, which were again different in both lines of businesses and should be carefully analyzed in order to be improved.

The concentration on one industry is one of the article’s strengths, because it brings important practical knowledge useful for managers. But it is also its weakness, on the other hand. The description of such a general phenomenon like social media should be continued in relation to the other industries with a special focus on general penchant for positive/negative word-of-mouth and its influencing factors, as well as corporate ability to make a dialogue, use eWOM and develop relations with the use of these new tools.

Another point is that even if the chosen companies represent more than a half of the tourist market, they all constitute the same type of big multi-site entities. Although their business impact is huge, a future research should include boutique hotels and smaller travel agencies or travel brokers to shed some more light on the organizational conditions of the successful use of word-of-mouth in social media (e.g., comparison of the big corporations vs small entities).

Finally, the research should be repeated to capture the overall tendency in word-of-mouth communication in social media with even bigger sample of customer comments. It can be also extended into other national markets (as it has been already initiated for the UK market) to deliver conclusions relating not only to Poland.

Summing up the process of the customer dialogue seems to require the maturity in relationship management [Deszczyński, 2016c]. This implies not only acknowledging the empowered customers but also empowered employees and other stakeholders [Deszczyński, 2016d; Smith, 2006; Johnson, Redmond, 1998]. The co-creation journey always begins from the inside of the organization [Ramaswamy, 2009]. Social media seems to be an ideal tool to facilitate such mass collaboration and value co-creation, what marks the eve of the social organizations [Bradley, McDonald, 2011]. However, companies may have a long way to achieve this goal.
Notes

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2 This part of research included hotels only.

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