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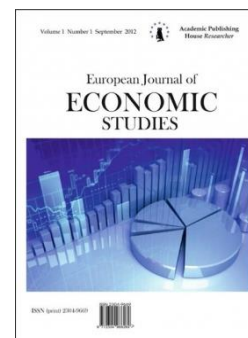
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Articles and Statements

The Impact of Careful Application of Growth Management Policies and Sustainable Development on the Changing Marketing Environment

Dina Al-Waely^{a, *}^aWorld Islamic Sciences and Education University, Jordan

Abstract

This study aimed to identify the impact of the careful application of growth management policies and sustainable development on the changing marketing environment. The study has used the descriptive analytical approach, where a questionnaire was employed as the study instrument. The questionnaire consisted of (3) demographic variables and (26) items that were put together to measure the impact of the careful application of growth management policies and sustainable development on the changing marketing environment. The study population consisted of all Senior Managers who work at five-star hotels at the Dead Sea in Amman, Jordan, who amounted to (19) Senior Managers in (6) hotels, and the study sample included all (19) managers. The results showed that there is a statistically significant impact of the careful application of growth management policies on the changing marketing environment; it also showed that there is a statistically significant impact of the careful application of sustainable development on the changing marketing environment. The results of the means and standard deviations of the careful application of growth management policies fields from the point of view of the analysis showed that they were high, where the Attraction field came first, and the Expansion came last. There were other results have shown that the total mean and standard deviation of the Coordination field were high, where it had a mean of (3.91) and a standard deviation of (0.51). The results of the means and standard deviations of the sustainable development fields from the point of view of the analysis showed that they were high, where the Economic Dimension field came first, while the Environmental Dimension came last.

Keywords: careful application, growth management policies, sustainable development, changing marketing environment, Jordan.

1. Introduction

With respect to the hospitality industry, hotels speak to a key player in its esteem chain, as they produce an incredible effect as far as business and GDP, natural corruption, and social or social change. Given its financial and ecological effect, the hotel sector is a standout amongst the most evident potential recipients of applying social responsivity policies. Lodging managers are ending up more worried about these arrangements, as they comprehend it as an absolute necessity to accomplish reasonable development and long-haul gainfulness (Alles, Marqués, 2011).

* Corresponding author

E-mail addresses: dr.dina_alwaely@yahoo.com (D. Al-Waely)

Business exercises and the market environment are associated and depend on one another. Right when a change emerges in the market environment, it quickly influences organisation and especially the hotel sector, regardless of whether straightforwardly or by implication. Furthermore, the market environment depends on the factors of the market, which expects managers to think about market factors when settling on their choices, given that the achievement of an organisation depends on the market environment and the progressions it experiences. The changing marketing environment influences the selection of procedures, which expects managers to make arrangements, actualise them, and follow up on them as indicated by the different changes that may come to pass for the market, for example, financial, political, legitimate, and social changes, which may at last prompt an adjustment in the market environment (Tabassum, 2014).

As demands increased, so did the need to employ Growth Management Policies and Sustainable Development. Since Growth Management Policies and Sustainable Development became an important and valuable resource for any organisation regardless of type, and especially in the hotel sector, it became necessary for micro-and macro-marketing environments alike to be able to employ these policies and improve the changes in order to develop the business. Therefore, the current study was conducted to explore the impact of the careful application of growth management policies and sustainable development on the changing marketing environment.

2. Literature Review

Growth Management Policies

Below, the researcher will discuss the main dimensions that are of matter to this study.

Cooperation

Coordination is a very important case to use in our life especially in work that is why it deals with all about intra and inter-organizational level. Coordination mechanisms, which are necessary to use them such as programming, that organize by programs, plans, rules, routines, targets, and objective. In addition, they use feedback that consisted of communication and the concept of the mutual adaptation. As well as, hierarchy to examine the problems which goes beyond feedback and programming. Therefore, coordination plays a great role in the company when it suffers from the uncertainty that caused task interdependence. There were standardised procedures that achieve tasks with low interdependence like programs or rule that determine responsibilities and allocation resource. As well, to align the work, there were a group of tools and information technologies can help the team. Such as boundary objects lead to better communication. Coordination moved from being formal and consistent to be described as knowledge sharing, flexibility, and communication. While experts have depended on dynamic view, they dealt with the coordination as an emergent procedure that could be changing (Okhuysen, Bechky, 2009; Hsieh, 2018).

Attraction

There is a policy specialised in the development of urban centres, improving the kind of nature and make it more attractive. The surrounded cities support urban centres by establishing renewal projects and implement long running programmes. Which financed by public authorities, sometimes with homeowner or investors such as Europe Union. Therefore, the movements of development and reform help to decrease the phenomena of the shrinkage of population. however, the investments in urban renewal in Copenhagen is developed through last three decades, and now it's more experienced than before. Besides all of that, the economic perspective sees that market forces lead to urban expansion thereby urban expansion will happened as long as the benefit from urban areas more than the agriculture areas (Fertner et al., 2016; Qian et al., 2015).

Expansion

The mechanism of resources allocation of urban land could lead to many risks that could affects the market negatively, containing the unjust distributing and the wastage of public resources. Therefore the governments started to improve the development of the urban land and control it through a group of theorists and ideologies such as the urbanism and smart growth and that is from a global perspective.in the late of 1970s. The concept of Urban Growth Management which proposed by the US that aimed many developments returning on nature like the protection of open space and rational urban growth. There are a lot of policy tools led to reducing the expansion of urban land such as delineation of an urban growth boundary. The 'Greenbelt' policy that made a great space between cities and rural area, also controlling the ultimate expansion and used in London. Each country adopted some policy tools to control the size of city, for example,

South Korea use the transfer of urban function and movements that promoted new villages. In Japan, they use land readjustment in many developed countries depend on urban redevelopment as a criterion to improve the quality of cities. In addition, the most developed country depended to farmland protection policy to cope with the loss which resulted from urban expansion (Qian et al., 2015).

Sustainable Development

Sustainable development is an all-encompassing idea dependent on a basic guideline. The thought consolidates "progression that tends to the issues of the present without exchanging off the limit of future ages to address their very own issues." The objective of sustainable development is unmistakable to guarantee financial improvement, social equity and ecological security (Houdré, 2008).

Sustainable development is currently observed as a general idea appropriate to all zones of monetary life. It is characterised as an improvement that addresses the issues of current ages without trading off the necessities of who and what is to come. Without knowing past and current examples of creation and utilisation, and precisely evaluating current needs, the necessities of future ages can't be anticipated. Feasible development can likewise be alluded to as a harmony between alleged mainstays of sustainable development; economic (situated towards monetary development and improvement), social (personal satisfaction introduction), and environmental (condition arranged) approaches (Huttmanová, 2017).

Economic Dimension (Economic Viability)

The economic viability (sustainability) of accommodation includes the ideal and productive utilisation of property resources with the goal that they can keep on working in a beneficial way in the long haul. The capacity of individual tourism ventures relies upon the capacity to recognise markets that will keep on conveying business over the long haul; to comprehend what potential shoppers are searching for; adjust to patterns and changes in source economic situations, travel examples, and tastes. This requires a powerful and continuous market evaluation to manage advancement in cordiality hotels (Kapiki, 2013).

Economic viability is a part of the sustainable development technique of numerous hotels. The objective is to make high an incentive for their investors and visitors. The technique depends on the idea of a "primary concern" that consolidates economic viability, social responsibility, and environmental protection. The organisation must utilise the standards of sustainable development to create income and spare expenses and in this way stay beneficial to be practical (Kapiki et al., 2014).

Environmental Dimension (Environmental Protection)

Ensuring the earth's continuity – with climate change at the cutting edge – is a standout amongst the most imperative difficulties confronting humankind today. Purposeful activities – at the government, corporate and individual levels – must be taken to end the progressing decay of the earth (Bohdanowicz et al., 2011).

The hotel industry around the globe has been paying more attention to ecological issues as of late. It was noticed that 75 % of the environmental contamination caused by the hotel industry was the intemperate utilisation of vitality, water, and materials amid the activity of the business. Wastewater, vapour, and substances released amid the procedure will cause unfriendly effects on our condition. In this way, without the suitable structure and plan, nature will be antagonistically influenced. The idea of environmental protection and vitality preservation can invigorate green administration to assemble hotel offices. In the event that the hotel industry can try green administration, it won't just be advantageous to natural and biological assurance, yet will likewise diminish hotel working expenses. In addition, green showcasing can draw in purchasers who likewise bolster similar ideologies (Chen, Chen, 2012).

Social Dimension (Social Responsibility)

Social responsibility is a critical term for the hospitality business. An idea whereby organisations incorporate social and natural worries into their business forms and associate with partners on an intentional premise. Social responsibility is the duty of organisations to act morally and add to improvement while enhancing the personal satisfaction of the workforce, their families and in addition the network and society all in all (Sydnor et al., 2014).

Social responsibility exercises in the hotel sector centre around the wellbeing and security of workers and visitors, decreasing the negative effect on nature and regarding the social and moral principles of the organisation and the network. A hotel that oversees common assets and wastes

sensibly diminishes its negative effect on the earth. The immediate sea likewise profits by advancing ecological thoughts among colleagues in a socially mindful hotel. The potential advantages of the network are expanded professional stability, social and instructive development, and animating the monetary advancement of nearby business visionaries (Abram, Jarzabek, 2016).

Marketing Environments

The changing in market environment proved the difficulties that market manager faced; it requires him to earn much information from business such as the demand and supply chain, the quality of the production process and so on, in order to examine and evaluate upcoming opportunities. Marketing environment divided into two categories, the indirect environment like customers and organisations, the external (indirect) environment, which is border than direct market, and include economic, technological, legal and cultural environment (Tabassum, 2014).

Microenvironment

The balance could be evident at micro-level environment through the scope and construction of the purchased utilities with accessible income and that's for consumer product that the company deal with such as inputs buyer or consumer goods. The contribution of trading ensures stability at the microenvironment and that's important to specify normality market (Pîndiche, Ionita, 2013).

Macro-Environment

The macro environment is an important factor, which leads to constant work and regular process. It could guide the organisation's activities, ensure that can handle the needs of the society, and it has an impact on an organisation's behaviour such as customer's behaviour and so on. In addition to that, the macro environment affects microenvironment because of the macro environment's broader power (Pîndiche, Ionita, 2013).

3. Methodology

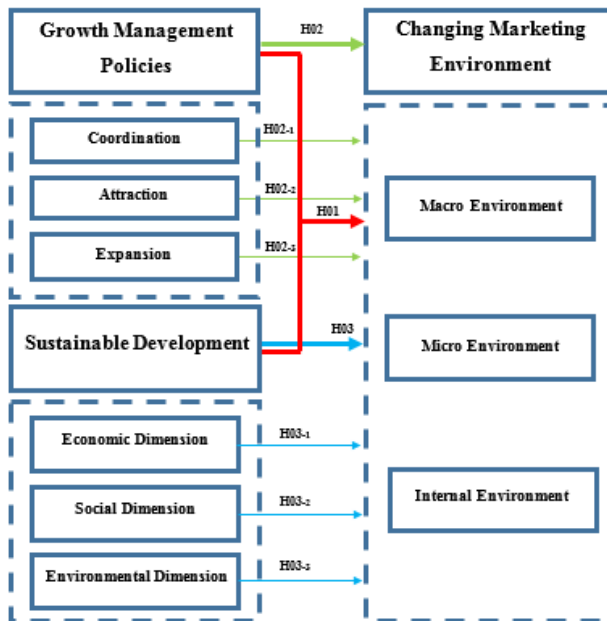
Research Instrument

The instrument contains (26) items measuring the impact of the careful application of growth management policies and sustainable development on the changing marketing environment. The questionnaire has been distributed by hand.

The questionnaire contains (3) demographic variables and (26) questions that represent the study variables, which are:

- Growth Management Policies, which has been formulated into benchmarks or objectives to be reached, and has been divided into (3) fields with (9) questions in total as shown below:
 - Coordination, which contains (3) questions.
 - Attraction, which contains (3) questions.
 - Expansion, which contains (3) questions.
- Sustainable Development, which has been formulated into benchmarks or objectives to be reached, and has been divided into (3) fields with (9) questions in total as shown below:
 - Economic Dimension, which contains (3) questions.
 - Social Dimension, which contains (3) questions.
 - Environmental Dimension, which contains of (3) questions.
- Changing Marketing Environment, which has been formulated into benchmarks or objectives to be reached, and has been divided into (2) fields with (8) questions in total as shown below:
 - Micro Environment, which contains (4) questions.
 - Macro-Environment, which contains (4) questions.

Study model



Hypotheses of the Study

1. Main Hypothesis (H01). There is no statistically significant impact of careful application of growth management policies (coordination, attraction, and expansion) and sustainable development (economic dimension, social dimension, and environmental dimension) on the changing marketing environment at the level ($\alpha \leq 0.05$).

2. Main Hypothesis (H02). There is no statistically significant impact of the careful application of growth management policies on the changing marketing environment at the level ($\alpha \leq 0.05$).

This hypothesis is divided into two sub-hypotheses:

- Sub Hypothesis (H02-1). There is no statistically significant impact of the careful application of growth management policies on the microenvironment at ($\alpha \leq 0.05$).

- Sub Hypothesis (H02-2). There is no statistically significant impact of the careful application of growth management policies on the macro-environment at ($\alpha \leq 0.05$).

- H02-2: There is no statistically significant impact of attraction on the changing marketing environment at ($\alpha \leq 0.05$).

- H02-3: There is no statistically significant impact of expansion on the changing marketing environment at ($\alpha \leq 0.05$).

- This hypothesis is divided into two sub-hypotheses:

3. Main Hypothesis (H03). There is no statistically significant impact of sustainable development on the changing marketing environment at the level ($\alpha \leq 0.05$).

- Sub Hypothesis (H03-1). There is no statistically significant impact of the sustainable development on the microenvironment at ($\alpha \leq 0.05$).

- Sub Hypothesis (H03-2). There is no statistically significant impact of the sustainable development on the macro-environment at ($\alpha \leq 0.05$).

Data Analysis and Interpretation

To examine the hypotheses of the study, which were specifically formulated to examine the impact of careful application of growth management policies and sustainable development on the changing marketing environment, the Statistical Package for Social Sciences (SPSS) was used so as to process the following statistical techniques and tests and employ them in the data analysis:

- Descriptive Statistical Techniques; these techniques include means and standard deviations that were used to illustrate the respondents to the study fields;

- Reliability Test; this test employs instruments that were used to measure the reliability of the study instrument and highlight its stability and consistency;

- Frequencies and Percentages; these techniques were used to describe the demographical variables of the study;

- Normality tests;

- Multiple Regression Test; this test was used to explore the direct impacts of the study variables.

Respondents were asked to read each question, and select one of the choices that are shown below:

- Score (5), for respondents who (Strongly Agree)
- Score (4), for respondents who (Agree)
- Score (3), for respondents who (Neutral)
- Score (2), for respondents who (Disagree)
- Score (1), for respondents who (Strongly Disagree)

Participants

The population of the study consisted of all Senior Managers who work at five-star hotels at the Dead Sea in Amman, Jordan, who amounted to (19) Senior Managers in (6) hotels. The entire study population was selected due to their low number to represent the sample of the study as shown in [Table 1](#). (19) Questionnaires were distributed, and all were retrieved, making the number of valid questionnaires (19), which was identified as (100%) of the total of distributed questionnaires, which are detailed below:

Table 1. Demographic Characteristics for the Study Sample (Gender)

Gender	Sample	
	Frequency	Percentage
Male	16	84.2%
Female	3	15.7%
Total	19	100%

From [Table 1](#) it shows that the percentage of males from the Sample was (78.94 %) meanwhile it was for females (21.06 %).

Table 2. Demographic Characteristics of the Sample (Academic Level)

Academic Level	Sample	
	Frequency	Percentage (%)
High School Degree or below	0	0.0%
Bachelor's Degree	2	10.52%
Master's Degree	7	36.84%
Doctorate Degree	10	52.63%
Total	19	100.0%

For the variable (Academic Level), it's shown that the (High School Degree or below) rank has achieved (0.0%), while the (Bachelor's Degree) rank achieved (10.52 %); on the other hand, the (Master's Degree) rank achieved (36.84 %), while the (Doctorate Degree) rank achieved (52.63 %).

Table 3. Demographic Characteristics of the Sample (Years of Experience)

Years Of Experience	Sample	
	Frequency	Percentage (%)
Less Than 1 Year	1	5.26 %
1-3 years	2	10.52 %
3-5 Years	10	52.63 %
More Than 5 Years	7	36.84 %
Total	19	100.0 %

For the variable (Years of Experience), it's shown that the (Less than 1 year) rank has achieved (5.26 %), while the (1-3 years) rank achieved (10.52 %); on the other hand, the (3-5 years) rank achieved (52.63 %), while the (More than 5 years) rank achieved (36.84 %).

Tool Validity

Table 4. Cronbach's Alpha for the Study Fields

Field Number	Field	Value of (α)
Growth Management Policies		
1	Coordination	0.712
2	Attraction	0.733
3	Expansion	0.954
Sustainable Development		
1	Economic Dimension	0.606
2	Social Dimension	0.753
3	Environmental Dimension	0.874
Changing Marketing Environment		
1	Micro Environment	0.684
2	Macro-Environment	0.801

As shown from the table above, it can be established that the total of Cronbach's Alpha for the study fields was above (0.60), which means that the results of the study will be stable.

Analysis of the Results

To analyse the data and examine the hypotheses, as well as explore the impact of the careful application of growth management policies and sustainable development on the changing marketing environment, descriptive statistics for each field were calculated, in addition to using multiple and Linear Regression as follows:

Descriptive Statistics for the Instrument's Fields

Means and standard deviations were calculated for each field of the study instrument, where all the results are shown in [Table 5](#) as follows:

Table 5. Descriptive Statistics for Management Policies and Their Impact on the Changing Marketing Environment

Field Number	Field	Mean	Std. Deviation	Level
F1	Coordination	3.91	0.51	High
F2	Attraction	4.11	0.61	High
F3	Expansion	3.79	0.88	High
F4	Economic Dimension	4.09	0.47	High
F5	Social Dimension	3.95	0.54	High
F6	Environmental Dimension	3.93	0.66	High
F7	Micro Environment	4.24	0.40	High
F8	Macro-Environment	4.14	0.51	High

As seen from the table above, it's apparent that the Coordination field has achieved a mean of (3.91) with a standard deviation of (0.51), while the Attraction field has reached a mean of (4.11) and a standard deviation of (0.61); in addition, the Expansion field has achieved a mean of (3.79) with a standard deviation of (0.88).

On the other hand, it's been established that the Economic Dimension field has achieved a mean of (4.09) with a standard deviation of (0.47), while the Social Dimension field has reached a mean of (3.95) and a standard deviation of (0.54); in addition, the Environmental Dimension field has achieved a mean of (3.93) with a standard deviation of (0.66).

In addition, it has been established through the table above that the Micro Environment field achieved a mean of (4.24) with a standard deviation of (0.40), while the Macro-Environment field has reached a mean of (4.14) and a standard deviation of (0.51).

4. Results and Discussion

Main Hypothesis (H01). There is no statistically significant impact of careful application of growth management policies (coordination, attraction, and expansion) and sustainable development (economic dimension, social dimension, and environmental dimension) on the changing marketing environment at the level ($\alpha \leq 0.05$).

The Multiple Regression test has been used to check the direct impact of careful application of growth management policies and sustainable development on the changing marketing environment, where the results can be found in the table below:

Table 6. Multiple Regression Test to Check the Direct Impact of growth management policies and sustainable development on the changing marketing

Dependent Variable	R	R ²	F	Sig	DF	Coefficients			
						Predictor	B	T	Sig
Changing Marketing Environment	.900	.810	34.009	.000	2	Constant	2.099	5.261	.000
					16	growth management policies	.739	3.594	.002
					18	sustainable development	.205	0.787	.443

As shown from the table above regarding the impact of careful application of growth management policies and sustainable development on the changing marketing environment, there is a significant impact of growth management policies and sustainable development on the changing marketing environment, as the significant value was (0.000), which is less than (0.05), while the value of R was (0.900), and the coefficient of the determination R² was (0.810). In addition, about (81.0 %) of the variation in the changing marketing environment is explained by

growth management policies and sustainable development. Furthermore, the Restriction Parameter (F) of the changing marketing environment was (34.009), which is caused by growth management policies and sustainable development; thus, we will accept the alternative hypothesis “There is a statistically significant impact of careful application of growth management policies (coordination, attraction, and expansion) and sustainable development (economic dimension, social dimension, and environmental dimension) on the changing marketing environment at the level ($\alpha \leq 0.05$)”

Main Hypothesis (Ho2). There is no statistically significant impact of the careful application of growth management policies on the changing marketing environment at the level ($\alpha \leq 0.05$).

To check the validity of the multiple regression for this model, both the VIF and tolerance were calculated for each field for the first independent variable as illustrated in the following table:

Table 7. VIF and Tolerance for Each Field for the First Independent Variable

Field	Tolerance	VIF
Coordination	.119	8.389
Attraction	.108	9.265
Expansion	.163	6.144

As shown in the table above, it seems that all VIF values were less than 10, which leads to the compatibility of using the Multiple Regression test.

In addition, and regarding the tolerance values, it's been revealed that these values are more than (0.05), which means that the regression modelling can be used to test the hypotheses.

The Multiple Regression test has been used to check the direct impact of growth management policies on the changing marketing environment, where the results can be found in the table below:

Table 8. Multiple Regression Test to Check the Direct Impact of Growth Management Policies on the Changing Marketing Environment

Dependent Variable	R	R ²	F	Sig	DF	Coefficients			
						Predictor	B	T	Sig
Changing Marketing Environment	.899	.809	21.155	.000	3	Constant	1.690	3.604	.003
					15	Coordination	.196	.719	.483
						Attraction	.321	1.342	.200
					18	Expansion	.110	.817	.427

As shown from the table above regarding the impact of careful application of growth management policies on the changing marketing environment, there is a significant impact of growth management policies on the changing marketing environment, as the significant value was (0.000), which is less than (0.05), while the value of R was (0.899), and the coefficient of the determination R² was (0.809). In addition, about (80.9 %) of the variation in the changing marketing environment is explained by growth management policies. Furthermore, the Restriction Parameter (F) of the changing marketing environment was (21.155), which is caused by growth management policies; thus, we will accept the alternative hypothesis “There is a statistically significant impact of the careful application of growth management policies on the changing marketing environment at the level ($\alpha \leq 0.05$).”

Sub Hypothesis (Ho2-1). There is no statistically significant impact of the careful application of growth management policies on the microenvironment at ($\alpha \leq 0.05$).

The Multiple Regression test has been used to check the direct impact of growth management policies on the microenvironment, where the results can be found in the table below:

Table 9. Multiple Regression Test to Check the Direct Impact of Growth Management Policies on the Microenvironment

Dependent Variable	R	R ²	F	Sig	DF	Coefficients			
						Predictor	B	T	Sig
Microenvironment	.873	.762	15.996	.000	3	Constant	1.477	3.604	.003
					15	Coordination	.404	1.421	.176
						Attraction	.400	1.607	.129
					18	Expansion	-.122	-.873	.397

As shown from the table above regarding the impact of careful application of growth management policies on the microenvironment, there is a significant impact of growth management policies on the microenvironment, as the significant value was (0.000), which is less than (0.05), while the value of R was (0.873), and the coefficient of the determination R² was (0.762). In addition, about (76.2%) of the variation in the microenvironment is explained by growth management policies. Furthermore, the Restriction Parameter (F) of the microenvironment was (15.996), which is caused by growth management policies; thus, we will accept the alternative hypothesis “There is a statistically significant impact of the careful application of growth management policies on the microenvironment at ($\alpha \leq 0.05$).”

Sub Hypothesis (H02-2). There is no statistically significant impact of the careful application of growth management policies on the macro-environment at ($\alpha \leq 0.05$).

The Multiple Regression test has been used to check the direct impact of growth management policies on the macro-environment, where the results can be found in the table below:

Table 10. Multiple Regression Test to Check the Direct Impact of Growth Management Policies on the Macro-Environment

Dependent Variable	R	R ²	F	Sig	DF	Coefficients			
						Predictor	B	T	Sig
Macro-Environment	.852	.726	13.268	.000	3	Constant	1.903	2.822	.013
					15	Coordination	-.011	-.028	.978
						Attraction	.242	.703	.493
					18	Expansion	.341	1.768	.097

As shown from the table above regarding the impact of careful application of growth management policies on the macro-environment, there is a significant impact of growth management policies on the macro-environment, as the significant value was (0.000), which is less than (0.05), while the value of R was (0.852), and the coefficient of the determination R² was (0.726). In addition, about (72.6 %) of the variation in the macro-environment is explained by growth management policies. Furthermore, the Restriction Parameter (F) of the macro-environment was (13.268), which is caused by growth management policies; thus, we will accept the alternative hypothesis “**There is a statistically significant impact of the careful application of growth management policies on the macro-environment at ($\alpha \leq 0.05$).**”

Main Hypothesis (H03). There is no statistically significant impact of sustainable development on the changing marketing environment at the level ($\alpha \leq 0.05$).

To check the validity of the multiple regression for this model, both the VIF and tolerance were calculated for each field for the second independent variable as illustrated in the following table:

Table 11. VIF and Tolerance for Each Field for the Second Independent Variable

Field	Tolerance	VIF
Economic Dimension	.179	5.573
Social Dimension	.271	3.695
Environmental Dimension	.368	2.720

As shown in the table above, it seems that all VIF values were less than 10, which leads to the compatibility of using the Multiple Regression test.

In addition, and regarding the tolerance values, it's been revealed that these values are more than (0.05), which means that the regression modelling can be used to test the hypotheses.

The Multiple Regression test has been used to check the direct impact of sustainable development on the changing marketing environment, where the results can be found in the table below:

Table 12. Multiple Regression Test to Check the Direct Impact of Sustainable Development on the Changing Marketing Environment

Dependent Variable	R	R ²	F	Sig	DF	Coefficients			
						Predictor	B	T	Sig
Changing Marketing Environment	.829	.688	11.004	.000	3	Constant	1.805	3.310	.005
					15	Economic Dimension	-.144	-.469	.646
						Social Dimension	.398	1.817	.089
						Environmental Dimension	.357	2.347	.033

As shown from the table above regarding the impact of careful application of sustainable development on the changing marketing environment, there is a significant impact of sustainable development on the changing marketing environment, as the significant value was (0.000), which is less than (0.05), while the value of R was (0.829), and the coefficient of the determination R² was (0.688). In addition, about (68.8%) of the variation in the changing marketing environment is explained by sustainable development. Furthermore, the Restriction Parameter (F) of the changing marketing environment was (11.004), which is caused by sustainable development; thus, we will accept the alternative hypothesis "There is a statistically significant impact of the careful application of sustainable development on the changing marketing environment at the level ($\alpha \leq 0.05$)."

Sub Hypothesis (H03-1). There is no statistically significant impact of the sustainable development on the microenvironment at ($\alpha \leq 0.05$).

The Multiple Regression test has been used to check the direct impact of sustainable development on the microenvironment, where the results can be found in the table below:

Table 13. Multiple Regression Test to Check the Direct Impact of Sustainable Development on the Microenvironment

Dependent Variable	R	R ²	F	Sig	DF	Coefficients			
						Predictor	B	T	Sig
Microenvironment	.782	.612	7.879	.002	3	Constant	2.145	3.785	.002
					15	Economic Dimension	.113	.354	.728
						Social Dimension	.036	.158	.877
						Environmental Dimension	.378	2.393	.030

As shown from the table above regarding the impact of careful application of sustainable development on the microenvironment, there is a significant impact of sustainable development on the microenvironment, as the significant value was (0.002), which is less than (0.05), while the value of R was (0.782), and the coefficient of the determination R² was (0.612). In addition, about (61.2%) of the variation in the microenvironment is explained by sustainable development. Furthermore, the Restriction Parameter (F) of the microenvironment was (7.879), which is caused by sustainable development; thus, we will accept the alternative hypothesis "There is a statistically significant impact of the sustainable development on the microenvironment at ($\alpha \leq 0.05$)."

Sub Hypothesis (H03-2). There is no statistically significant impact of the sustainable development on the macro-environment at ($\alpha \leq 0.05$).

The Multiple Regression test has been used to check the direct impact of sustainable development on the macro-environment, where the results can be found in the table below:

Table 14. Multiple Regression Test to Check the Direct Impact of Sustainable Development on the Macro-Environment

Dependent Variable	R	R ²	F	Sig	DF	Coefficients			
						Predictor	B	T	Sig
Macro-Environment	.820	.673	10.274	.001	3	Constant	1.464	2.184	.045
					15	Economic Dimension	-.402	-1.062	.305
						Social Dimension	.761	2.821	.013
						Environmental Dimension	.336	1.794	.093

As shown from the table above regarding the impact of careful application of sustainable development on the macro-environment, there is a significant impact of sustainable development on the macro-environment, as the significant value was (0.001), which is less than (0.05), while the value of R was (0.820), and the coefficient of the determination R² was (0.673). In addition, about (67.3%) of the variation in the macro-environment is explained by sustainable development. Furthermore, the Restriction Parameter (F) of the macro-environment was (10.274), which is caused by sustainable development; thus, we will accept the alternative hypothesis "There is a statistically significant impact of the sustainable development on the macro-environment at ($\alpha \leq 0.05$)."

5. Conclusion, proposals, recommendations

Discussion of the Results

First: Careful Application of Growth Management Policies

The results of the means and standard deviations of the careful application of growth management policies fields from the point of view of the analysis showed that they were high, where the Attraction field came first, and the Expansion came last. This indicates that five-star hotels at the Dead Sea in Amman, Jordan care about attracting as many customers as possible in order for their business to thrive and grow. It can also imply that five-star hotels at the dead sea in Amman, Jordan care about expanding their business and making it grow regardless of the expenses that may come along with it, so long as it serves the objectives of the hotel and ensures better results in the long run.

Coordination

Results have shown that the total mean and standard deviation of the Coordination field were high, where it had a mean of (3.91) and a standard deviation of (0.51). This is because hotels at the Dead Sea in Amman, Jordan consider coordination an important element of its working environment and aims to instil it within its employees as much as possible.

Attraction

Results have shown that the total mean and standard deviation of the Attraction field were high, where it had a mean of (4.11), and a standard deviation of (0.61). This can be attributable to the keenness of five-star hotels at the Dead Sea in Amman, Jordan to employ the best ways possible to attract customers and broaden the scope of its customers, in addition to increasing their market share.

Expansion

Results have shown that the total mean and standard deviation of the Expansion field were high, where it had a mean of (3.79), and a standard deviation of (0.88). This is because five-star hotels at the Dead Sea in Amman, Jordan care about expanding their business and property in order to be able to provide more services, which, in turn, will make them more profits and allow them to grow.

Second: Sustainable Development

The results of the means and standard deviations of the sustainable development fields from the point of view of the analysis showed that they were high, where the Economic Dimension field came first, while the Environmental Dimension came last. This indicates that five-star hotels at the Dead Sea in Amman, Jordan care about boosting the economic stance and providing sustainable growth to the market as a part of its responsibility. It can also imply that five-star hotels at the Dead Sea in Amman, Jordan care about the environment as they live in it are keen to practise their role in preserving the environment as much as possible.

Economic Dimension

Results have shown that the total mean and standard deviation of the Economic Dimension field were high, where it had a mean of (4.09), and a standard deviation of (0.47). This is because five-star hotels at the Dead Sea in Amman, Jordan care about boosting the economic stance of the country it exists in and aims to provide a sustainable growth to the market as a part of its responsibility.

Social Dimension

Results have shown that the total mean and standard deviation of the Social Dimension field were high, where it had a mean of (3.95), and a standard deviation of (0.54). This can be attributable to the keenness of five-star hotels at the Dead Sea in Amman, Jordan to be a pivotal part in the society they live in; they also consider being active in the social dimension good for their overall image.

Environmental Dimension

Results have shown that the total mean and standard deviation of the Environmental Dimension field were high, where it had a mean of (3.93) and a standard deviation of (0.66). This is because five-star hotels at the Dead Sea in Amman, Jordan care about being an active actor when it comes to issues related to the environment, in addition to the fact that it lowers its costs, and paints a positive picture for customers who share the same views as them.

Third: Changing Marketing Environment

The results of the means and standard deviations of the changing marketing environment fields from the point of view of the analysis showed that they were high, where the microenvironment field came first, while the macro-environment came last. This indicates that five-star hotels at the Dead Sea in Amman, Jordan care about their microenvironment since it is

the most vital part of the business as it includes providers, market mediators, clients, partners, contenders, as well as the society in general. It can also imply that five-star hotels at the Dead Sea in Amman, Jordan care about their macro-environment as it prompts steady work and customary process.

Microenvironment

Results have shown that the total mean and standard deviation of the microenvironment field were high, where it had a mean of (4.24), and a standard deviation of (0.40). This is because five-star hotels at the Dead Sea in Amman, Jordan care about the external powers and factors that shape the microenvironment, which involves providers, market mediators, clients, partners, contenders, as well as the society in general, and guarantee they provide them with the best services and offers.

Macro-Environment

Results have shown that the total mean and standard deviation of the Macro-Environment field were high, where it had a mean of (4.14), and a standard deviation of (0.51). This can be attributable to the keenness of five-star hotels at the Dead Sea in Amman, Jordan to keep an eye out for external factors that might affect its business and aims to employ policies that would reinforce the beneficial factors and prevent the non-beneficial ones.

Discussion of the Hypotheses' Results

The main hypothesis (H01) showed that there is a statistically significant impact of careful application of growth management policies (coordination, attraction, and expansion) and sustainable development (economic dimension, social dimension, and environmental dimension) on the changing marketing environment; this indicates that the five-star hotels in the Dead Sea are pursuing innovative policies to develop their service delivery practices so as to contribute to sustainable development and to make a radical and positive impact on the marketing environment.

The main hypothesis (H02) showed that there is a statistically significant impact of the careful application of growth management policies on the changing marketing environment. This can be because five-star hotels at the Dead Sea in Amman, Jordan make use of the growth policies to grow its business in order to respond fast to changes in the concerned environments effectively.

This hypothesis is divided into two sub-hypotheses:

The first sub-hypothesis (H01-1) showed that there is a statistically significant impact of the careful application of growth management policies on the microenvironment. This is because five-star hotels at the Dead Sea in Amman, Jordan aim to employ policies that are effective in terms of the microenvironment and the actors within that environment in order to gain benefits from it.

The second sub-hypothesis (H01-2) showed there is a statistically significant impact of the careful application of growth management policies on the macro-environment. This is because five-star hotels at the Dead Sea in Amman, Jordan care about the dynamic and competitive nature of their sector, which require them to develop in a strategical way in order to survive.

The main hypothesis (H02) showed that there is a statistically significant impact of the careful application of sustainable development on the changing marketing environment. This can be because five-star hotels at the Dead Sea in Amman, Jordan believe that sustainable development helps with managing their business in order to respond fast to changes in the concerned environments.

This hypothesis is divided into two sub-hypotheses:

The first sub-hypothesis (H02-1) showed that there is a statistically significant impact of the sustainable development on the microenvironment. This is because five-star hotels at the Dead Sea in Amman, Jordan correspond positively to their interest in sustainable development and its connection to accomplishing environmental and social benefits within the microenvironment; it can be also due to the fact that if managers perform high levels of social and environmental responsibility, they can improve their profits.

The second sub-hypothesis (H02-2) showed that there is a statistically significant impact of the sustainable development on the macro-environment. This is because five-star hotels at the Dead Sea in Amman, Jordan care about employing sustainable development policies as they affect the macro-environment positively and helps them grow their business and becoming part of the highly-competing hotels in their sector.

6. Conclusion

The significance of cautious utilization of development administration approaches the careful application of growth management policies and sustainable development is starting to be acknowledged by the entire world, particularly in five-star hotels at the Dead Sea in Amman, Jordan due to the far-reaching crises worldwide economy in general, and the Jordanian economy in particular. Hence, careful application of growth management policies and sustainable development have turned out to be vital requirements for any business to develop, given that they employ new and pioneering ways and methodologies to oversee various types of circumstances viably and offer exercises that are not the same as the traditional or ones that are unlike those that have been made before. It also allows hotels to be a memorable actor that people can relate to.

The present study was made as an attempt to explore the impact of the careful application of growth management policies and sustainable development on the changing marketing environment in five-star hotels at the Dead Sea in Amman, Jordan. In light of the results shown in this study, it has been concluded that organisations, especially hotels, should employ the different policies of growth management as well as practise the different responsibilities of sustainable development in order to help them achieve their short-and long-term goals and objectives, and how they would affect their micro- and macro-environments and, in turn, the thrive of their business, as these policies and responsibilities help senior managers to expand their knowledge and expertise in a way that suits the situation at hand, especially since the economic system is becoming more complex with each passing day.

Research Limitations and Direction for Further Research

The human limitation presented a major limitation within this study, as the study population was limited to include Senior Managers who work at five-star hotels at the Dead Sea in Amman, Jordan only.

While choosing Senior Managers who work at five-star hotels at the Dead Sea in Amman, Jordan was effective and appropriate for the current study, it would've been more effective to incorporate a bigger sample to acquire better outcomes. It would also be preferable to broaden the scope of the study to include hotels other than the ones in the Dead Sea and have it from across the entire Hashemite Kingdom of Jordan. In addition, further qualitative research would be required later on to measure the impact of the careful application of growth management policies and sustainable development on the changing marketing environment accurately.

Further research into the broader and more extensive impact of the careful application of growth management policies and sustainable development on the changing marketing environment with any new outcomes, regardless of whether they are positive or negative, would be highly valued and appreciated by the researcher.

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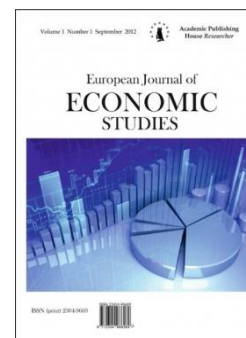
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The Possibility of Development of Sport-Recreational Tourism on Mountain Area Trešnjevik – Lisa and Environment

Jelisavka Bulatovic ^a, Aleksandra Mladenović ^a, Goran Rajović ^{b, c, *}^a College of Textile Design, Technology and Management, Belgrade, Serbia^b International Network Center for Fundamental and Applied Research, Washington, USA^c Volgograd State University, Volgograd, Russian Federation

Abstract

Sport and recreational tourism in the present time in Montenegro, it is actually one of the special forms of tourism that has a high tendency of growth. Mountainous area Trešnjevik – Lisa abounds in sports-recreational facilities that are only partially used. Many experts consider tourism today as a complex phenomenon, and it is also the subject of very frequent research. Almost everywhere in the world there is an area visited by tourists every day. Trends and society are changing, but the motives of traveling remain the same. There is a growing imperative to sports and recreation on vacation because of the hectic everyday life (Kalavarić, 2017). The mountainous area Trešnjevik – Lisa can be reached from two directions with a relatively good traffic connection: Kolašin – Mateševo – Bara Kralja (21 km) and from Andrijevića – via Most Bandović (15 km). The goal of developing of sports and recreational tourism in this mountainous area and its surroundings is to provide tourists with: establishing a balance between functional, motor and working abilities, satisfying social needs through entertainment, leisure and socializing, as well as rest, relaxation and recovery (Zegnal, Pletenac, 2010). The results of the research showed that sports and recreational facilities exist in only two tourist objects and that should strive for the construction of tourist accommodation facilities expanding the offer, introducing innovations, standardizing and improving sports-recreational content in the coming period, which would greatly contribute to the development of mountain areas Trešnjevik – Lisa as a destination of sports-recreational tourism.

Keywords: sport, recreation, development, tourism, Trešnjevik – Lisa, environment.

1. Introduction

Nepal and Chipeniuk (2005) according to Jodha (1991) has argued that mountain areas are quite distinct from other physiographic units and that 'specificities' such as diversity, marginality, inaccessibility, fragility and niche have influenced the level of development of the mountains. Nepal and Chipeniuk (2005) by Sharma (2000) has applied these concepts to tourism development issues in mountainous regions. To this one can add a further characteristic, namely the superior aesthetic quality of mountain landscapes. Discussed primarily in the context of mountainous area in the developing economies, this concept of mountain specificities is relevant to the developed economies as well, especially in terms of its potential application to mountain ecotourism (Nepal,

* Corresponding author

E-mail addresses: dkgoran.rajovic@gmail.com (G. Rajović), jelisavka.bulatovic@gmail.com (J. Bulatović), alexandra_mladenovic@ymail.com (A. Mladenović)

2002). Mountain diversity, marginality, inaccessibility, fragility, niche and aesthetics are interrelated and are dynamic concepts, as these characteristics are influenced by one another and change over time and space depending on the level of tourism development (Nepal, Chipeniuk, 2005).

Sports and recreational contents in animation programs in tourism offered to tourists during their stay in a certain tourist destination cause great interest of the tourists, since they are related to the maintenance and improvement of their psycho-physical health.

Practical realization of sports and recreational contents in tourist animation programs is relatively easy and simple, especially since numerous and simplest forms of movement are always available (for example walking, cycling) (Đorđević, 2017). Sports and recreational programs of tourist animation have a specific character compared to other, varied tourist animation programs, because their realization creates pleasant feelings and unforgettable experiences of tourists through physical activity and movement, and through various sports competitions, in the form of fun and "enjoyment". At the same time, this promotes interactive communication among tourists, which is one of the most important goals of sports and recreational animation, as well as the process of tourist animation in general (Đorđević, 2015).

The degree of research of sports and recreational tourism in Montenegro is very poor. Texts about this direction of thematic tourism with insufficient commitment are permeated through several official documents: Tourism Development Strategy in Montenegro until 2020 (2008); Spatial Plan of Montenegro until 2020 (2008); Program for the development of mountain tourism in Montenegro (2005); Special Purpose Spatial Plan "Bjelasica – Komovi" (2010), National Sports Development Program in Montenegro (2011). Sports recreation in tourism was also discussed in several published scientific papers according to Rajak (2014) (Bulatovic, Rajovic, 2017), however, there is still no progress. So far, none of the professional literature has been published, which would specifically refer to sports and recreational contents in tourism in Montenegro. In the application of GIS technology in order to promote sports-recreational tourism in Montenegro, Rajak (2014) did not encounter recorded research, except for public discussion and teaching courses that were held in Podgorica, with emphasis on the register of hiking trails. In the domain of sports tourism in Montenegro (which covers a broader range of sports – recreational tourism), according to Rajak (2014) so far has published the one monographic publication Klaric (2012) entitled "Sport tourism on the Montenegrin coast" which refers to sports tourism in Budva. Rajak (2014) concludes that, as far as the current research is concerned with the general theoretical concepts of sports tourism, the monograph "Sport Tourism" by the authors of Standeven and Knop (1999), while on the territory of the former Yugoslavia the most titles in this domain were published by Bartoluci (2004), Bartoluci et al (2006), Bartoluci (2013), Bartoluci et al (2013) ... Therefore, the reasrching problem in sports recreation is significant in the overall tourism system, with a special emphasis on the presence, promotion and development potential of sports and recreational contents in tourism in Montenegro, including the Trešnjevik – Lisa area (Rajović, Bulatović, 2017).

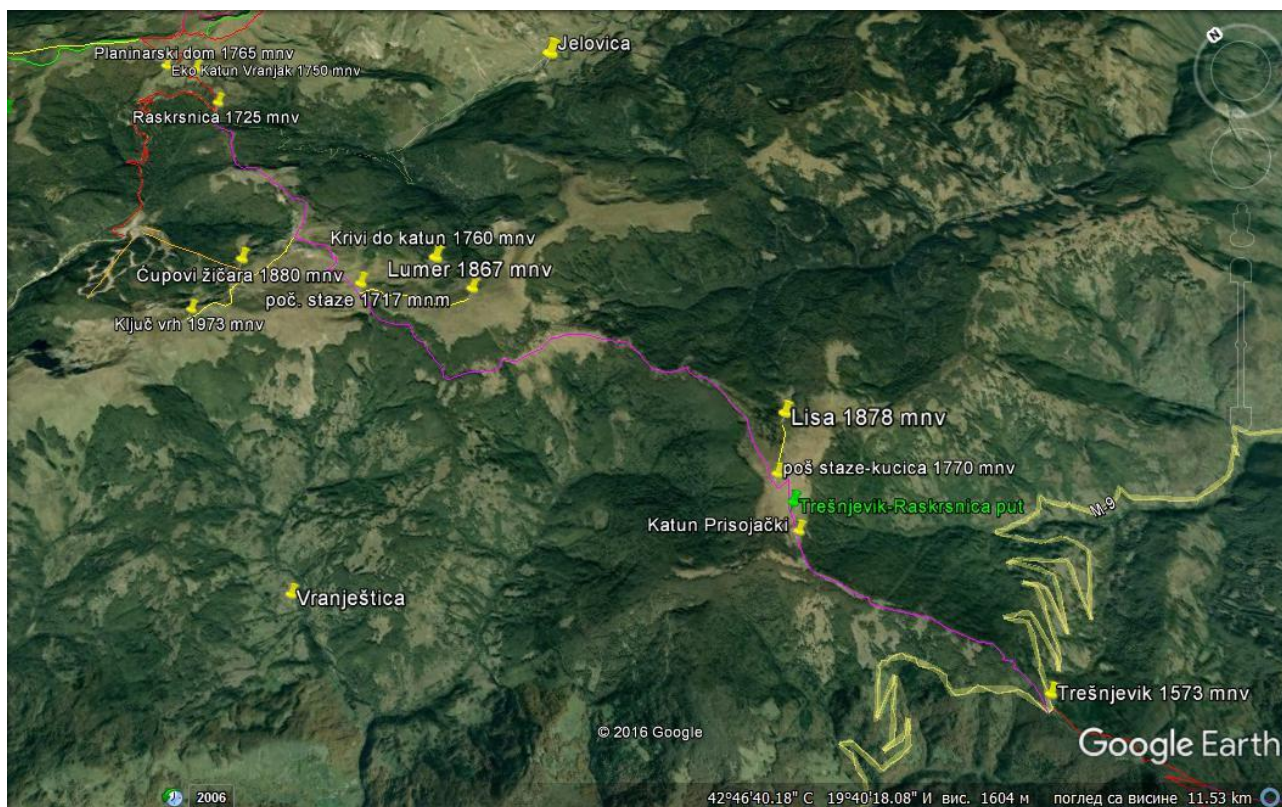


Fig. 1. Mountain area Trešnjevik – Lisa on Google Map (www.medium.com)

According to Jovović et al (**), sports and recreational tourism in Montenegro, however, has enormous natural potentials for the development of very different and attractive sports and recreational activities on which can be based the programs development on different destinations, including Komovi – Bjelasica area, regardless of the problems with the development of sports and recreational infrastructure. A special advantage of this form of tourism is that it provides an opportunity for inclusion in the tours of all parts of Montenegro, which creates the preconditions for a more balanced development of a more passive, continental part of Montenegro, because this area of Komovi - Bjelasica (see [Rajović, Bulatović, 2016](#)), which belongs to the Trešnjevik – Lisa area, has many more preconditions for the development of this form of tourism. According to Jovović et al. (**), sports and recreational forms of tourism even may be the best way of function all the natural potentials of the mainland Montenegro, even more than agriculture, because tourism directly generates the development of agricultural production.

2. Methodology research

In this paper, the authors rely primarily on the research of Šećibović and Plojović (2011) and are engaged in domain research ([Bulatović, Rajović, 2018](#)), i.e. by collecting primary data on the spot, visiting places and facilities with potentials or resources for the development of sports and recreational tourism ([Šećibović, Plojović, 2011](#)) in the mountainous area of Trešnjevik – Lisa. In addition to this method of data collection, authors use the collection of secondary data through the processing of strategic development documents, which in some of their areas also treat tourism development. In parts discussing the potentials of development, the authors use a method of descriptors to bring the problem closer to any reader or researcher ([Rajović, Bulatović, 2017](#)). In some parts of the research, the authors rely on the comparison method to illustrate how some resources have been used in other area and that these models could easily be transferred to the observed area. In some sources, such research is treated as an exoplanet be and demand extraordinary research activity in the field of development of sports and recreational tourism because it treats a previously unknown area ([Šećibović, Plojović, 2011](#)). The research problem is an important place for sports recreation in the overall tourism system, with a special emphasis on the

presence, promotion and development potential of sports and recreational contents in tourism in Montenegro, including the discussed area. According to Weed and Bull (2004) research in sport recreation tourism has focused on the problems and evaluations of the economic impacts of event sports recreation tourism; the trend towards leveraging research in event sports recreation tourism; the more holistic focus on social and cultural, as well as economic impacts of sports recreations participation tourism; the behavioral focus of research in sports recreation participation tourism, the examination of the role of sports recreations tourism in destination marketing and in generating media exposure; and the increasing concern with developing positive perceptions among local residents. It has been suggested that there is a need for theory as the field is transitioning from the “what” and the “who” to understanding the “why” and “how” (Gibson, 2008).

3. Analysis and Discussion

For millennia, mountains have been important for human livelihoods, in terms of agriculture and livestock raising as well as transport and trading of goods. Yet, in the current world economy, many mountains area have become marginal areas where few investments are made, people are economically disadvantaged, and resources are being degraded through many types of overuse. Tourism has become a primary source of revenue for many mountain areas, providing a rare opportunity for mountain people to participate directly in the global economy. There are many opportunities for the development of tourism in mountain regions (Mountain Agenda, 1999). According to Kassaye (2019) citing Clawson (1959) indicates that putting an accurate and acceptable value on outdoor sport-recreation would be valuable in resource management in different ways. First, it would provide a means for comparing the importance of sport-recreation with that of other uses of the same resources. Secondly, the value of the sport-recreation to be provided by a proposed recreation site would provide one measure of the desirability of making the necessary investment in the project. Thirdly, the value of the sport-recreation would provide a ceiling to any fees that might be charged for its use.

Table 1. Functions of tourism and sports recreation

Functions of tourism	Functions of sports – recreation
I. Social (humanist) sports – recreational -culture – educational health related socio-political II. Economic functions currency for employment for a development of underdeveloped areas - multiplicative conversational	I. Social (humanist) health related educational socio-political II. Economic functions currency for employment multiplicative

Source: Bartoluči, Andrijašević, 1999.

Considering the table, the sports-recreational animation can be spotted, and only the functions of the sports-recreational animation will be elaborated. Namely, one of the most relevant functions of tourism and sport in tourism is the health related function. It is known that various programmers from the domain of sport and recreation have a positive impact on keeping and improving the visitors' health. The numerous researches have confirmed the thesis that doing sports and recreation helps prevent diseases, which are present in the contemporary life, and it also promotes the functional capabilities of the organism. The health related function is one of the most important incentives for traveling and change of the place of residence, considering the fact that it can be realized with the existence of natural resources (sun, water and rays) (Jakovlev et al., 2011).

The best way to understand tourist motivation is to regard travel as a satisfier of needs and wants (Mill, Morrison, 1985). Silva (2019) according to Crompton (1979) and Crompton & McKay (1997) indicates that whole process begins with the needs of an individual. Wants occur when the person is either aware of the existence of the needs, or possibly even when in an unconscious condition. Then action will be taken when he/she is motivated. People travel because they believe that their needs and wants will be satisfied partially or even wholly by vacations or trips. The internal psychological factors (needs and wants) cause disequilibrium or tension within the individual, which lead to actions (for example taking vacation) to restore homeostasis by satisfying the required needs. However, people who take a pleasure trip are rarely compelled by a single need. Bartoluci et al (2016) according to Čavlek et al. (2011) and Keller (2001) indicates that when developing (sports-recreation) tourism in a certain area, one has to be familiar with its resources. "Overall tourism off err has to be based on autochthonous characteristics and capacities of resources (space) in order to achieve better economic and non-economic effects". In other words, the spatial element and natural resources play an irreplaceable role in deciding which sports-recreation to develop, since "general sporting recreation activities, which are integrated into leisure time tourism activities, depend greatly on the geographical and seasonal conditions at a destination".

The natural resources necessary for tourist attractions are climate tourism resources, geomorphological, hydrographic, bio-geographical and landscape tourism resources (Čavlek et al., 2011). A favorable climate is one of the most important factors of the tourist attraction of the mountainous area Trešnjevik – Lisa. The climatic conditions of a particular tourist destination, such as the discussed area, have to be suit by people to spend their holidays comfortably as the human organism is very susceptible to the influence of different climatic elements. In the tourism of the Trešnjevik – Lisa mountainous area, relief forms (depressions and elevations) and geomorphological phenomena have an important function in designing tourist needs, but also in the construction of numerous tourist accommodation capacities, communal and other infrastructure (Rajović, Bulatović, 2018). Unfortunately, in the discussed area are listed only two tourist facilities: "Krčmu Savo Lekić" and "Eco Dom Trešnjevik" located at the mountain pass of, surrounded by the mountains of Komovi and Bjelasica. Among the geomorphologic motives, the highest tourist value of Trešnjevik – Lisa has the mountainous character of the area, deriving its recreational importance or the possibility to practice with different sports, especially for skiing and hiking, but also for aesthetic and curiosity experiences (Rajović, Bulatović, 2016).



Fig. 2. " Krčma Savo Lekić " – tends to provide the most beautiful moments and the best quality food (www.pedelaj.me)



Fig. 3. “Eko dom Trešnjevik” – place for a vacation that leaves the tourists special and unforgettable memories (www.sr-rs.facebook.com)

Orientation and mass tourism trends towards the Komovi Mountains show that, with climate, hydrographic elements are the most attractive factors for the development of sports and recreational tourism. It should be mentioned Trešnjevički Stream, Rajova River and Čestogaz River (Rajović, Bulatović, 2018).



Fig. 4. Rest, recreation and research – one of the authors GR on Rajovoj (Rajović) River

The tourist value of the mentioned hydrographic objects (Bulatović, Rajović, 2018) provides exceptional possibilities for psychological rest, aesthetic experience and sightseeing, as well as the development of fishing tourism, swimming... Very important role in tourist developments have forest on Trešnjevik and Lisa, due to its functions and characteristics, as well as due to the possibility of organizing professional excursions, development of hunting tourism and other recreational possibilities. Abundance of game in forest areas Trešnjevik and Lise and brook trout in

Rajovoj (Rajović) River and Čestogaz River, offer outstanding opportunities for sports – recreational and entertainment events, as hunting, fishing, riding... The concept of landscapes in sports and recreational tourism is a unique set of different natural and social resources of the mountainous area of Trešnjevik – Lisa, which has a diverse and multi-faceted effect on man, and therefore they are classified into complex tourist motives of movement. Tesnjevik – Lisa mountain landscapes provide wide and long landscape experiences and exceptional scenes and are suitable for various recreational activities, especially if there is water (rivers) or snow in them (Čavlek et al., 2011). Mesophilic vegetation gives a distinctive look to the landscape. Basic structural elements of the landscape are spruce forests, meadows and pastures, and the whole mountainous area of – Lisa reflects freshness and green. Flower meadows are rich in endemic and relict species with decorative properties. The image of the area is completed by the katuns with traditional stockbreeder cottages (Bulatović, Rajović, 2018).



Fig. 5. Katun on the mountain Lisa – an enchanting view (www.toandrijevic.me)

Kassaye (2019) according to Manning (2011) and Neuvonen et al (2010) & Puustinen et al. (2009) indicates that visitor demand and associated mountain areas choices have been extensively examined, and correlations with internal area features and related quality have been identified. However, external characteristics such as access, accommodations, and available services outside the mountain areas have also been noted as factors that influence visitation. Page (2009) stated the reason behind the issue of defining visitor attractions is due to the diversity of users (tourists, residents, day-trippers) who provide a market broader than just tourists do. Page also states as the above reason has made many researchers to acknowledge the appropriate term to these attractions is a ‘visitor attractions’ (Kassaye, 2019).

Table 2. The diversification of winter sports activities

The diversification of winter sports activities	Contemporary winter sports activities
Skiing Cross – country skiing Telemarking Cat – skiing Winter sports events Ice – skating Horse – drawn sleigh Curling Tobogganing	Snowboarding Snowmobiling Snowshoeing Heli – skiing Parapente/hangliding Tubing Dog sledging Snow cycling Thrill – sleds/extreme sledding Ice – climbing Ice-drawing Ice sculpting Snow skating

Source: [Hudson, 2004](#)

Table 2 lists traditional winter sports along with those that are gaining popularity in the 21st century (Hudson, 2004). Denise and Florin (2018) according to (Markovic et al., 2013; Teodor, 2006; Higham et al., 2002; Agrawala, 2007) indicates that winter sports embrace activities, ranging from ice-skating to ice climbing, but it is skiing that is the mainstay of the winter tourism industry. The ski and snowboard industry has experienced remarkable growth in the last fifty years. It is estimated that today there are some 120 million skiers and snowboarders worldwide, with around 2.000 ski resorts in 80 countries catering to this important market. The physical exercise and tourism represent two activities which, together can contribute to life improvement. In recent years, it is seen that relationship between tourism and sport is increasing. Especially, the last part of 20 th century, defined as a term that witnessed increase of sport and tourism rapidly. Skiing activities represent very important attributes of winter tourism, being at the same sport activities, generating an entire industry within mountain areas.

This approach according to Radicchi (2013) based on research Wasche and Woll (2010) requires a variety of tools aimed at enhancing the potential attractiveness of a place by entering sports enterprises, local authorities, hotels, tour operators... In systems that allow effective management of relations with the market. A proper territorial promotion strategy through sports should not be only designed to induce a potential visitor to “buy” the services offered within a specific territory (events, sport...), but it should also establish a close relationship between customers (tourists, visitors) and local stakeholders (residents, institutions, local authorities, service providers, tour operators...) (Figure 6).

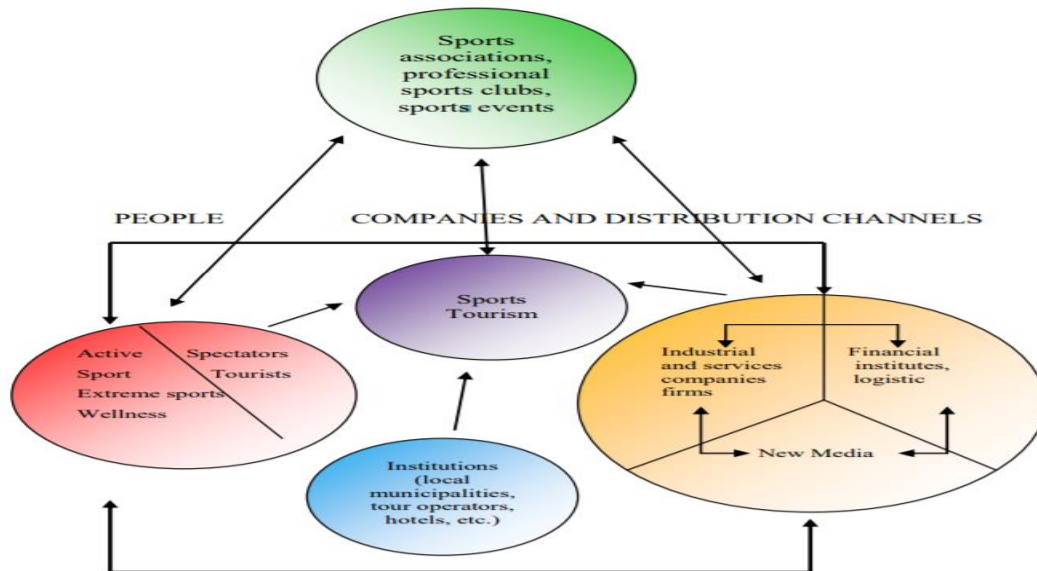


Fig. 6. The system of relationships among stakeholders for promoting a territory through sports tourism activities (Zagnoli, Radicchi, 2011)

The importance and the role of recreation as an integral part of tourism are especially emphasized by Williams (2009), who says: "in the approach of studying tourism, we must realize that the relation or connection between rest or leisure, recreation and tourism is much closer and more intimate ...".

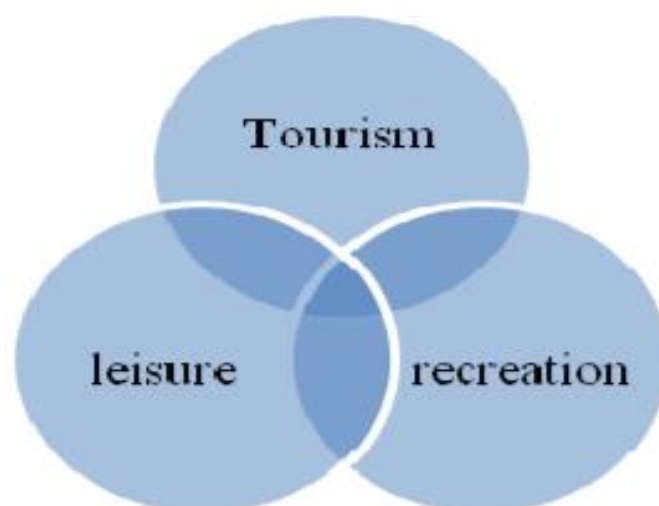


Fig. 7. Chematic representation of the relationship between leisure, recreation and tourism (Williams, 2009)

Our research records based on similar research by Šećibović and Plojović (2011) indicates that the lack of winter tourism capacities in the mountainous area of Trešnjevik – Lisa, which will be present for a long time, leads to the fact that smaller tourist centers that have conditions for winter sports and basic accommodation capacities become very attractive - the dispersion of ski resorts, terrains and of the accompanying capacities is becoming more pronounced. Ski Area Citizen's Coalition (SACC) from US defined eleven environmentally friendly criteria for ski resorts. The criteria include (Hudson, 2000): avoiding expansion of developed skiing acreage into undisturbed forest; avoiding commercial or residential development on undisturbed lands; avoiding real estate development in conjunction with terrain expansion; avoiding terrain alteration in environmentally sensitive areas; undertaking new snowmaking activities; avoiding water degradation from resort activities; environmental policy positions and public disclosure; wildlife habitat and forest protection; containing impacts within the ski area boundary; recycling, water conservation, energy conservation and pollution reduction and traffic and emissions reduction.

Citing research (Khadaroo and Seetanah in: Jafari, Xiao, 2016) Mandić et al. (2017) emphasizes that in a broader sense infrastructure includes physical, legal, environmental and mental amenities which contribute to making tourism product enjoyable, reliable and sustainable (Rajovic, Bulatovic, 2017). The physical infrastructure of direct relevance to tourism includes recreational facilities that along with hotels and other forms of accommodation, spas and restaurants form the main tourism infrastructure (Figure 7) (Mandić et al., 2017). In many cases Mandić et al. (2017) citing research (Getz, 1992; Formica, Uysal, 1996; Garay, Canoves, 2011; Van der Borg, 1991) emphasizes that, the state of the urban renewal and local infrastructure indicate the destination position in area life cycle. Therefore, it is not surprising that tourism destinations depending on their position in TALC have different expectations and requirements regarding tourism infrastructure. According to the life-cycle model, tourism management should be proactive, smoothing the fluctuations foreseen by the cycle and favouring a balanced relation between the costs and the benefits originated by tourism (Van der Borg, 1991).

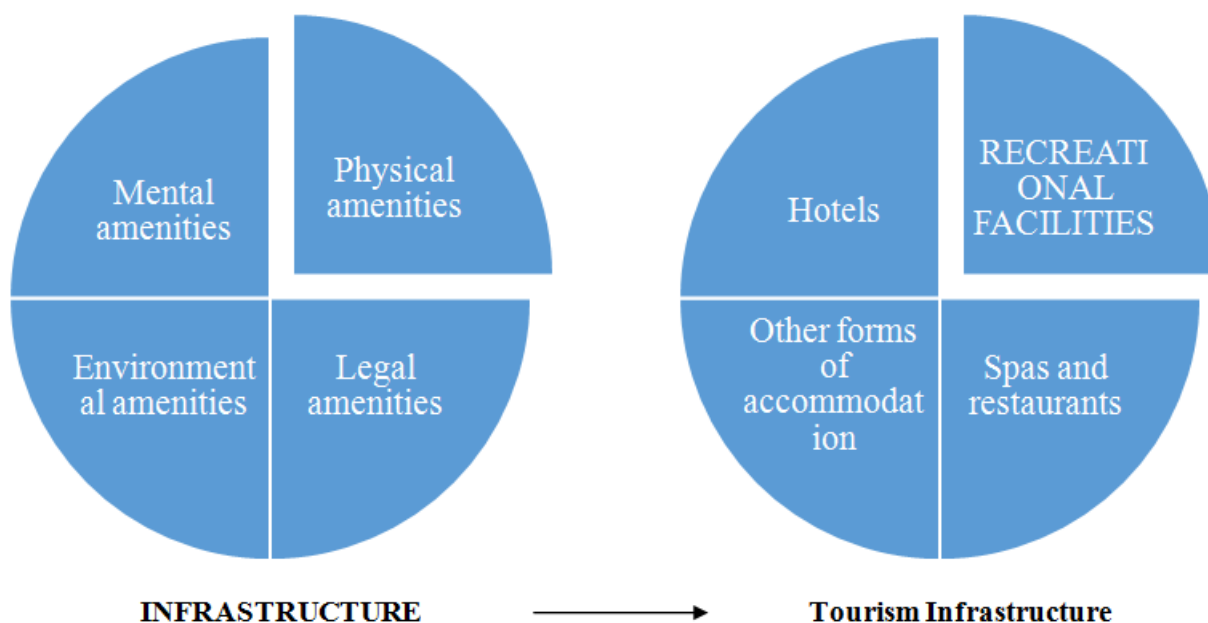


Fig. 8. Recreational facilities as a constituent of the overall infrastructure (Mandić et al., 2017)

Increasing use of ski lifts contributed to the activation of terrains with conditions for winter tourism. All this leads to the formation of a larger number of smaller ski centers, which are remarkably visited by areaal and domestic clients. For example, in the nearby area, in Kolasin, there is "Ski Center – Bjelasica" at elevation of 1.420 above sea level. The ski resort consists of: six-seater chairlifts "Vilina voda", length 1.187 meters – capacity 2800 skiers per hour; two-seater chairlifts "Cups" length 1,840 meters – capacity 1200 skiers per hour; three ski lifts length of 500 meters – capacity 500 – 600 skiers per hour; baby ski lift length of 150 m – capacity: 400 skiers per hour. The total accommodation capacity in Kolasin, are highly frequented during the winter period. During the weekend and holidays, there is evidently a great presence of skiers from Andrijevisa, Kolasin, Berane, Podgorica and the surrounding towns. All this indicates that, with adequate equipment for winter sports and the reception of tourists, Trešnjevik – L \isa and environment can count on significant tourist traffic within the winter tourist stay, taking into account the accommodation capacities "Eko katun - Štavna" (Bulatović, Rajović, 2016). The people in this area and environment have a low monthly income. Therefore, poor financial status significantly influences on lifestyles of residents. So local and indigenous games and sports can be used with minimal facilities and costs to fill their leisure time. According to the above studies and research, it can be concluded that recreation sport activities is one of healthy and vigorous tools to fill leisure time. Furthermore, they should take necessary measures to promote and publicize these precious assets through investing in local sports and games.

In the immediate vicinity of the Trešnjevik – Lisa area, on the Komovi mountain in, was held a promotional winter event at 2017.y., which showed all kinds of activities that will be able to organize the "Mojan Adventure Center", located in the village of Japan (Andrijevisa Municipality). This facility, which is still in the phase of adaptation and equipping, it is planned to be intended for tourists, as a place to stay, camping, but also to rent various equipment for adventure activities. Andrijevisa Municipality owns the center, and it is managed by the "Sudent Sport Association of Montenegro". Funds for adaptation and equipping were funded by the EU. The purpose of this event is to show the area around the Komovi Mountains, including the Trešnjevik – Lisa mountains, as an ideal place for backcountry skiing and snowshoeing. Both, snowshoes and skis, will be available for rent in the "Mojan Adventure Center". It is very important that snowshoeing and skiing are activities for which it is not necessary to have ski lifts and cable cars, and represent important forms of sports and recreational tourism. These sports are attracted by great nature lovers, who are prepared to make an effort to reach untouched areas that are particularly attractive under the thick snow cover. After all, the photos from the promotional event will be the best way to describe winter landscape Komovi Mountain and the mood prevailed among the participants of this event!



Fig. 9. Attraction – Snowshoeing at the foot of the Komovi mountain (www.pedalaj.me)

People in the area of Trešnjevik - Lisa have used snowshoes since ancient times to cross large distances covered by snow. Snowshoeing was not foreign to one of the authors of this text GR, who in his youth hiked on snowshoes across Trešnjevik and Lisa. Made in the form of a tennis racket, snowshoes did not allow the falling into deep snow, which enabled the only way of traveling through the snow-covered areas. The modernized look of snowshoes and the materials that are being made today make it possible for this form of recreation and active vocation to be accessible to everyone, without special preparation or training for their use. Snowshoes are used by getting on winter shoes, including snowboard shoes. In addition to snowshoes, snow sticks are also used.



Fig. 10. Backcountry skiing on Komovi – excitement and entertainment (www.pedalaj.me)

The most attractive summer activities in the mountain area Trešnjevik – Lisa are mountaineering and cycling. The mentioned area has a very favorable climate during the summer as in winter, which makes it unique and suitable for all types of tourism. At the end of the winter

season, when snow melts, with the first days of spring nature begins to wake up, and Trešnjevik – Lisa is getting more comfortable for a continuous stay: untouched nature, diverse tree species, mountain wellsprings, mountain trails, diverse plants species and berry fruits. If we exclude beautiful facilities built in mountain style, small mountain cottages and huts, the main reason for visiting the mentioned area in the summer period is untouched nature and clean mountain air. Besides staying in nature, mountaineering is eliminating stressful and the speed of everyday life, and instead we enjoy, have a peace and quietness in untouched nature and thus our body returns to normal functioning, improves physical condition, strengthens of our whole body and raises the resistance of the whole organism. Mountaineering includes excursions and hiking tours on accessible terrain and arranged mountain trails, where is no need for using hands or provide additional security while moving. Lisa the mountainous area has a marked hiking and walking trails, which is essential for the revitalization of the summer tourist offer. One of the two hiking trails which covering the most attractive part of the mountainous area Trešnjevik – Lisa extends from the (1573 m above sea level) towards Lumer (1867 m above sea level) to Bjelasica (2139 m a.s.l.). The access to the mountain peaks of Lisa and Lumer is possible from two directions: from the south from the mountain pass and from the north, from the Vranjak katun. Lisa and Lumer are the highest peaks of the mountain elevation which is extends south-north between Komovi and Bjelasica. The entire length of the mountainous area has a solid macadam road that passes through the foot of these peaks, so it is easy to climb on them, and the height difference between the beginning of the course and the peaks is relatively small. The road goes through high mountain passes and connects local katuns, with extraordinary views of the surrounding area. The whole terrain is very accessible and beautiful, and hiking (or riding) is a real pleasure. The second hiking trail is from the mountain pass Trešnjevik to the foot of the Komovi Mountain. Namely, the approach to Vas Vasojević is from the areaal road Podgorica - Mateševo - Andrijevića, where from the mountain pass Trešnjevik (1,573 m a.s.l.), the asphalt road is 4 km long to the "Eko katun Štavna". About 2.5 km before the katun, the macadam road is separated right, which can be reached by terrain vehicle over mountain passage Štavna to the rear huts and cottages, below Kom Vasojevički. The access road (after leaving the forest) goes to the top of the mountain pass Štavna, and the fascinating boulder of Kom Vasojević has dominated the whole area and in front of you is one of the most beautiful views of some mountain peak in Montenegro.



Fig. 11. View of Komovi from catuna Štavna – one of the most beautiful views on some of the mountain peaks in Monteneg (www.planine.net)

The optimal place for accommodation under the peaks of the Komovi mountain is "Eko katun – Štavna" which is located at an altitude of 1800 m above sea level. The settlement has 11 five-bed

accommodation facilities. The resort has a restaurant with a national cuisine, a terrace, a mini amphitheater, parking, a reception desk and accompanying facilities. Linen, dishes, shampoo, soap and towels are provided. The houses are located near the beech forest, with a beautiful view of the Komovi Mountain. In the construction of this complex was led special attention not to disturb the visual ambience of the mountain, so were mostly used rich lumber and stone. The surroundings of a tourist village are a real little botanical garden with over three hundred different plant species. There are numerous hiking and biking trails and a spacious pasture. Recreation and rest in "Eko katun – Stavna" can be found by mountain recreational, alpinists, scouts, bikers... (www.ekokatunstavna.com).



Fig. 12. "Eko katun Štavna" - shelter and rest for mountaineers, alpinists, scouts, cyclists ... (www.visokogorcicg.com) (photo by V. Vujisić)

Staying in nature in fresh air will surely attract many recreational adventurers. Biking is the perfect way of recreation and introduction with the natural beauties of the Komovi – Bjelasica area.



Fig. 13. Biking through nature – the road through Trešnjevnik (www.pedalaj.me)

Cycling tour number 1. Kolašin – Mateševo – crossroad – Andrijevica – Pešća – Lubnica – Bjelasica – Biogradsko lake – Mojkovac. Contents of the tour: Kolašin, the town at 970 m above sea level; the mountain pass of Trešnjevik (1573 m above sea level) at the foot of the Komovi mountain; Andrijevica urban settlement in the valley of Lim River; from Pešća to Mojkovac the path goes over mountain Bjelasica rich in mountain rivers, lakes, forests, pastures and catuns. Biogradsko Lake is located on the slopes of the mountain Bjelasica – the center of the national park "Biogradska Gora"; Mojkovac – a settlement mentioned in the 13th century during the reign of King Uros (Martinović, Branković).

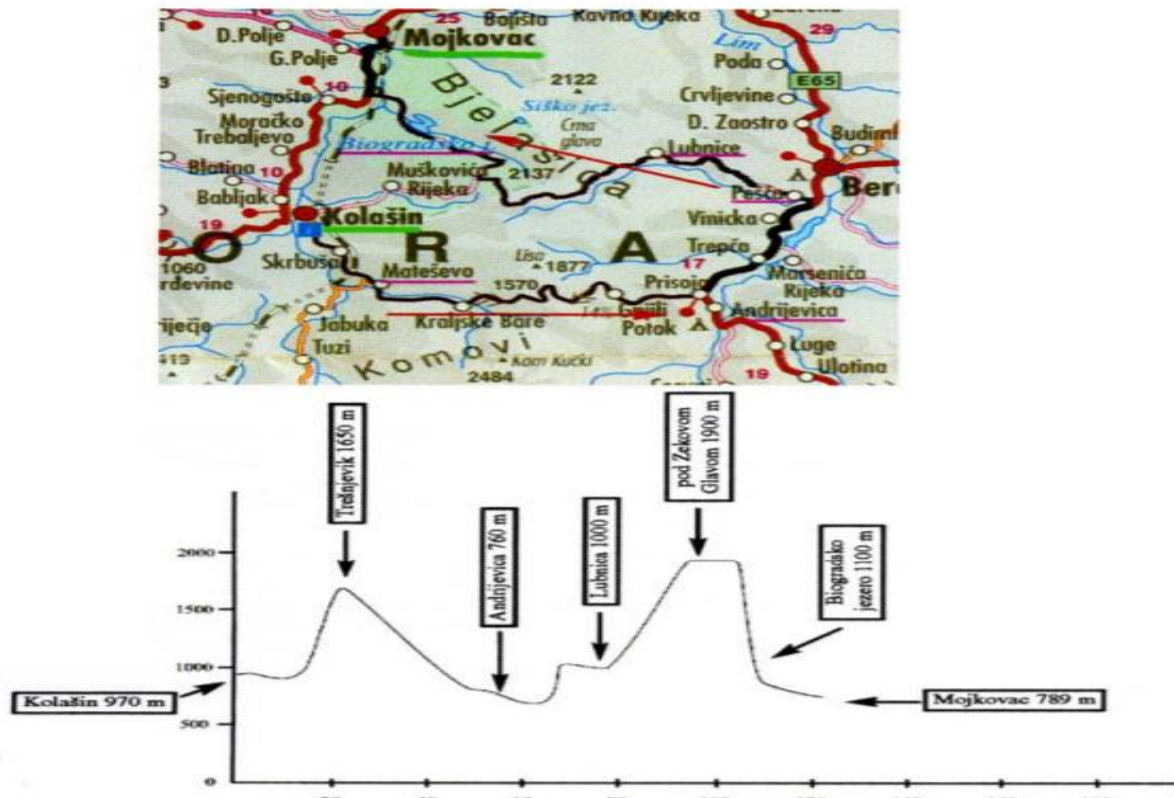


Fig. 14. Cycling tour number 1 (Martinović, Branković)

Bicycle trekking tour number 2. Kolašin – Mateševo – mountain pass Trešnjevik – Andrijevica – Murino – Plavsko Lake – Gusinje – (Grbaja and Vusanje) – Andrijevica – Berane – Bijelo Polje. Contents of the tour: a common part with tour number 1 (from Kolašin to Andrijevica). It differs in that it includes the Lim Valley, the Plavsko Lake and the most beautiful part of the imposing mountain massif of Prokletije, as well as the oriental settlement of Gusinje and two urban settlements Berane and Bijelo Polje (Martinović, Branković).

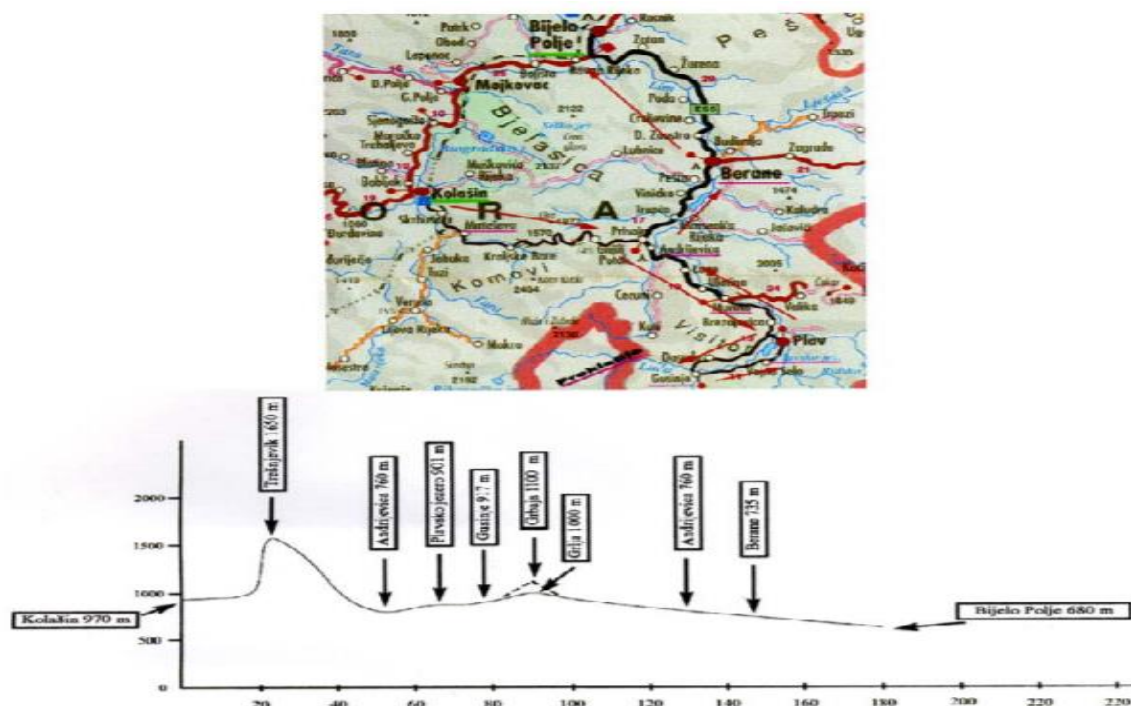


Fig. 15. Bicycle trekking tour number 2 (Martinović, Branković)

The findings from Chavez's (1996) survey of national forest managers suggested four distinct approaches for managing mountain biking within the Forest Service. These are as follows: ...direct, which includes limiting use and law enforcement; ...indirect, which includes education and information provision; ...visitor management/resource hardening, such as track maintenance; ...bridge – building, which looks at co-operation between different parties involved and volunteerism. Widmer (1997) indicated that the International in Biking Association (IMBA) promotes formal mountain bike rules, which are aimed at reducing both environmental damage and user conflict. These rules are as follows: ride on open trails only; leave no trace; control your bicycle; always yield the trail; never spook animals; and plan ahead (Mason, Leberman, 2000). The management suggestions resulting from research by Mason and Leberman (2000) included the need: ...to recognise mountain biking as a legitimate form of outdoor recreation; ...to improve signage; ...to provide more information to managers and planners on mountain biking; and ...to raise the image of mountain biking.

Climate change is one of the biggest long-term threats facing not only the tourist industry but also the planet and the impacts are beginning to be felt around the world. Potentially, climate change could lead to the loss of many destinations whose appeal depends on the natural environment (ETC, 2006). Considering climate change in the Alps due to global heating, Montenegro needs to emphasize its greatest asset to the forefront - "Wild Beauty". In the mountains of Montenegro, including the mountain area Trešnjevik – Lisa with the environment exists sufficient number of areas in which can be performed ski activities, so it is necessary: the construction of modern ski lifts on Komovi Mountain. Construction has to be directed to ecological standards. Preparation of track for running on snow and snowboard. Preparation of skating rink and walking trails on snowshoes. The summer offer requires the development of new activities, such as "Wilderness Trails", "Wild Beauty Resorts", "Mountain – biking". At the same time were crystallized three groups of mountain bikers, as follows: cyclists who drive for rest and recovery, prefer light, gravel paths. Cyclists driving for nature and sport; cyclists who drive for adventure and seek extreme conditions; Hiking and biking, as outdoor activities should be offered in combination. Both groups use the same road network (Gašović, 2017). Metsahallitus (2000) quotes nine principles which summarise the key elements of managing sustainable nature tourism in protected areas: (1) Natural values should be preserved and all activities should promote nature conservation; (2) The environment must be subjected to as little pressure as possible; (3) Local

traditions, cultures and communities must be respected; (4) Visitors should increase their understanding and appreciation of nature and cultures; (5) Improved recreational facilities must be provided for visitors. Needs of visitors considered, facilities to suit demand and conditions; visitors to enjoy peace and quiet as well as guided activities, facilities and services developed in cooperation with local businesses; (6) Visitors should be encouraged to enjoy both mental and physical recreation; (7) Local economies and employment must be promoted; (8) Publicity materials should be produced responsibly and carefully; (9) Activities must be planned and organised co-operatively.

In many European countries, great attention is paid to the development of tourism in rural areas. That is the highest achieved in France, Austria and Switzerland. The development of sports and recreational tourism is directed primarily to mountain settlements. One of the measures for improving this type of tourism is the granting of loans under favorable conditions, as well as reducing tax burdens. Tourist capacities were created by adaptation of rural houses, constructing small boarding houses or arranging rooms for rent in owner's residential facilities. Our research records based on similar research by Šećirović and Plojović (2011) indicates that in this sense it would be necessary to establish certain accommodation and other accompanying facilities whose dynamics, especially after initial investments, should be accompanied by an increase in activated tourist demand for staying in the mountainous area of Trešnjevik – Lisa and environment. This primarily refers to rural settlements gravitate directly observed area: Gnjlji Potok, Bare Kraljske, Vranještica, which have favorable conditions for the development of rural tourism. These are the benefits of relief, quantity of drinking water, clean water flows, wealth of pastures, the quality of the plot that enables a diverse flora and fauna and the production of healthy foods, in which has been maintained the traditional way of livestock farming, i.e. mostly grown cattle, sheep and goats. Tourists who prefer rural tourism are people oriented to nature and in whose vision of vacation dominates the image of a healthy life in rural settlements, related to: integration into the host family – observing animals and taking care of them; consuming local dishes and drinks – a specific system of rural traditional architecture – with adequate comfort, but without a hotel service – favorable prices (Gašović, 2017). Thus, rural settlements that gravitate to the mountainous area of Trešnjevik – Lisa, have numerous curiosity tourist elements. The traditional lifestyle in these villages has remained until today. The variety of homes, economic buildings, folk costumes, food, and speech ... give a special tourist value to the population and the possibility of developing eco-tourism. Old types of houses are represented by a typical folklore architecture dominated by chalets (Bulatović, Rajović, 2018; Bulatović, Rajović, 2018).

Camping in the wild as a kind of vacation offers a complete, immediate experience of nature. It does not require large investments and can be developed relatively quickly. However, accelerated development should not, in any way, hinder the quality of services for tourists. Campsites in the wild should be subject to strict rules and criteria such as: car availability; construction must be in accordance with quality rules; the use of renewable energy sources, the ecological elimination of solid waste and wastewater; nature experience programs, free activities in nature ... Demand for wild camping is constantly growing (Gašović, 2017). The mountainous area Trešnjevik – Lisa abounds with extraordinary camping terrain. Thereby, for tourists - camper renters should be able to rent huts, or cottages on Trešnjevik and Lisi, which should be easily equipped (Rajović, Bulatović, 2015).

Our research evidence based on similar research Stankova (2014) indicates that in that connection, as successful management on mountainous area of Tresnjevnik – Lisa and enviroment approaches could be applied as follows: Improvement of staff qualification in existing tourist facilities; Encouragement for local initiative and entrepreneurship on mountainous area of Tresnjevnik – Lisa and enviroment; Development of common infrastructure; Development of specialized tourist infrastructure; Establishment of public-private partnerships for the development of sports infrastructure; Advertisement of the rural vilage which gravitate to the mountainous area as an attractive place for tourism, recreation and sport (Gnjili Potok, Bare Kraljske, Vranještica); Improvement of management and exchange of tourist information through the network of Tourist Information Centers Municipality Andrijevisa and Kolašin; Promotion of the typical customs and traditions as a factor, increasing the attractiveness of tourism destination and ensuring continuity between generations; Promotion of objects and places of cultural, historical and architectural heritage and adapting to the needs of the tourist demand; Establishment and development of specialized tourism products based on specific only for the

mountainous area local resources; Conservation and efficient use of water resources on mountainous area of Trešnjevik – Lisa and environment; Sustainable forest management and conservation of biodiversity; Increase control and monitoring in protected areas around the destination; Establishment of effective arrangements for waste management: waste collection, transportation, recycling and disposal; Public campaign to change attitudes among local residents regarding the protection of the environment.

For further development of sport recreational tourism in the territory of mountain area Trešnjevik – Lisa and environment a data presentation of the strengths, weaknesses, chances and threats (SWOT Analysis). The principle of action as well as code Marijanović (2011) should be based on strengthening the benefits and utilizing the opportunities that exist, as well as on eliminating weaknesses and preventive action on identifying risks.

Table 3. SWOT Analysis

Strength	Weaknesses
Untouched nature, an ecologically clean area Natural resources: sources, river direct mountain surroundings, unity of landscapes Wealth of flora and fauna hospitality towards guests	Undeveloped basic infrastructure Insufficient care for the protection of the nature of all individuals involved in tourism Lack of a long-term tourism development plan The lack of cooperation and the creation of partnerships with neighboring municipalities at the regional level
Opportunities	Threats
The trend of complementary development of coastal and mountain tourism in Montenegro and the world Increasing demand for areas with preserved natural resources Increasing awareness of the importance of sport recreation tourism in preserving the overall health of people Creation of tourist clusters with the aim of achieving better recognition of the tourist product Exchange of experiences with already affirmed European and world tourism centers More and more popular use of electronic media as a cheap way of promotion	Existence of other mountain area with a developed tradition of sport recreational tourism in Montenegro and the environment Economic recession and poor purchasing power of the domestic market Poor investment climate and long depreciation periods are limiting factors for investors Unstable political situation in the world and the region

Natural resources, and especially source and rivers as can be used as the main strength, which will be improved by adequate use and modernized by the tourist offer of mountain area Trešnjevik – Lisa and environment. The main weakness well as code Marijanović (2011) is the lack of basic infrastructure, as well as the lack of a long-term development plan. Complementary development of coastal on the Montenegrin coast and mountain tourism, as well as cooperation with other economic entities in the surrounding area are the main chances for further development. Given that the funds allocated for the promotion of tourist destinations in North Montenegro are very limited, the popularity, the wide spatial coverage and the low price of advertising through the electronic media should be used. The economic recession and the lack of domestic and foreign investors, in the region are the main threats to tourism in north Montenegro (Bulatovic, Rajovic, 2018).

Table 4. An exploration of possible ‘products’ of visitor management

Visitor management Products/ services	Tourism Destination Benefits/ Community Benefits
Information Education Interpretation	Linking protected area to region Development of concepts, storylines, themes, trails, routes, information systems, signposting, providing information about local communities, their culture and tourism supply Environmental education and training for community, schools... Conservation of local culture (story lines, myths)
Marketing Promotion	Linking protected area to region Development of concepts, storylines, themes, trails, routes, information systems, signposting, providing information about local communities, their culture and tourism supply Environmental education and training for community, schools... Conservation of local culture (story lines, myths)
Merchandising Food and Beverage	Outlet for regional produce Conservation of traditional handicrafts Promotion of organic agriculture Local enterprises for catering
Surveillance Safety	Create activities/experiences with local providers/community Local people work as guides, cultural brokers, animators Events based on local culture
Surveillance Safety	Local employment Increase overall level of safety and medical care Reduce illegal activities x Co-operation with local police Inform tourists about hazard/health risks
Infrastructure, Accommodation + Facilities	Improvement & maintenance of roads, trails PA facilities as local facilities (education, community centers, accommodation for school camps...) Hire local enterprises for construction, maintenance
Intact landscapes	Contribution to tourism potential of area Contribution to conservation natural heritage of communities Conservation of traditional land use

Transportation	Improvement of local public transport Sustainable transportation policy
Etc	

Source: [Beunders, 2006](#)

These 'products' have to be integrated in a systematic way in the tourism products that the destination offers. Synergy with other suppliers and with the destination as a whole should be assessed. This leads to efficiency, cost reduction and a higher quality of products and services. Websites of protected areas have been increasingly used as a promotion and distribution channel for local tourism products and services. Maybe the most significant contribution of the PA to regional development is the development of new concepts, products and services. The PA has in the eye of the potential visitor and consumer a high brand value that represents intact nature, exciting nature based experiences, quality, reliability and safety. Some protected areas have turned their logo into a quality brand for local (tourism) products and services. The PAN Mountain area logo is being awarded to local businesses that have a partnership with the PA. In order to maximize the benefits for the local economy, VM should make use of the concept of Local Supply Chains. A Supply Chain comprises the suppliers of all the goods and services that go into the delivery of tourism products to consumers. A Local Supply Chain focuses on local suppliers. A methodology similar to quality certification systems could analyze the steps of the production process of all products to see if optimal use is made of local resources. Simultaneously other sustainability and quality criteria can be applied to make sure that production processes meet high standards. If the use of local resources is limited, an analysis should be made of the local potential. Training programs, business support and (micro) credits can help to increase local involvement ([Beunders, 2006](#)).

Suggestions and solutions the like as well as Olad et al (2013): Development of policies and plans and required coordination to develop public and recreational sports in area; Establishment of Public Sport Council and required coordination to establish corresponding urban and rural councils; Research to identify barriers to the development of public and recreational sports and solutions to overcome them; Providing necessary facilities to support and development of public and recreational sports; Coordination and cooperation with relevant executive agencies and institutions including municipalities to participate and provide arrangements for development of public and recreational sports and monitor their performance; Continuous study and research to strengthen the scientific and managerial basis of public and recreational sports in other countries and using their successful experiences in formulation of developmental plans; Establishing and developing relationships with regional and international institutions of public and recreational sports; Internalizing and development of the culture of public and recreational sport; Deployment or dispatch of outstanding coaches to train rural youth; Encouraging rural youth to exercise (with no cost for basic sports)

It can be concluded that given the anticipated constant increase of interest in staying in mountainous areas, in considering comparative advantages of Trešnjevik - Lisa and the environment (in terms of, above all, quality of air, water), preventive - health care has the conditions to take a significant place in the total tourist traffic in the municipalities of Andrijevica and Kolašin, and thus speed up the overall tourist promotion of this mountainous area. Rural tourism resulted from the need to enable the inhabitants of larger urban areas to stay in the natural environment of the mountainous area of Trešnjevik - Lisa and environment area and the life and housing conditions are completely different from their everyday life in urbanism settlements, while in more developed countries have a long term the significant part of the tourist offer ([Šećirović, Plojović, 2011](#)).

4. Conclusion

The economic impact of visitors Kassaye (2019) according to (Saayman, Saayman, 2006; Frechtling, 2006; Kastenholz, 2005; Gokovali et al., 2007), at a destination is influenced by the magnitude of visitor spending, the number of visitors travelling to the destination, the type of destination and the activities offered, the number of days spent in the area and the circulation (multiplier) of visitor spending through the economy of the area. Tourist spending is one of the most critical variables in analyzing tourist destinations, since it directly determines the tourism sector's profitability. It is important to identify which visitors spend most at a destination and which variables are most influential in determining their expenditure levels. Once the factors that affect visitor expenditure have been determined, policies can be developed to strengthen the spending and maximize the economic benefits. Many mountain communities are looking for opportunities to develop their tourism industry and, given global trends in sport tourism and recreation, it will not be surprising if new mountain destinations are explored and developed.

People are continually searching for new forms of sport recreation and settings for it, and mountains have often provided the 'pleasure grounds'. Mountain destinations have commonly evolved as local sport recreation grounds and have become a magnet for all types of tourist (Nepal, Chipeniuk, 2005). Sports and recreational activities and the quest for adventure represented a significant motive for traveling in the past, but nowadays tourism based on these motives is one of the most popular forms of movement (Vujić). With the existing resources of Komovi Mountain and potential opportunities, the mountainous area of Trešnjevik - Lisa has realistic preconditions for the development of sports and recreational tourism. Our research records based on similar research Vujić, indicates that it is essential that all stakeholders of the tourism policy in time perceive the importance of providing this type of tourism, in terms of economic effects, urban regeneration, raising the level of people's awareness, improving and building infrastructure (considering the presence of only two tourist objects), enriching the tourist offer and strengthening the image of the destination. The first task is to create a tourist product based on research of the needs of modern tourist demands, which will be accompanied by the construction of tourist infrastructure, enriched with new contents. In addition, the introduction of new content, the promotion of tourism potentials based on a modern marketing approach, engagement of professional staff in the field of tourism, sport and physical culture, are the basic prerequisites for the development and affirmation of sports and recreational tourism in this area.

There is no universally applicable unique model for the development of sports and recreational tourism because they depend primarily on natural - geographic characteristics of a certain area. The inclusion of sports and recreation in tourism creates an additional market for sports products and equipment, develops the trade of sports products, and also developing the industry and construction of sports facilities. However, the development of sports and recreational tourism, as also any other specific form of tourism, is necessary to align with the overall development plans of tourism in a particular area in order with comparative advantages of an area and assessing the development economic value (Petrović et al., 2017).

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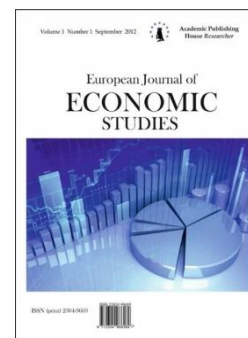
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Impact of Blockchain Technology on the Payment Management Systems – What Future Holds?

Sanel Halilbegovic ^{a,*}, Zerina Kadic ^a, Nedim Celebic ^a, Adisa Arapovic ^a, Dzenan Kulovic ^b

^a International Burch University, Sarajevo, Bosnia and Herzegovina

^b University of Zenica, Bosnia and Herzegovina

Abstract

Due to its possibly disruptive effect on business model (BMs), blockchain innovation has started an lively discussion among researchers.

Delphi study sets out to explore the impact of blockchain in payments, which represents a major cornerstone of banking and the cradle of this technology. The outcomes, grouped around four areas thoughts, demonstrate that blockchain allows the offering of new services and renders some of the current ones obsolete. This consequently impacts the financial structure of firms in the payments industry and further generates great potential for new BMs while making some existing ones obsolete. Eventually, new players, which are better ready to use the potential of blockchain, will give a strong motivation to this improvement. This discoveries contribute to the literature by giving new bits of knowledge about the effect of innovative advances on BMs and have further practical implications by presenting a better understanding of future BMs in payments.

Keywords: blockchain innovation, financial structure, payments industry, Delphi study, credit card transactions, bitcoin exchange

1. Introduction

This research investigates the feasibility, challenges, benefits and risks of blockchain technology in the payments, which are based on the application of the blockchain to formal and non-formal credentials.

Technological changes represent new challenges and generate further opportunities for companys. In particular, innovative technologies have the potential to modify the equilibrium among the companys in an industry. Leading companys consistently fail to stay at the top of their industry when the technological discontinuities occur. The effects of technological changw on the global economic structure are creating large transformations in the way companies and nations organize production, trade goods, invest capital, and develop new products and processes.

Today, firms depend on virtualizing their business by enhancing some new technology or platforms. Virtualization technology is potentially the absolute most importantl issue in IT and has started a top to bottom overhaul of the computing industry.

Virtualization can simplify IT tasks and enable IT associations to react quicker to changing business demands.

* Corresponding author

E-mail addresses: sanel.halilbegovic@ibu.edu.ba (S. Halilbegovic), zzerina.kadic@gmail.com (Z. Kadic), nedim.celebic@ibu.edu.ba (N. Celebic), adisa.arapovic@ibu.edu.ba (A. Arapovic), dzenan.kulovic@ef.unze.ba (D. Kulovic)

With regards to business achievement, many companies are resolute that the way they used the internet played a crucial part in that achievement. At the point when the internet is used effectively as a business asset, it can make easier your organization's daily tasks. It can also help to make customer communication easier, as well as being a fantastic resource for increasing your client base. Social media makes marketing and networking simple.

The approach of computers and mobiles have changed the way in which we work, as well as how we deal with our financial aspects and payments. The ever changing and evolving technologies have also led to the introduction of newer services, such as e-commerce that has led to the demand for quicker payment systems.

Given the pace of progress – and clients' expanding appetites for expanded speed and convenience, digital payments will realize a radical change in the payments sector. In any case, despite increased adoption of digital payments, cash would still remain as a primary form of payment for many, especially for low-value exchanges and certain demographic groups.

Blockchain has been initially launched as a way to the payment exchanges dependent on cryptography to give an alternative mechanism to the trust between two executing parties. Blockchain is an innovation to make and maintain a cryptographically secure, shared, and distributed ledger (a database) for transactions. Blockchain brings trust, responsibility, and transparency to digital transactions.

2. Literature review

Mike Faden states that though few blockchain-based payment services are yet available, expected to change in 2017 as the investment that has poured into exploration of blockchain's potential by banks, financial-technology startups and other companies yields fruit. According to a survey of 200 global banks published by the IBM Institute for Business Value and The Economist Intelligence Unit, 15 percent of banks expect to introduce full-scale commercial blockchain solutions in 2017, with "mass adopters" rapidly following suit – bringing the total to 65 percent of banks by 2020 (just three years). This post offers a roundup of many live and near-live blockchain payment processing solutions and trade finance deployments. He also states that „live“ blockchain deployments promise to accelerate payment processing and trade finance (Faden, 2016).

Blockchain innovation guarantees to ensure quick, secure, low-cost international payment processing services (and other exchanges) using encrypted distributed that give trusted real-time verification of transactions without the need for intermediaries, for example, reporter banks and clearing houses. Blockchain technology was at first used to help the digital currency Bitcoin, but is presently being investigated for a wide assortment of uses that don't include bitcoin (Faden, 2016).

Satoshi Nakamoto, the inventor of bitcoin, titled his original white paper on the subject "A Peer-to-Peer Electronic Cash System." This description touches on the core differences between bitcoin and credit card transactions. Blystone Dan said that he helped understand bitcoin better and his research talks about bitcoin transactions regarding and their difference from credit card transactions (Blystone, 2018).

Bitcoin payments are comparable to wire transfers or cash transactions, where payment is "pushed" directly starting with one party to next, without through influencing financial organization. Payment processing is executed through a private system of PCs, and every exchange is recorded in a blockchain, which is public. Bitcoin is based on shared innovation and depends on the blockchain and the cryptography securing it, with no outsider oversight.

Dan Blystone also discusses about credit card transactions entail the buyer effectively authorizing the seller to "pull" a payment from their account, passing through several financial intermediaries in the process. For example, a typical Visa transaction involves four parties: the merchant, the acquirer (the financial institution that enables payments to the merchant), the issuer (the card holder's bank), and the individual cardholder (Blystone, 2018).

When making a bitcoin exchange, it isn't so important to give individual identification information, such as, your name and address. Bitcoin transactions are made utilizing an anonymous alphanumeric location that changes with every transaction and a private key. Payments can likewise be made on cell phones by using quick reaction (QR) codes.

While credit cards are stored physically in a wallet, bitcoin transactions are sent to and from electronic wallets, which can be stored on your computer, smartphone, or in the cloud.

Bitcoin exchanges are irreversible and can be discounted by the receiving party – a key distinction from credit card transactions that can be canceled. This implies there are no charge-backs for vendors when taking payment via bitcoin. A charge-back is the demand by a credit-card provider for a retailer to cover the loss on a fraudulent or disputed transaction (Blystone, 2018).

Moghe Sarthak explains how blockchain can disrupt the card payments industry, and why it hasn't already.

Blockchain is a buzzword that is beginning to lose its buzz. The word is thrown around continually, and often individuals have little idea what it implies. But the technology does have value, and it doesn't just have to be an esoteric term. Instead, the blockchain has the capability to disrupt and change a number of industries (Moghe, 2018).

The card payments industry is one of them. While the card payments may be suitable for customers, the merchants have been the basis of the bill for this suitability, with the high processing fees charged by the card processing intermediaries. Since blockchain innovation depends on the core principle of "decentralization," it gives a chance to achieve the various "middlemen fees" with an alternative low-fee digital payments network. And, besides convenience, merchants can share these savings in processing fees with their shoppers to elevate their experience to a whole new level. Let's look at how blockchain can help improve the card payments industry, and, if it's so great, why it hasn't already (Moghe, 2018).

Samantha Radocchia explains why it will be so important going forward with blockchain payment process:

A crypto payment system introduces greater liquidity into markets.

Connecting a supply chain or retail platform to a payment processor gives a different means of transacting and making payments—opening up a new source of liquidity for the businesses involved.

Streamlined payment improves efficiency and automation.

The cryptographic seals we use look fairly simple, but they require a number of different parts. One company creates the antenna, and another builds the chip that turns it into the NFC inlay. A third vendor places all of it in a tamper-proof sticker. Now, our team isn't ordering vast quantities, and none of these vendors are located exceptionally far from each other. But the task of filling out orders and completing them is incredibly time-consuming.

Procedures like this can take months relying upon what kind of item the organization is dealing with. While a large number of these frameworks could turn out to be increasingly productive by digitizing and robotizing the stream of information and data, it's insufficient. Digital documents aren't significant in the event that they're being sent to someone with a blockchain-based payment processor.

And as more companies adopt crypto and blockchain technology, exchanging that value is going to become much more important (Radocchia, 2018).

A point-to-point transaction can reduce costs for companies

A blockchain payment processor takes the cargo off individual firms by offering a single solution for everyone in a supply chain or industry. Allowing companies to process transactions automatically and avoid or significantly lower transfer fees is a huge leap forward in efficiency and cost savings (Radocchia, 2018).

3. Research method

I have relied on this topic so this work will help someone who will in the future also rely on the same and who will interest blockchain technology and its benefits and application.

I decided to dedicate myself to this topic because it may not yet be so widespread and but it is important in the business world. I was based on certain relevant seminar papers, and on some articles where a group of researchers and authors discuss the benefits of blockchain technology and its use.

Research is motivated by the debate on the influence of blockchain technology and the growing body of literature on cryptocurrencies, combined with the necessity to assess how this would impact BMs in the payments industry

Research gives a high-level technical overview of blockchain innovation. It looks at different classes of implementation approaches. It examines the components of blockchain technology.

Experts (D. Yada, P. Mell, R. Nik. and K. Scarfone) give details on how blockchain innovation was extended out past attestable exchanges to include attestable application forms known as smart contracts. It also touches on some of the limitations and misconceptions surrounding the innovation. Also researches (Grech, Camilleri, 2017) presents several areas that organizations should consider when investigating blockchain technology. It is intended to help readers to understand the impact of blockchain technology on business models in the payments system. In Bitcoin, and comparable systems, the exchange of digital information that represents electronic cash happens in a distributed system. Bitcoin clients can digitally sign and transfer their rights to that data to another user and the Bitcoin blockchain records this transfer publicly, allowing all participants of the network to independently verify the validity of the transactions.

The analysis is based on a Delphi study conducted among experts (F. Holotiuk, F. Pisani., J. Moormna) from the payments industry knowledgeable of the blockchain technology. Given the lack of existing research and the exploratory nature of its study, open qualitative interviews would have been an option. However, the industry still shows a high degree of uncertainty on the study's topic. Furthermore, based on its industry insight, specific expertise could clearly be located. This advised a multi-stage study in a more formalized and group-oriented approach. Therefore, the Delphi approach was the method of choice. The Delphi method was developed in the 1950s and has become a common tool for measuring and aiding forecasting and decision-making. It is especially appropriate for exploratory theory building on interdisciplinary issues, which often involves new or future trends. Hence, the method is highly recognized in research concerning technology forecasting and has been used extensively in IS research to identify and rank key issues for management action.

The Delphi technique takes into consideration the dialog of a perplexing issue through an organized correspondence process. Dakey and Helmer characterize Delphi as a technique that endeavors to get the most solid accord of a gathering of mysterious specialists. Four particular attributes are introduced by von der Gracht: anonymity, iteration, controlled feedback, and statistical group response.

As for research point and as proposed by Murry and Hammons that picked a 3-round technique. In such manner, we pursue Fan and Cheng, who recommend three adjusts as being adequate to achieve accord and borne as a top priority time limitations which may impact the strategy. Cycle one (R1) planned to infer specialists' experiences and feelings. In cycle two (R2) specialists assessed the consequences of R1. Cycle three (R3) requested that specialists reexamine the outcomes in light of the gathering input.

Experts (F. Holotiuk, F. Pisan, J. Moormann) inform us that new service blockchain technology is going to allow the link between contracts and transactions. Blockchain technology is powering our future.

In 2008, the blockchain thought was combined with a few different technologies and computing ideas to make modern cryptocurrencies: electronic cash ensured through cryptographic systems instead of a central repository or authority. This technology became widely known in 2009 with the launch of the Bitcoin network, the first of many modern cryptocurrencies.

Identifying the Panel of Experts

The most critical model while choosing specialists is the individual ability on the issue under investigation. As needs be, chose qualified specialists relying upon their work involvement in installments as well as blockchain innovation, their expert position, and the job and foundation of the organization they work with. A key prerequisite for specialists to be chosen is an intensive understanding of blockchain innovation to evaluate its suggestions on installments. Also, a profound comprehension of installments was expected to evaluate industry-explicit ramifications for BMs. For the identification and validation of experts, used web search, talks with practitioners, and databases of professional networks. Hence, the Delphi panel was composed to be a representative mix of experts and included 45 panelists: 16 (35 %) from consulting, 11 (24 %) from fintechs, 6 (13 %) from banks, 4 (9 %) from academia, 3 (7) from public institutions, 3 (7 %) from payment service providers, and 2 (4 %) technology providers.

4. Analysis

Because of the iterative and multi-organize nature of Delphi examines, information gathering and butt-centric ysis are introduced together. In R1, conveyed 45 messages to the specialists where

they freely give thoughts, contemplations, and assessments on the improvement of blockchain innovation. As per Linstone and Turoff, structured R1 with an open-end organize, recommending beginning stages around BMs. This was done to elicit individual perspectives, judgments, and opinions from each panelist. In order to develop a general framework in the direction of this research question, the starting points were created by the researchers as suggested by Schmidt. Hence, to stimulate answers in R1, broad questions were provided where panelist could deliver their input (Holotiuk et al., 2017).

Received a 38 reactions. For less demanding perusing and examination the reactions were collected in one archive bringing about 20,000 expressions of subjective information. So as to distil the most pertinent articulations, the info was coded by three free scientists with a mediator planning the coding exercises. First, the researchers went through all answers and developed their own code list. Second, the moderator guided the discussion among the researchers to generate one code list which reflected all relevant input. Finally, the researchers translated all codes into better readable and easily understandable statements. As an example, the code “new business models” was translated to “With the blockchain technology new business models in payments will develop”.

In R1, an initial set of 45 statements was produced describing the implications of blockchain technology in payments. Examined and talked about those explanations which are important for BM inquire about in connection to blockchain innovation. The scientists distinguished 17 out of the 45 proclamations as being applicable to the targets of this examination. The statement selection was based on the following criteria: threats and opportunities for existing BMs, need for revising current BMs, implications for designing new BMs, and new service offerings in the industry with substantial potential for new BMs (Holotiuk et al., 2017).

For the consequent assessment of the announcements in R2 and R3, needed to consider that the master board comprises of professionals with restricted time just as relatively low efficient comprehension. Hence, to better facilitate the evaluation, the statements were presented through the use of an online tool (Qualtrics) with a strong focus on intuitive readability. In R2, exclusively considered the 38 panelists who completed R1. These experts were presented with the statements generated in R1 and asked to provide an evaluation of each statement on a six-point Likert scale ranging from “Strongly agree” to “Strongly disagree”. Six were picked to support clear choices toward assentation or difference and yet to offer enough operation tions for a separated assessment. Toward the finish of R2, the assessment of every announcement was gotten from 36 out of the 38 specialists. [Holotiuk.F, Pisani.F,Moormann.J 2017]

This gathering of 36 specialists was additionally considered in R3, where the indistinguishable articulations from R2 were displayed to the specialists, alongside the gathering's reactions from R2 joined with every specialist's own assessment. Exclusively graphical portrayals of the assessments were appeared. This methodology surpasses the standard Delphi strategy, yet guarantees the right elucidation. At last, specialists were approached to give their individual assessments in light of the gathering assessments in R2. Altogether, 34 reactions were gathered from R3 (Table 1).

Table 1. Response rates within the Delphi panel

<i>Round 1</i>		<i>Round 2</i>		<i>Round 3</i>	
Sent out	Complete responses	Sent out	Complete responses	Sent out	Complete responses
45	38 (84.4%)	38	36 (94.7%)	36	34 (94.4%)

After finishing R3 checked group stability. Across all statements, the average for agreement was 87 % and only 13 % for disagreement. Also compared two statistical measures, variance and variation, of R2 and R3 to determine if consensus was achieved. The average variance was reduced from 1.23 in R2 to 0.96 in R3. Furthermore, the average variation decreased from 47 % in R2 to 43 % in R3. Finally, selected those statements of the initial 17 with the highest consensus values. (Holotiuk et al., 2017).

5. Results

The ten articulations are the aftereffect of the Delphi technique and best condense the implications of blockchain innovation on BMs in the installments business dependent on the master board. Figure 1 illustrates how the ten statements are synthesized into four areas of thoughts: Blockchain-enabled services as a first cluster indicate how new services around peer-to-peer (P2P) and direct transactions, cross-border and cross-currency transactions, as well as the connection between contracts and transactions are being introduced. At the same time some existing services are rendered obsolete. This adjustment in administrations causes an adjustment in the money related structure of firms in the installments business. As a result, there is an incredible potential for new BMs in the market while some current ones wind up out of date. A strong impulse to new BMs is given by new players like fintechs, which are better able to leverage the potential of blockchain technology. Details on the opinions of the panelists are provided in the following (Holotiuk et al., 2017).

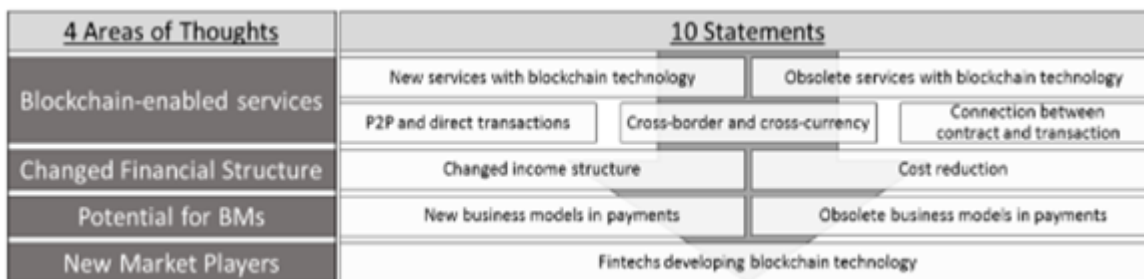


Fig. 1. Implications of Blockchain technology for BMs in the payments industry

There are a strong consensus around the impact on payment services due to the introduction of blockchain, and we argue that there are direct implications at the BM level as the design of BMs involves the definition of services a firm delivers. From one viewpoint, specialists stretch that the advancement of blockchain innovation enables new administration contributions to be conveyed to the market. In more detail, specialists mention three administration regions, which assume a noteworthy job in the further advancement. These ser-indecencies are molding the advancement of BMs and are heralds of the change to come in installments: Blockchain innovation is relied upon to make coordinate exchanges possible with no outsider going about as "trust specialist". Hence, "transaction can be executed peer-to-peer" directly between two contractual parties (peers). P2P transactions can occur between identified parties such as firms or customers; but also between uni-identified parties like machines (cars etc.) or even unbanked customers (F. Holotiuk, F. Pisani, J. Moormann, 2017).

Blockchain innovation will make these installments "quicker and less expensive", for example quicker by giving a strong, regular framework crosswise over outskirts for exchanges, and less expensive by expelling costly middle people, in this way defeating to-day's "absence of trust". On the off chance that blockchain innovation permits simple universal exchanges dependent on advanced monetary standards, money trade will dissolve as an administration and evacuate expensive cash trade workplaces. Moreover, because of the comprehensive idea of the technology, worldwide and permissionless availability, current high charges for settlements by outsiders will blur and dissolve the particular BMs as people can partake directly in settlements abroad. These upgrades will be the absolute "greatest effects" of blockchain innovation. A completely new service blockchain technology will allow is the connection between contracts and transactions. Hence, the technology can be used to keep records of "contracts of purchase and passing of property" in addition to the actual transaction. Thereby, contracts of purchase can be directly linked to payment transactions, which is referred to as smart contracts. As a result, blockchain technology can be used as a "proof of ownership" as well as a proof of payment. The development of smart contracts will allow the "automated execution of transactions". Hence, smart contracts prove to be a critical cornerstone in the current advancements around the internet of things. Finally, the connection between contracts and transactions allows 'programmable' money flows and automation of transactions, which leads to decentralized autonomous organizations, where

business rules are coded in the organization and executed automatically under certain conditions (Holotiuk et al., 2017).

Expanding on the blockchain-empowered administrations and the changed monetary structure, solid impacts on BMs are perceptible and assume a noteworthy job while examining blockchain innovation. In any case, the recognition is twofold edged. From one perspective, we see a solid accord that new BMs as to installments will develop. For instance, specialists stretch the significance of information by fundamental "information investigation and further information related administrations". This is as per the pattern in our exploration, that installments related BMs will possibly endure if new administrations are included like "installments expanding ser- indecencies and items" and hence BMs are improved. Just the formation of "significant worth included administration", supplementing current BMs, will enable monetary organizations to keep their client base stable. For example, panelists point out that future BMs will no longer build on account service fees but "hosting and data security fees" and will be able to "monetize interfaces", not just services.

Finally, the described changes and implications give rise to new market players. As new players, and particularly fintechs, enter the market, new BMs are expected. Following the panelists, fintechs will play an important role in the context of blockchain technology application in payments. Panelists see fintechs as an "enabler for market infrastructure" and as "specialized providers from outside with a catalytic role" (Holotiuk.F, Pisani.F, Moormann.J 2017).

Discoveries demonstrate that changes because of the presentation of blockchain are reflected in new administrations just as new income structures and in the long run new BMs (Holotiuk et al., 2017).

6. Conclusion

Blockchain is another innovation with possibly problematic power, which yields impacts for various enterprises. First applications came up in the money related administrations area with bitcoins, which puts the installment business at the focal point of developments around blockchain innovation. It is the first of its sort to assemble a high number of specialists and gain a superior comprehension of the suggestions on BMs in the installments business. In there try to outlines the changes due to blockchain technology, which are clustered in four areas of thoughts. First, new services are introduced, which foster P2P transactions, cross-border and cross-currency transactions, as well as the connection between contracts and transactions and, therefore, make current services obsolete. As a result, the monetary structures of existing BM will change. Third, these progressions will be reflected in the advancement of new BMs, making some current BMs outdated. Finally, these progressions make a potential for fintechs to enter the market by utilizing blockchain innovation. Abridged, explore gives bits of knowledge into how changes in installments, due to blockchain innovation, advance and in what headings organizations need to think to update their BMs. Research contributes to BM literature by analyzing the impact of new technologies. Furthermore, the findings yield new research avenues, which are promising to further explore the topic of blockchain. At last, the platitude "one mystery to keeping up a prosperous business is perceiving when it needs a major change" could demonstrate right by and by with BMs in installments (Holotiuk et al., 2017).

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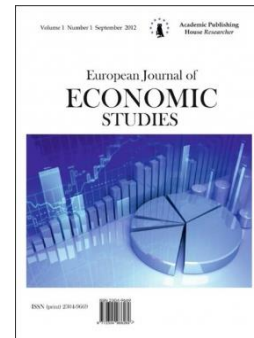
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High Stock Trading Volumes before Holidays and Post-Holiday Price Drifts: Psychological Insights

Andrey Kudryavtsev ^{a, *}^a The Max Stern Yezreel Valley Academic College, Emek Yezreel, Israel

Abstract

Present study concentrates on the holiday effect on stock returns following high-volume trading days. Based on the Mood Maintenance Hypothesis and on the literature documenting lower stock trading activity before holidays, I suggest that if important company-specific news arrive immediately before a public holiday, then investors striving to maintain their positive pre-holiday mood, may be less willing to make influential trading decisions, and therefore, may react relatively more weakly to the news, which creates an underreaction and may result in subsequent price drifts. Analyzing a large sample of high-volume days and defining the latter according to two alternative proxies, I find that pre-holiday high-volume days accompanied by both positive and negative stock returns are followed by significant price drifts on the next two (post-holiday) trading days and over five- and twenty-day intervals following the initial high-volume day, the magnitude of the drifts increasing over longer time windows. On the other hand, "regular" high-volume trading days are followed by either non-significant or marginally significant price reversals. The effect is more pronounced for small and more volatile stocks and remains robust after accounting for additional company- (size, CAPM beta, historical volatility) and event-specific (stock's return on the event day) factors. It is also robust to different methods of adjusting returns and to different sample filtering criteria.

Keywords: behavioral finance, high trading volumes, holiday effect, mood maintenance hypothesis, stock price drifts, underreaction.

1. Introduction

The modern world becomes more and more information-based and information-driven. Information affects all spheres of human activity, and provides considerable advantages to people and organizations that possess it.

The role of information in financial markets is crucial. Stock market investors put a lot of effort trying to absorb any relevant item of information and to correctly incorporate it in the respective stocks' prices. In many cases, different investors possess different amounts of information and even interpret the same information differently. This kind of disagreement leads to different subjective valuations of the same stocks and gives rise to stock trading activity, continuously affecting stock trading volumes.

A vast strand of literature concentrates exactly on this point. Previous studies demonstrate that trading volume may result from some form of heterogeneity among investors, including differences in information (e.g., [Varian, 1989](#); [Holthausen, Verrecchia, 1990](#); [Kim, Verrecchia,](#)

* Corresponding author

E-mail addresses: andreyk@yvc.ac.il. (A. Kudryavtsev)

1991, 1994, 1997; Barron et al., 2005); differences in risk preferences (e.g., Beaver, 1968; Verrecchia, 1981); and differences in interpretation of company-specific news (e.g., Harris, Raviv, 1993; Kandel, Pearson, 1995; Bamber et al., 1997, 1999; Garfinkel, Sokobin, 2006; Hong, Stein, 2007; Bamber et al., 2011). Some of these studies (e.g., Verrecchia, 1981; Holthausen and Verrecchia, 1990; Kim and Verrecchia, 1994, 1997; Barron et al., 2005) also argue that to the extent that the increase in abnormal trading volumes around company-specific events is explained by more information-based trading and/or different risk preferences, one should expect more complete price reaction, or in other words, less underreaction/more overreaction, and subsequently, a number of authors (e.g., Verrecchia, 1981; Diamond and Verrecchia, 1987; Israeli, 2015) conclude that higher abnormal trading volumes around company-specific events might be an indication that the news have been fully incorporated in stock price changes, leaving less space for post-event price drifts.

The present study follows this strand of literature, assuming that high daily stock trading volumes may serve an indication of important company-specific news arriving at the market. But what about the timing of high-volume trading days? Could there be systematic differences in stock returns following high-volume days occurring in different periods, and if the answer is positive, could these differences be used for obtaining investment profits? This study sheds some light on this question by differentiating the high-volume days taking place before public holidays from other ("regular") high-volume days.

The holiday effect is one of the most widely analyzed calendar anomalies in stock markets. Its best known aspect refers to the observed fact that stock returns typically exhibit consistent patterns around holidays, with systematically higher returns on days prior to major holidays. The holiday effect is well-documented both in the US (e.g., Lakonishok, Smidt, 1988; Kim, Park, 1994; Brockman, Michayluk, 1998) and worldwide (e.g., Agrawal, Tandon, 1994; Marrett, Worthington, 2009; Bley, Saad, 2010; Dodd, Gakhovich, 2011) stock markets. The dominating explanation for the existence of the holiday effect lies in investor psychology (e.g., Brockman, Michayluk, 1998; Vergin, McGinnis, 1999), suggesting that investors tend to buy stocks before holidays because of 'high spirits' and 'holiday euphoria' (e.g., Frieder, Subrahmanyam, 2004; Bergsma, Jiang, 2015), which cause them to expect positive returns in the sequel.

Another aspect of the holiday effect refers to the fact that stock trading volumes before public holidays tend to be lower than on "regular" days, and the bid-ask spreads before holidays tend to be higher than usual, indicating that on these days, stocks tend to be less liquid (e.g., Meneu, Pardo, 2004; Cao et al., 2009; Dodd, Gakhovich, 2011). Potential explanation for lower trading activity before holidays also emanates from investors' psychology and is based on the Mood Maintenance Hypothesis (MMH, Isen, 1984, 2000), which is a well-documented psychological pattern suggesting that people are highly motivated to maintain their positive mood states, and therefore, being in positive mood, tend to think less critically and to process information in a less detailed way, in order not to undermine their pleasant mood states (e.g., Mackie, Worth, 1989; Kuykendall, Keating, 1990; Erber, Tesser, 1992; Schwarz, 2001). In the context of the holiday effect, this means that before holidays, investors, who strive to maintain their positive mood, may be less willing to make complicated trading decisions, and therefore, trade less.

Following the above-mentioned arguments and findings, I hypothesize that if important company-specific news arrive on a trading day before a holiday, then (in line with MMH), in order not to undermine their positive pre-holiday mood, investors, or at least a part of them, may be less willing to process significant company-specific information and make influential trading decisions, and therefore, may react relatively more weakly to the news. Respectively, I expect the high-volume days occurring immediately prior to public holidays to be followed by post-holiday price drifts.

I analyze daily price data for all the constituents of S&P 500 Index over the period from 1993 to 2017, and define high-volume days according to two alternative proxies. In support of the study's hypothesis, I document that pre-holiday high-volume days accompanied by both positive and negative stock returns are followed by significant price drifts on each of the next two (post-holiday) trading days and over five- and twenty-day intervals following the event day, the magnitude of the drifts increasing over longer post-event windows. On the other hand, "regular" high-volume trading days are followed by either non-significant or marginally significant price reversals. The holiday effect on stock returns following high-volume days is found to be stronger for low capitalization and high volatility stocks, and remains robust after accounting for additional

company-specific (size, CAPM beta, historical volatility) and event-specific (stock's absolute return on the event day) factors.

The rest of the paper is structured as follows. Section 2 reviews the literature dealing with stock trading volumes and their connection to stock returns, as well as the literature on different aspects of the holiday effect. Section 3 defines the study's research hypothesis. Section 4 introduces the database and the research design. Section 5 describes the empirical tests and reports the results. Section 6 concludes and provides a brief discussion.

2. Literature review

2.1. Stock trading volumes and their connection to stock returns

Prior studies suggest and discuss a number of factors that may explain and drive the trading activity. Karpoff (1986) shows that trading volume results from dispersion in prior expectations and idiosyncratic interpretations of information events. He also demonstrates that the increase in trading volume is positively correlated with the information "surprise". Furthermore, Karpoff (1987) argues that if a "surprise" is followed by stock price revision in the direction corresponding to the quality of the "surprise", then the contemporaneous trading volume increases with the absolute value of the price change. In continuation of Karpoff's line of research, Kim and Verrecchia (1991) define a measure of market's information asymmetry as a ratio of volume to the absolute value of price change. In addition, they state that volume may increase either with the absolute value of stock returns, reflecting the average change in investors' expectations, or following an increase in information asymmetry. Harris and Raviv (1993) and Kandel and Pearson (1995) assert that investors employ the same public information, but interpret it differently, a scenario which results in trading activity.

Investors may also trade for portfolio rebalancing reasons, the fact that gives rise to liquidity (or noise) trading, which is not based on information. A number of theoretical models predict that the volume of liquidity trading may be a function of past returns (e.g., DeLong et al., 1990; Hong, Stein, 1999; Hirshleifer et al., 1994, 2006). Chordia et al. (2007) conclude that liquidity trading is based on stock visibility (proxied by firm size, age, price and the book-to-market ratio), portfolio rebalancing needs, differences of opinion (proxied by forecast dispersion and firm leverage), and uncertainty about fundamental values.

Llorente et al. (2002) develop a model, in which investor's expectations of the future stock returns and exposure to the risk in equilibrium conditions are the drivers of the trading process. Baker and Stein (2004) suggest that high trading volume indicates the presence of irrational traders who push up prices (their model also involves short sale constraints). In Hong and Yu (2009), high volume indicates the presence of noise traders.

The concept of stock trading volume is closely related to the one of stock prices and returns. The early studies on volume-price relation establish that positive relations between the absolute value of daily price changes and daily volumes are present for both market indices and individual stocks (e.g., Ying, 1966; Westerfield, 1977; Rutledge, 1984; Karpoff, 1987; Schwert, 1989; Gallant et al., 1992). Additionally, Epps (1975, 1977) demonstrates that both in the stock and bond markets, the ratio of volume to absolute price change is larger for transactions when a security price rises than when it falls. Another group of studies point out at a positive relationship between absolute price changes and contemporaneous volume changes (e.g., Crouch, 1970; Epps, Epps, 1977; Harris, 1983).

More recent studies put more focus on different kinds of lag or inter-day relations between stock returns and trading volumes (e.g., Chen et al., 2001; Khan, Rizwan, 2001; Lee, Rui, 2002; Pisedtasalasai, Gunasekarage, 2007), and introduce additional relevant factors into their analysis. Ziebart (1990) states that the trading volume is positively correlated with the absolute changes in the mean analyst forecasts. Saatccioglu and Starks (1998) document that volume leads stock price changes in four out of the six emerging markets. Campbell et al. (1993) and Llorente et al. (2002) report the dynamic relation between volume and returns in the cross-section. Griffin et al. (2007) analyze the dynamic relation between market-wide trading activity and returns in 46 markets and detect a strong positive relationship between turnover and past returns. Statman et al. (2006) and Glaser and Weber (2009) obtain similar results.

Pathirawasam (2011) finds that stock returns are positively related to the contemporary changes in trading volumes. Moreover, he documents that past trading volume changes are

negatively related to stock returns, and argues that this negative relationship may be caused by investor misspecification about future earnings or illiquidity of low volume stocks. Caginalpa and Desantisa (2011) point out that if the stock price is growing, but the trading volume is declining, then stock price growth is considered by technical analysts as unstable. Remorov (2014) constructs a model of stock price and volume behavior during market crashes and finds that trading volume is inversely proportional to the square of the stock price in the case of the sharp price declines, the result being empirically supported by price and volume data for major recent US stock bankruptcies and market crashes.

A vast strand of literature deals with trading volumes around company-specific events. Previous research identifies three major sources of these abnormally high trading volumes, all stemming from some form of heterogeneity among investors: (i) differences in information (e.g., Varian, 1989; Holthausen, Verrecchia, 1990; Kim, Verrecchia, 1991, 1994, 1997; Barron et al., 2005); (ii) differing risk preferences (e.g., Beaver, 1968; Verrecchia, 1981); and (iii) differences in opinion, that is, differential interpretation of the company-specific news (e.g., Harris, Raviv, 1993; Kandel, Pearson, 1995; Bamber et al., 1997, 1999; Garfinkel, Sokobin, 2006; Hong, Stein, 2007; Bamber et al., 2011). Israeli (2015) analyzes trading volume reactions to earnings announcements and demonstrates that they provide information about future returns that cannot be deduced from the price reactions or the magnitudes of earnings surprises. He continues the line of literature (e.g., Verrecchia, 1981; Holthausen, Verrecchia, 1990; Kim, Verrecchia, 1994, 1997; Barron et al., 2005), which argues that to the extent that the increase in abnormal trading volumes around company-specific events is explained by more information-based trading and/or different risk preferences, one should expect more complete price reaction and less underreaction. Consequently, in line with a number of previous studies (e.g., Verrecchia, 1981; Diamond, Verrecchia, 1987), Israeli (2015) concludes that higher abnormal trading volumes around earnings announcements might be an indication that the price changes have fully incorporated the earnings news, leaving less space for subsequent price drifts.

2.2. Holiday effect: Psychological background and financial implications

The holiday, or the pre-holiday effect, refers to the observed fact that stock returns typically exhibit consistent patterns around holidays, with systematically high returns on days prior to major holidays. The effect has been initially examined in the context of the US. In their seminal study, Lakonishok and Smidt (1988), looking at a ninety year dataset, document that the average pre-holiday rate of return equals 0.22 percent, compared with a regular daily rate of return of less than 0.01 percent. This means that pre-holiday returns are about twenty two times larger than returns on normal days, with some 63.9 percent of all returns being positive on the days before holidays. Similarly, Ariel (1990) reports that the average pre-holiday returns in the US, over the period 1963-1982, are 10 times higher than returns over the remaining days of the year. Parametric and non-parametric tests indicate that these differences are statistically significant. Likewise, Pettengill (1989) finds that returns on days immediately preceding holidays are unusually high regardless of firm size, though being more pronounced for small firms. Kim and Park (1994) likewise document the holiday effect using market indicators from all the major US stock exchanges. Brockman (1995), Brockman and Michayluk (1997) and Brockman and Michayluk (1998) demonstrate the resilience of the holiday effect, showing its persistence across market types (auction versus dealer) and size portfolios. Hirshleifer et al. (2016) point out that at the level of individual stocks, there is pre-holiday cross-sectional seasonality, wherein stocks that historically have earned higher pre-holiday returns on average earn higher pre-holiday returns for the same holiday over the next ten years.

The holiday effect has also received an increasing amount of attention outside the US, and has been documented in different countries, precluding the possibility that it reflects the idiosyncratic market characteristics of any one exchange. Cadsby and Ratner (1992) consider Canada, Japan, Hong Kong and Australia from 1962 to 1989 and test for local holidays, US holidays and joint (local-US) holidays using market indices from each country. The results indicate significant holiday effects in all of the sample markets, with the highest returns appearing on days just prior to joint holidays. Barone (1990) finds that the Italian stock market exhibits a strong holiday effect, with an average return of 0.27 % versus an average non-holiday return of - 0.01 %. In a broader study, Agrawal and Tandon (1994) examine the holiday effect in seventeen national

markets, and detect significant pre-holiday strength in 65 percent of them. Marrett and Worthington (2009) document the holiday effect for Australian stock market, the magnitude of the former being higher in the retail industry. Dodd and Gakhovich (2011) show that the holiday effect is present in emerging Central and East European markets, being more pronounced in the earlier years of financial market operations.

The magnitude and statistical significance of pre-holiday returns may vary on specific holidays. Returns prior to religious holidays tend to be higher than returns before other holidays. Chan et al. (1996) demonstrate significant holiday effects before cultural holidays in Asia. More specifically, they show that in India there is a holiday effect before Hindu holidays; in Malaysia there are significant returns before Islamic New Year and Vesak; Singapore sees abnormal returns before Chinese New Year; and in Thailand small companies have significant abnormal returns before Chinese New Year. In New Zealand, the most significant returns are registered before the Easter holidays (Cao et al., 2009). Bley and Saad (2010) show significant returns before the Middle Eastern religious holidays in the Middle East.

The previous literature suggests a number of potential explanations for the existence of the holiday effect. The first one is the potential relationship between this effect and other calendar anomalies, such as the day-of-the-week effect, the monthly effect and the turn-of-the-year effect (e.g., Lakonishok, Smidt, 1988; Liano et al., 1992). These studies indicate that the high returns observed on pre-holidays are not a manifestation of other calendar anomalies. Another explanation is based on the existence of a link between the holiday effect and the small firm effect, since the former is more pronounced for small firms (e.g., Pettengill, 1989; Keef, Roush, 2005; Marrett, Worthington, 2009). Yet another explanation of the holiday effect is based on a set of different and systematic trading patterns. Keim (1989) suggests that the pre-holiday return may be, in part, due to movements from the bid to the ask price. Ariel (1990) points out that pre-holiday strength can be attributed to short-sellers who desire to close short but not long positions in advance of holidays or, simply, to some clientele which preferentially buys (or avoids selling) on pre-holidays.

Yet, arguably, the most promising explanation for abnormal positive returns prior to public holidays lies in investor psychology (e.g., Brockman, Michayluk, 1998; Vergin, McGinnis, 1999). This explanation stems from two psychology-based facts: first, that anticipation of holidays is associated with rising investors' mood (e.g., Frieder, Subrahmanyam, 2004; Bergsma, Jiang, 2015), and second, that people in good mood tend to believe in more positive outcomes (e.g., Kavanagh, Bower, 1985; Thaler, 1999). Following this line of reasoning, this group of studies suggests that investors tend to buy stocks before holidays because of 'high spirits' and 'holiday euphoria', which cause them to expect positive returns in the sequel.

An additional, less known and much less reported aspect of the holiday effect refers to the stock trading volumes before holidays. Meneu and Pardo (2004) show that abnormal trading volumes before public holidays tend to be lower than on "regular" days, and the bid-ask spreads before holidays tend to be higher than usual, indicating that on these days, stocks tend to be less liquid. Similarly, Cao et al. (2009) report that the daily de-trended trading volumes on pre-holiday trading days are generally lower than on other trading days, and subsequently conclude that investors may not be able to capture abnormal returns prior to holidays due to the low trading volume. Dodd and Gakhovich (2011) document similar results for Central and East European markets.

Potential explanation for lower trading activity before holidays also emanates from investors' psychology and is based on the Mood Maintenance Hypothesis (MMH, Isen, 1984, 2000), which is a documented psychological pattern suggesting that people are highly motivated to maintain positive mood states. Psychological literature reports that people tend to be concerned with the fact that detailed information processing might undermine pleasant mood states, and therefore, in line with the MMH, positive mood may be associated with less critical thinking and reduced information processing (Mackie, Worth, 1989; Kuykendall, Keating, 1990; Erber, Tesser, 1992; Schwarz, 2001). In the context of the holiday effect, this means that before holidays, investors, who strive to maintain their positive mood, may be less willing to make trading decisions, which are associated with information processing, and therefore, trade less.

3. Research hypothesis

The present study concentrates on the holiday effect on stock price dynamics following days characterized by extremely high trading volumes.

As discussed in the previous Section, a number of studies (e.g., Karpoff, 1987; Baker, Stein, 2004; Hong and Yu, 2009) connect stock trading volumes to the significance of the new relevant incoming information. Following this strand of literature, I assume that extremely high daily stock trading volumes serve an indication of important company-specific news arriving to the market. Furthermore, in line with another strand of literature (e.g., Meneu, Pardo, 2004; Cao et al., 2009; Dodd, Gakhovich, 2011), which documents less intense trading activity before holidays, I hypothesize that if important company-specific news arrive on a trading day before a holiday, then (in line with MMH), in order not to undermine their positive pre-holiday mood, investors, or at least a part of them, may be less willing to process significant company-specific information and make influential trading decisions, and therefore, may react relatively more weakly to the news. In other words, I expect that investors may tend to "postpone important decisions until the holidays are over", and thus, to underreact to important company-specific news arriving before holidays, making the respective stock price reactions relatively weaker than they "should have been". This hypothesis is consistent with the findings by Kudryavtsev (2017), who documents that large stock price moves taking place immediately before public holidays tend to be followed by significant post-holiday price drifts. Yet, unlike the latter study, I suggest that relatively moderate pre-holiday stock price reactions to important company-specific news may also incorporate an element of underreaction.

Respectively, since stock price underreaction to news may be expected to result in subsequent (post-holiday) price drifts, this study's main hypothesis may be formulated as follows:

Hypothesis: Pre-holiday stock returns accompanied by extremely high stock trading volumes should be followed by post-holiday price drifts.

4. Data description and research design

In my empirical analysis, I employ the adjusted daily price and volume data for all the constituents of S&P 500 Index, which is also used as a proxy for the general stock market index, over the period from 1993 to 2017. The data is retrieved from the Center for Research in Security Prices (CRSP). For each day characterized by extremely high trading volume in a given stock ("high-volume day", as defined in the sequel), I match the underlying firm's market capitalization, as recorded on a quarterly basis at <http://ycharts.com/>, for the closest preceding date.

I employ two alternative volume proxies and define day t as a high-volume day for stock i if:

Proxy A: Stock i 's trading volume on day t (VOL_{it}) was at least three times higher than the stock's average trading volume over 250 trading days preceding day t ($AvVol_{it}$), that is: $VOL_{it} \geq 3AvVol_{it}$.

Proxy B: Stock i 's trading volume on day t was at least five times higher than the stock's average trading volume over 250 trading days preceding day t , that is:

$$VOL_{it} \geq 5AvVol_{it}.$$

Proxy A allows to substantially increase the working sample, while proxy B concentrates on the most salient trading days in the respective stocks*.

I include high-volume days in my working sample, provided (i) there were historical trading data for at least 250 trading days before, and 20 days after the event (high-volume day); (ii) market capitalization information was available for the respective stocks; and (iii) the absolute value of the stock price change on the high-volume day did not exceed 50%. The intersection of these filtering rules yielded a working sample of the following sizes for the two definition proxies:

- For Proxy A: 12,468 high-volume days, including 557 pre-holiday and 11,911 "regular" (not preceding any holiday) high-volume days.
- For Proxy B: 5,243 high-volume days, including 248 pre-holiday and 4,995 regular high-volume days.

* I employ a number of additional volume proxies. The results for all of them (available upon request from the author) are qualitatively similar to those reported in Section 5.

US holidays examined include President's Day, Martin Luther King Jr. Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas and New Year's Day. Table 1 comprises some basic descriptive statistics of high-volume day stock returns, indicating no significant differences between pre-holiday and regular high-volume days.

In order to measure the stock price dynamics after the high-volume days, I calculate abnormal stock returns (ARs) using the Market Model with alpha and beta estimated for the respective stock over 250 trading days preceding day t^* . That is, for each event i , for the period of 250 trading days preceding the event, I regress the respective stock's returns on the contemporaneous market (S&P 500 Index) returns in the following way:

$$SR_{ik} = \alpha_i + \beta_i MR_{ik} + \varepsilon_{ik}, k = t - 250, \dots, t - 1 \quad (1)$$

where: SR_{ik} is the stock return on day k (k runs from $t-250$ to $t-1$) preceding event i ; and MR_{ik} is the market return on day k preceding event i , and then use the regression estimates $\hat{\alpha}_i$ and $\hat{\beta}_i$ in order to calculate abnormal stock returns for 20 trading days following the event i , as follows:

$$AR_{il} = SR_{il} - [\hat{\alpha}_i + \hat{\beta}_i MR_{il}] \quad , l = t + 1, \dots, t + 20 \quad (2)$$

where: AR_{il} is the abnormal stock return on day l (l runs from $t+1$ to $t+20$) following event i .

In order to detect the holiday effect on stock returns following high-volume days, in the next Section, I analyze stock ARs during 20 trading days following the events, differentiating between pre-holiday and regular high-volume days.

5. Results description

5.1. Stock returns following high-volume days: Total sample

First of all, I employ the total sample of events (high-volume days) and analyze the respective stocks' subsequent returns. Table 2 comprises average ARs and cumulative ARs (CARs), as well as their statistical significance, for the period of up to 20 trading days following high-volume days accompanied by stock price increases and decreases, defined according to the two above-mentioned proxies. Day 1 refers to the first trading day after the high-volume day[†].

The results for the total sample indicate that high-volume days, in general, are followed by either non-significant or marginally significant short-term price reversals, whose magnitude slightly increases for longer post-event time windows. The price reversals are slightly more pronounced after negative-return high-volume days, and for volume proxy B referring to the most extreme volume days, suggesting that the latter may bring with them some element of price overreaction to underlying news.

5.2. Holiday effect on stock returns following high-volume days

In order to test if the pre-holiday timing of high-volume trading days affects the respective stocks' post-event (and in this case, post-holiday) returns, I divide the total sample of high-volume days in two major subsamples: (i) high-volume days taking place immediately before a public holiday; (ii) all the other high-volume days, that is, those that took place on "regular" trading days.

Table 3 depicts average ARs following pre-holiday and regular high-volume days accompanied by positive and negative stock returns, as well as the respective AR differences and their statistical significance, for both event definition proxies. The results corroborate the study's research hypothesis with respect to the holiday effect on stock returns following high-volume days. The first thing to note is that pre-holiday high-volume days accompanied by both price increases and decreases are followed by significant post-holiday price drifts. The magnitude of these price drifts increases for longer post-event periods, so that for the post-event window 1 to 20, average CARs following pre-holiday high-volume days accompanied by price increases reach 1.92 %, and 1.93 %, according to proxies A and B, respectively, while average CARs following pre-holiday high-volume days accompanied by price decreases are even slightly more pronounced and equal – 1.98 % and – 2.02 %, according to proxies A and B, respectively, all the CARs being highly statistically significant. On the other hand, regular high-volume days accompanied by both price

* Alternatively, I calculate ARs using Market Adjusted Returns (MAR) – return differences from the market index, and the Fama-French three-factor plus momentum model. The results (available upon request from the author) remain qualitatively similar to those reported in Section 5.

† The post-event time windows are defined similarly to Kudryavtsev (2017).

increases and decreases are followed by either non-significant or marginally significant stock price reversals over all the post-event windows. Another noteworthy result refers to the fact that post-event period AR/CAR differences between the pre-holiday and regular high-volume days are highly significant and also become more pronounced for longer post-event windows. According to the event definition proxies A and B, for the Days 1 to 20, CAR differences between the two groups of events equal 2.18 % and 2.29 %, following high-volume days accompanied by price increases, and even more impressive – 2.37 % and – 2.51 %, following high-volume days accompanied by price decreases.* Once again, we might observe that both results are more pronounced for proxy B referring to the most extreme volume days, suggesting that the latter have an even higher chance to be accompanied by stock returns incorporating some element of overreaction to news.

5.3. *Holiday effect on the post-event stock returns within different stock groups*

Having detected the holiday effect on stock returns following high-volume days, I proceed to analyzing its magnitude for different categories of stocks. Namely, I classify the stocks by the firm size (market capitalization) and by historical volatility of stock returns. The motivation for this analysis arises from the findings by Baker and Wurgler (2006), who argue that low capitalization and highly volatile stocks are especially likely to be disproportionately sensitive to broad waves of investor sentiment, and by Kudryavtsev (2017), who documents that holiday effect on stock returns following large price moves is more pronounced for these categories of stocks.

First, I analyze the magnitude of the effect by firm size. For each of the event definition proxies and separately for high-volume days accompanied by positive and negative stock returns, I split the subsamples of pre-holiday and regular events into three roughly equal parts by the firms' market capitalization (high, medium and low) reported for the end of the quarter preceding each event. Table 4 reports for both event definition proxies, average post-event ARs/CARs, following pre-holiday and regular high-volume days, as well as the respective AR differences and their statistical significance, for high and low market capitalization firms. Consistently with Baker and Wurgler (2006) and Kudryavtsev (2017), the holiday effect on stock ARs following high-volume days accompanied by both price increases and decreases is stronger for low capitalization stocks. This result is twofold: (i) for small stocks, the magnitude of the price drifts following pre-holiday high-volume days is larger (e.g., according to proxies A and B, for post-event window 1 to 20, average CARs following pre-holiday high-volume days accompanied by price increases equal 1.58 % and 1.57 % for high capitalization stocks, and 2.41 % and 2.45 % for low capitalization stocks, while average CARs following pre-holiday high-volume days accompanied by price decreases equal - 1.46 % and - 1.48 % for high capitalization stocks, and - 2.52 % and - 2.58 % for low capitalization stocks); and (ii) for small stocks, AR differences for the post-event period between the two subsamples of events are greater (e.g., according to proxies A and B, for post-event window 1 to 20, following high-volume days accompanied by price increases, average CAR differences between the pre-holiday and regular events are 1.76 % and 1.77 % for high capitalization stocks, and 2.76 % and 2.94 % for low capitalization stocks, while following high-volume days accompanied by price decreases, average CAR differences between the pre-holiday and regular events are - 1.71 % and - 1.77 % for high capitalization stocks, and - 3.08 % and - 3.25 % for low capitalization stocks)[†].

Furthermore, I concentrate on the effect of historical stock volatility. For each of the event definition proxies and separately for high-volume days accompanied by positive and negative stock returns, I split the subsamples of pre-holiday and regular events into three roughly equal parts by

* As a robustness check, I have repeated the analysis employing two additional sample filtering criteria. Namely, I have alternatively excluded from the working sample: (i) overlapping high-volume days, defined as those that took place for the same stock within a 20-trading days window; and (ii) high-volume days for the stocks whose prices prior to the moves were lower than ten dollars. The results (available upon request from the author) are qualitatively similar, representing an additional support for the existence of the holiday effect on stock returns following high-volume days.

[†] The results for medium capitalization stocks for high-volume days accompanied by both price increases and decreases, for all the post-event windows and according to both proxies, indicate that these stocks are less influenced by the holiday effect than low capitalization stocks, and more influenced by it than high capitalization stocks. The detailed results are available upon request from the author. Overall, the results demonstrate that the holiday effect on stock ARs following high-volume days decreases with market capitalization.

the standard deviation of stock returns over Days – 250 to – 1 (high, medium and low volatility stocks)*. Table 5 comprises relevant AR/CAR statistics for high and low volatility stocks. Once again, in line with the previous literature, the magnitude of the holiday effect on stock returns following high-volume days, as expressed by the magnitude of post-event price drifts and the AR/CAR differences between the pre-holiday and regular events, is stronger pronounced for more volatile stocks†.

The overall conclusion arising from this Subsection is that for low market capitalization and more volatile stocks, price reactions to important company-specific news are more affected by investors' unwillingness to make influential decisions before holidays, possibly due to the reduced amount of information on these stocks and their higher risk levels. As a result, the post-event price drifts for these stocks are more pronounced‡.

5.4. Multifactor analysis

In this Subsection, I check the persistence of the holiday effect on stock returns following high-volume days, controlling for additional firm-specific and event-specific factors. To do so, separately for high-volume days accompanied by positive and negative stock returns, for the windows 1, 1 to 5 and 1 to 20 following the events, and according to both proxies, I run the following regressions:

$$AR_{it} = \beta_0 + \beta_1 HOLIDAY_i + \beta_2 MCap_i + \beta_3 Beta_i + \beta_4 SRVolat_i + \beta_5 |SRO|_i + \varepsilon_{it} \quad (3)$$

where: AR_{it} is the abnormal stock return following event i for post-event window t (Days 1, 1 to 5, or 1 to 20); $HOLIDAY_i$ is the dummy variable, taking the value 1 if the event i takes place immediately before a public holiday, and 0 otherwise; $MCap_i$ is the natural logarithm of the firm's market capitalization corresponding to event i , normalized in the cross-section; $Beta_i$ is the estimated CAPM beta for event i , calculated over the Days -250 to -1 and normalized in the cross-section; $SRVolat_i$ is the standard deviation of stock returns over the Days -250 to -1 corresponding to event i , normalized in the cross-section; and $|SRO|_i$ is the absolute Day-0 stock return corresponding to event i (stock return on the high-volume day).

Table 6 presents the regression coefficients for all the post-event windows, indicating the following results:

- For high-volume days accompanied by stock price increases (decreases), the regression coefficients on *HOLIDAY* are positive (negative) and highly significant for all the post-event windows, which means that post-event price drifts following high-volume days accompanied by stock returns of both signs are greater if these days take place before public holidays. This result indicates that the holiday effect on stock returns following high-volume days remains significant even after controlling for additional factors affecting post-event ARs/CARs.

- For all the post-event windows following high-volume days accompanied by positive (negative) stock returns, the regression coefficients on *MCap* are significantly positive (negative), the regression coefficients on *Beta* are negative (positive) and marginally significant, and the regression coefficients on *SRVolat* are significantly negative (positive), suggesting that post-event ARs/CARs following high-volume days accompanied by stock price increases (decreases) tend to be lower (higher) for low capitalization, high-beta and highly volatile stocks. A potential reason for these results may be that investors possess less fundamental information on these groups of stocks and therefore, tend to overreact to the respective companies' events, which in turn, leads to post-

* The sample partition approach by both market capitalization and historical stock volatility is similar to the one employed by Kliger and Kudryavtsev (2010) and Kudryavtsev (2017).

† The results for medium volatility stocks for high-volume days accompanied by both price increases and decreases, for all the post-event windows and according to both proxies and thresholds, indicate that these stocks are less influenced by the holiday effect than high volatility stocks, and more influenced by it than low volatility stocks. The detailed results are available upon request from the author. Overall, the results demonstrate that the holiday effect on stock ARs following high-volume days increases with historical stock volatility.

‡ I have also performed the analysis of post-event ARs for three subsamples partitioned by the CAPM stock beta calculated over Days -250 to -1. In line with Baker and Wurgler (2006) and Kudryavtsev (2017), I have documented that the holiday effect on stock ARs following high-volume days increases with stock beta. The detailed results are available upon request from the author.

event price reversals. It should be noted again that the holiday effect on the post-event returns, which is manifested in price drifts after pre-holiday high-volume days, remains significant after controlling for the above-mentioned factors.

- The coefficients on $|SRO|$ are non-significant, demonstrating that post-event stock returns do not depend on the magnitude of the event-day stock returns.

6. Conclusion

In this paper, I have analyzed an additional aspect of the holiday effect. Namely, I explored the effect of investors' positive pre-holiday mood on stock returns high-volume trading days. Following the Mood Maintenance Hypothesis, I suggested that if significant company-specific news arrive before a holiday, then investors striving to maintain their positive pre-holiday mood may be less willing to make influential trading decisions, and therefore, may react relatively more weakly (in fact, underreact) to the news. Therefore, since stock price underreaction to news is recognized to result in subsequent price drifts, I hypothesized that pre-holiday high-volume days should be followed by significant post-holiday price drifts.

The results of the empirical analysis supported the study's hypothesis. Analyzing a large sample of high-volume days and defining the latter according to two alternative proxies, I documented that pre-holiday high-volume accompanied by both positive and negative stock returns are followed by significant post-holiday price drifts on the next two trading days and over five- and twenty-day intervals following the event, the magnitude of the drifts increasing over longer post-event windows, while other (regular) high-volume days are followed by either non-significant or marginally significant price reversals.

Furthermore, I established that the holiday effect on stock returns following high-volume days was of higher magnitude for low capitalization firms and stocks with higher volatility of historical returns, implying that investors' mood may have a stronger impact on low market capitalization and more volatile stocks, possibly due to the reduced amount of fundamental information on these stocks and their higher risk levels. Moreover, this effect remained significant after accounting for additional company-specific (size, CAPM beta, historical volatility) and event-specific (stock's absolute return on the event day) factors. The results proved to be robust to different methods of adjusting returns, such as market-adjusted returns, market-model excess returns, and Fama-French three-factor model excess returns, and to different sample filtering criteria.

To summarize, at least in a perfect stock market with no commissions, the strategy based on buying (selling short) stocks after pre-holiday high-volume days accompanied by positive (negative) stock returns looks promising. This may appear to be a valuable result for both financial theoreticians in their eternal discussion about stock market efficiency, and practitioners in search of potentially profitable investment strategies. Potential directions for further research may include expanding the analysis to other stock exchanges, performing a separate analysis for different holidays and for the periods of bull and bear market.

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Appendix

Table 1. Comparative descriptive statistics of stock returns on pre-holiday and regular high-volume days

Statistics of stock returns	Proxy A (12,468 events)		Proxy B (5,243 events)	
	Pre-holiday (557 events)	Regular (11,911 events)	Pre-holiday (248 events)	Regular (4,995 events)
Mean, %	-0.31	-0.32	-0.33	-0.36
Median, %	-0.16	-0.19	-0.19	-0.20
Standard Deviation, %	1.61	1.45	1.67	1.56
Minimum, %	-34.25	-48.87	-34.25	-48.87
Maximum, %	32.47	41.28	32.47	41.28
Percent of positive	47.02	46.48	45.71	45.39

Table 2. Abnormal stock returns following high-volume days accompanied by positive and negative stock returns: Total sample

Panel A: High-volume days accompanied by positive stock returns		
Days relative to event	Average AR/CAR following high-volume days, % (2-tailed p-values)	
	Proxy A (5,828 events)	Proxy B (2,398 events)
1	-0.03 (34.18%)	-0.05 (27.55%)
2	-0.01 (72.84%)	-0.02 (49.67%)
1 to 5	-0.11 (27.46%)	-0.17 (21.40%)
1 to 20	-0.23 (18.62%)	-0.33 (13.78%)
Panel B: High-volume days accompanied by negative stock returns		
Days relative to event	Average AR/CAR following high-volume days, % (2-tailed p-values)	
	Proxy A (6,640 events)	Proxy B (2,845 events)
1	0.06 (19.74%)	0.08 (17.62%)

2	0.01 (93.65%)	0.01 (84.01%)
1 to 5	0.20 (18.21%)	0.27 (14.82%)
1 to 20	0.35 (12.03%)	*0.44 (9.13%)

Asterisks denote 2-tailed p-values: * $p < 0.10$

Table 3. Abnormal stock returns following pre-holiday and regular high-volume days accompanied by positive and negative stock returns

Panel A: High-volume days accompanied by positive stock returns						
Days relative to event	Average AR/CAR following high-volume days, % (2-tailed p-values)					
	Proxy A			Proxy B		
	Pre-holiday (268 events)	Regular (5,560 events)	Difference	Pre-holiday (116 events)	Regular (2,282 events)	Difference
1	***0.89 (0.91%)	-0.05 (36.54%)	***0.94 (0.24%)	***0.91 (0.84%)	-0.08 (28.69%)	***0.99 (0.12%)
2	0.38 (12.40%)	-0.02 (47.69%)	*0.40 (7.87%)	0.37 (15.48%)	-0.03 (38.49%)	*0.40 (8.23%)
1 to 5	***1.78 (0.21%)	-0.14 (18.34%)	***1.92 (0.02%)	***1.80 (0.23%)	-0.20 (15.58%)	***2.00 (0.00%)
1 to 20	***1.92 (0.08%)	-0.26 (12.08%)	***2.18 (0.00%)	***1.93 (0.05%)	*-0.36 (9.75%)	***2.29 (0.00%)
Panel B: High-volume days accompanied by negative stock returns						
Days relative to event	Average AR/CAR following high-volume days, % (2-tailed p-values)					
	Proxy A			Proxy B		
	Pre-holiday (289 events)	Regular (6,351 events)	Difference	Pre-holiday (132 events)	Regular (2,713 events)	Difference
1	***-0.93 (0.80%)	0.08 (28.99%)	***-1.01 (0.17%)	***-0.95 (0.91%)	0.11 (24.19%)	***-1.06 (0.15%)
2	-0.41 (11.88%)	0.02 (46.67%)	*-0.43 (6.62%)	-0.42 (12.00%)	0.03 (42.17%)	*-0.45 (6.52%)
1 to 5	***-1.82 (0.10%)	0.24 (13.08%)	***-2.06 (0.00%)	***-1.88 (0.09%)	0.31 (10.97%)	***-2.19 (0.00%)
1 to 20	***-1.98 (0.04%)	*0.39 (9.54%)	***-2.37 (0.00%)	***-2.02 (0.01%)	*0.49 (8.69%)	***-2.51 (0.00%)

Asterisks denote 2-tailed p-values: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 4. Abnormal stock returns following pre-holiday and regular high-volume days accompanied by positive and negative stock returns, for high and low market capitalization firms

Panel A: High-volume days accompanied by positive stock returns						
Days relative to event	Average AR/CAR following high-volume days for high/low market capitalization firms, %					
	Proxy A			Proxy B		
	Pre-holiday (89/89 events)	Regular (1,853/1,853 events)	Difference	Pre-holiday (44/44 events)	Regular (760/761 events)	Difference
1	*0.64/**1.12	-0.03/-0.09	*0.67/**1.21	*0.62/**1.19	-0.04/-0.13	*0.66/**1.32
2	0.29/0.45	0.01/-0.04	0.30/*0.49	0.21/0.52	-0.01/-0.08	0.22/*0.60
1 to 5	**1.38/**2.22	-0.07/-0.20	***1.45/**2.42	**1.37/**2.28	-0.12/-0.29	***1.49/**2.57
1 to 20	**1.58/**2.41	-0.18/*-0.35	***1.76/**2.76	**1.57/**2.45	-0.20/*-0.49	***1.77/**2.94
Panel B: High-volume days accompanied by negative stock returns						
Days relative to event	Average AR/CAR following high-volume days for high/low market capitalization firms, %					
	Proxy A			Proxy B		
	Pre-holiday (96/96 events)	Regular (2,117/2,117 events)	Difference	Pre-holiday (47/48 events)	Regular (904/904 events)	Difference
1	*-0.66/**-1.17	0.03/0.14	*-0.69/**-1.31	*-0.67/**-1.20	0.05/0.20	*-0.72/**-1.40
2	-0.24/*-0.61	0.00/0.06	-0.24/*-0.67	-0.24/*-0.63	0.01/0.07	-0.25/*-0.70
1 to 5	**1.34/**2.33	0.14/0.35	***1.48/**2.68	**1.36/**2.39	0.19/0.43	***1.55/**2.82
1 to 20	**1.46/**2.52	0.25/*0.56	***1.71/**3.08	**1.48/**2.58	0.29/*0.67	***1.77/**3.25

Asterisks denote 2-tailed p-values: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 5. Abnormal stock returns following pre-holiday and regular high-volume days accompanied by positive and negative stock returns, for high and low volatility stocks

Panel A: High-volume days accompanied by positive stock returns						
Days relative to event	Average AR/CAR following high-volume days for high/low volatility stocks, %					
	Proxy A			Proxy B		
	Pre-holiday (89/89 events)	Regular (1,853/1,853 events)	Difference	Pre-holiday (44/44 events)	Regular (760/761 events)	Difference
1	**0.98/*0.71	-0.08/-0.04	**1.06/*0.75	**1.01/*0.70	-0.10/-0.05	**1.11/*0.75
2	0.43/0.30	-0.03/0.00	*0.46/0.30	0.48/0.24	-0.07/-0.02	*0.55/0.26
1 to 5	**2.05/**1.49	-0.18/-0.09	***2.23/**1.58	**2.10/**1.48	0.02	***2.36/**1.63
1 to 20	***2.29/**1.68	-0.31/-0.20	***2.60/**1.88	***2.32/**1.69	-0.26/-0.15	***2.77/**1.92
					*-0.45/-0.23	
Panel B: High-volume days accompanied by negative stock returns						
Days relative to event	Average AR/CAR following high-volume days for high/low volatility stocks, %					
	Proxy A			Proxy B		
	Pre-holiday (96/96 events)	Regular (2,117/2,117 events)	Difference	Pre-holiday (47/48 events)	Regular (904/904 events)	Difference

1	** -1.01/* -0.71	0.12/0.05	*** -1.13/* -0.76	** -1.03/* -0.72	0.18/0.07	*** -1.21/* -0.79
2	* -0.52/-0.29	0.05/0.01	* -0.57/-0.30	* -0.53/-0.30	0.06/0.01	* -0.59/-0.31
1 to 5	*** -2.18/** -1.46	0.32/0.16	*** -2.50/*** -1.62	*** -2.26/** -1.47	0.38/0.20	*** -2.64/*** -1.67
1 to 20	*** -2.41/** -1.55	* 0.51/0.29	*** -2.92/*** -1.84	*** -2.48/** -1.56	* 0.61/0.34	*** -3.09/*** -1.90

Asterisks denote 2-tailed p-values: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 6. Multifactor regression analysis of ARs/CARs following high-volume days accompanied by positive and negative stock returns

Panel A: Large stock price increases						
Explanatory variables	Coefficient estimates, % (2-tailed p-values)					
	Dependent variable – AR_1		Dependent variable – $CAR(1, 5)$		Dependent variable – $CAR(1, 20)$	
	Proxy A (12,468 events)	Proxy B (5,243 events)	Proxy A (12,468 events)	Proxy B (5,243 events)	Proxy A (12,468 events)	Proxy B (5,243 events)
Intercept	** -0.06 (2.08 %)	** -0.09 (1.87 %)	*** -0.15 (0.54 %)	*** -0.19 (0.32 %)	*** -0.27 (0.05 %)	*** -0.35 (0.02 %)
HOLIDAY	*** 0.95 (0.12 %)	*** 0.98 (0.08 %)	*** 1.93 (0.00 %)	*** 1.99 (0.00 %)	*** 2.17 (0.00 %)	*** 2.30 (0.00 %)
MCap	** 0.28 (1.85 %)	** 0.30 (1.56 %)	** 0.31 (1.45 %)	** 0.32 (1.34 %)	** 0.30 (1.87 %)	** 0.29 (2.07 %)
Beta	* -0.13 (8.25 %)	* -0.14 (8.19 %)	* -0.14 (8.21 %)	* -0.16 (7.84 %)	* -0.15 (8.47 %)	* -0.14 (8.71 %)
SRVolat	* -0.18 (6.23 %)	* -0.17 (6.87 %)	* -0.19 (5.99 %)	* -0.19 (6.30 %)	* -0.20 (5.87 %)	* -0.21 (5.66 %)
SRO	-0.02 (48.57 %)	-0.03 (38.56 %)	-0.04 (35.61 %)	-0.03 (44.29 %)	-0.01 (68.54 %)	-0.02 (49.01 %)
Panel B: Large stock price decreases						
Explanatory variables	Coefficient estimates, % (2-tailed p-values)					
	Dependent variable – AR_1		Dependent variable – $CAR(1, 5)$		Dependent variable – $CAR(1, 20)$	
	Proxy A (12,468 events)	Proxy B (5,243 events)	Proxy A (12,468 events)	Proxy B (5,243 events)	Proxy A (12,468 events)	Proxy B (5,243 events)
Intercept	** 0.08 (1.81 %)	** 0.12 (1.11 %)	*** 0.25 (0.34 %)	*** 0.30 (0.21 %)	*** 0.40 (0.03 %)	*** 0.48 (0.00 %)
HOLIDAY	*** -1.02 (0.07 %)	*** -1.07 (0.04 %)	*** -2.08 (0.00 %)	*** -2.21 (0.00 %)	*** -2.36 (0.00 %)	*** -2.52 (0.00 %)
MCap	** -0.23 (3.25 %)	** -0.22 (4.02 %)	** -0.25 (2.97 %)	** -0.24 (3.51 %)	** -0.25 (3.12 %)	** -0.26 (3.23 %)
Beta	0.10 (10.73 %)	* 0.12 (9.81 %)	* 0.11 (9.96 %)	* 0.14 (9.11 %)	* 0.13 (8.69 %)	0.09 (13.22 %)
SRVolat	** 0.22 (4.80 %)	** 0.24 (4.13 %)	* 0.21 (5.27 %)	* 0.20 (5.84 %)	** 0.25 (4.02 %)	** 0.24 (4.61 %)

SRo	0.04 (37.19 %)	0.02 (56.20 %)	0.03 (29.88 %)	0.01 (78.55 %)	0.01 (92.16 %)	0.04 (31.31 %)
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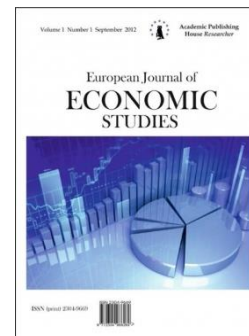
Asterisks denote 2-tailed p-values: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

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Concept of Multi-Level Simulation Model for Developing Regional Government's Economic Strategy

Marsel M. Nizamutdinov ^{a, *}, Vladimir V. Oreshnikov ^a

^a Ufa Federal Research Centre, Russian Academy of Science, Ufa, Russian Federation

Abstract

The article considers the simulation model's concept based on integration of the regional economic elements' interconnections within the united computational scheme. It has been substantiated that the development of a long-term strategy for the socio-economic development of a region requires using formalized advanced planning methods, economic and mathematical models as management tools. The model is proposed as a tool for determining the conditions and parameters of the regional strategic development in a changing macro environment.

The main attention is paid to description of the formal model and the behavior algorithm for the economic agent of the "regional government" which considered as the main functional subsystem of the imitation model. The simulation model's structure allows implementing system modeling and forecasting the parameters of the socio-economic system development at the regional level and could be used as the practical tool for substantiating integrated regional development strategies for the medium term.

Keywords: simulation model, economic and innovation development strategy, regional government.

1. Introduction

The region as the complex socio-economic system includes many of different elements interacting with each other and with the elements of the environment in time. Making decisions in the control of the systems of this scale requires a thorough and comprehensive analysis of the possible consequences of their implementation. In this regard, there is an objective need for a comprehensive science-based instruments based on the development of economic-mathematical model of the region, for analyzing alternative variants of development of the regional economy, for developing its forecast and for creating recommendations for achieving the goals.

At the moment there are sufficiently large number economic-mathematical models of socio-economic development of the region. In general, most of the constructed approaches based on the properties on the known of the classical models (input-output model, the model of general economic equilibrium system dynamics models) or focused on the synthesis of simulation techniques, agent-based modeling and decision theory, using the possibilities of modern computer technology (Makarov, 2005; Bakhtizin, 2008; Oleinik, 2005). The majority of them are the universal, multipurpose systems based on combined use of various methods and possessing significant opportunities of complex modeling. At the same time the practice of using this systems shows that despite of wide functionalities the essential lacks interfering reception of qualitative

* Corresponding author

E-mail addresses: marsel_n@mail.ru (M.M. Nizamutdinov)

forecasts are inherent in them, including: weak equation of modeling results (Aitova, 2018); low forecasting accuracy (Nizamutdinov, 2017); scenarios analysis toolkit limitations (Akhmetov, 2017); information supply difficulties (Chernyakhovskaya, 2017). The main principles and requirements to the imitation model's toolkit have been formulated, namely: system approach as possibility to integrate all significant elements and relations of the real object; scientific validity as necessary to use scientifically-proved methods providing strict formalization and reliability of the simulation output; balance matrix – is complete account of formation and use sources providing preservation of basic productive proportions; alternativeness – is an opportunity of model to generate and estimate alternative development strategy realization in view of scenario conditions; practical applicability – is sufficiency of official statistical base for model construction in aim to transit from theoretical calculations to practical results.

The important stage of region model construction is system representation of social and economic system of region as sets of basic elements and their interrelations (Ulyanova, 2015). In view of available interpretations for the purposes of modeling it was offered to consider 4 sectors of economy (industrial sector, population, public sector and an external world), 3 basic markets (commodity, financial and the market of resources) in view of their system interrelations (Nizamutdinov, 2017). According to such structure it was offered to form the basic functional blocks of complex model of region.

According to the principles formulated above the concept of the imitation model has been suggested in the following basic stages:

- Studying statistical base and allocation the main modeling parameters. The set of the parameters must be defined by structure of the real object;
- The model's system properties formalization using SAM methodology. The construction of balance equations system is the main result of the stage;
 - The parameters' functional dependences should be formalized at the next stage according to logic of economic parameters relations. The econometric equations system is the result of this iteration defining functional relation between base model's parameters.
 - The model's managing and scenario parameters formalization i.e. determination of inputs, outputs and variables of the model, «scenarios cards» construction defining possible limits of the parameters changing.

In this article we propose a methodical approach to developing regional economy model which combines the advantages of simulation models and behavioral models from one side and the properties of the classical balance and dynamic models on the other.

2. Discussion

The model of the region is hierarchically structured and logically related composition models of 3 types – complex behavioral model of economic agents, the system dynamic balance models and control model (Figure 1). The central element (core) of the proposed multi-level modeling concept is the set of models of economic subjects (agents) behavior which represent within the overall structure of the complex model of its intellectual component. As elements of this subsystem is proposed to formalize the behavior of aggregate economic subjects such as "The aggregate producer", "The household", "The state (regional level)", "The financial Sector", "The outside world."

Management model

$$U = F(Y_p, Y, Sc, T, G; t)$$

Dynamic balance model

$$X = F(In, Exp, Fl, St, t)$$

Agent's behavior model

$$B = F(U; X; S; R; Y_a; t)$$

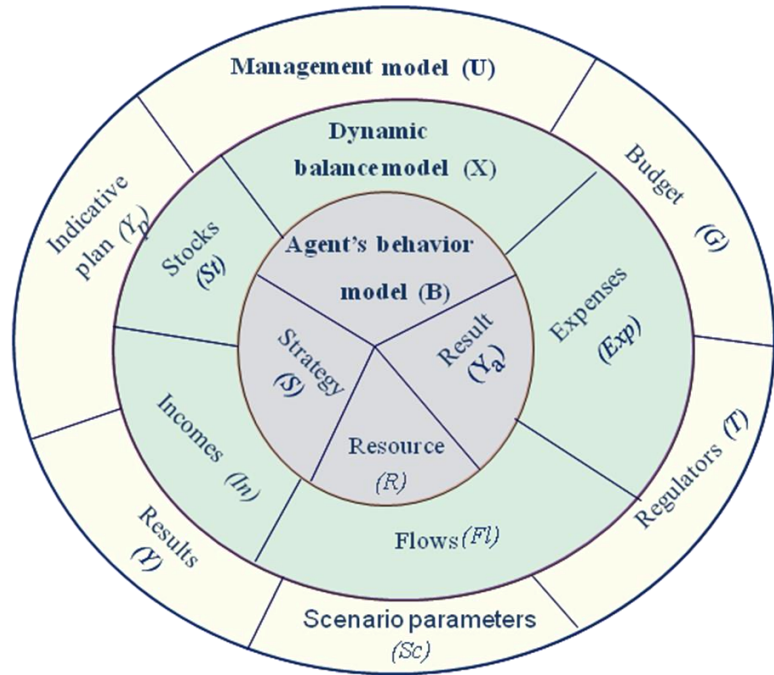


Fig. 1. General modeling concept scheme

The common logic of simulation of the economic agents' behavior represents some formalized mechanism for the transformation of existing economic agent (primarily financial) resources R in final result of its activities Y through the implementation economic strategy S . In this case, the logic of the behavioral models suggests that each economic agent through their own strategy implementation considers other economic agents strategies over a horizontal interrelation system and also through a vertical interrelation system considers the conditions and limitations, installed him to model a higher level of the hierarchy. Economic agents are adapting to the current strategies of each other within each model time point, ensuring the achievement of own local goals, and at the same time through controls system achieving a higher level of global development of the entire system – the sustainable economic growth dynamics.

The intermediate element in the hierarchical structure of models is dynamic balancing system, which is implemented on the principles of national accounting and extended modification based on an integrated matrix of financial flows SAM. The identities balance presence provides preservation basic proportions of the production and distribution of the end product at the coordination of financial flows between the models of micro-macro levels and also a. A dynamic balance models subset represents certain system of mathematical equations that reflect the static context of the balance of income In and expenses Exp the economic agents for each simulation step within the framework iterative algorithm in the dynamic section - balance the rate of input and output flows of Fl financial and economic agents accumulated amount of inventories St .

The top level of the models hierarchy submitted the control model which represents the economy macro level and within the framework implementing the integrated model of the functions of planning and regulation of the entire macroeconomic system. In fact, this level of the hierarchy implements a subset of the functions of the entity "The state" which will be considered below.

A distinctive feature of the proposed concept is to link their own strategy of each economic agent with the strategies of other economic agents. This procedure is carried out through system of horizontal interrelations and the conditions and restrictions which set him by the models of a higher level of the hierarchy through the vertical interrelations. This approach allows us to form medium and long-term development strategy of the region including the mutual influence of the objectives and results of activities of different levels.

In this research, we describe the detail modeling of the economic agents' behavior «The state (state government) » which is represented by a set of federal, regional governments, as well as

extra-budgetary funds. The basic functionality of the agent "The state (state government)" is all kinds of tax collection of and the formation of budget revenues due to tax and other financial income and accumulated redistribution of financial resources among the other agents. Moreover, the agent has the power, which is reflected in the decision to regulate financial flows of between the agents. The economic agent "The state" appears within the framework of model one of the consumers of the end product and carries out the main macro-economic control. The strategy of agent behavior is to regulate the level of public demand for the end product and determine of the economic regulators to provide the desired indicative plan for growth in supply (economic growth).

The model agent behavior «The state (regional government)» is described in the framework of the proposed strategy for the behavior of economic agents on a «Income» – «Expenses» – «Result» – «Strategy».

Incomes agent $In_3(t)$ in the current year formed at the expense incomes of the region $In_3^{br}(t)$, the federal budget $In_3^{bf}(t)$ and extra-budgetary funds $In_3^{obf}(t)$ in accordance with formula (1)

$$In_3(t) = In_3^{br}(t) + In_3^{bf}(t) + In_3^{obf}(t) \quad (1)$$

Regional budget $In_3^{br}(t)$ in the current year consists of the tax $In_t(t)$, non-tax $In_{nt}(t)$ revenues, intergovernmental transfers $In_{tr}(t)$, income from investments $Dep_3(t)$ and budgetary borrowings $Cr_3(t)$ by the formula (2):

$$In_3^{br}(t) = In_t(t) + In_{nt}(t) + In_{tr}(t) + Dep_3(t) + Cr_3(t) \quad (2)$$

The components $Dep_3(t)$, $Cr_3(t)$ are the input model parameters. Their values are formed in the modeling of the behavior agent «The financial sector». Demand for the state credit $Cr_3^{AD}(t)$ specified in the same formation process which controlled and carried out on the basis of information on the regional budget savings $S_3^{br}(t)$ under rule (3):

$$Cr_3^{AD}(t) = \begin{cases} c(t)In_t(t), & S_3^{br}(t) < 0, \\ 0, & S_3^{br}(t) > 0 \end{cases} \quad (3)$$

This flow $In_{tr}(t)$ is formed in the simulation of the federal budget. Coefficient calculation $c(t)$ is based on an iterative algorithm, as follows: in the case of formation deficit parameter $c(t)$ is corrected by a certain positive value to λ until the condition $S_3^{br}(t) \geq 0$ is reached. The initial value is $c(t) = 0$, value $\lambda = 0,001$ (0,1 %), the maximum number of iterations is 1000 steps.

The calculation of tax revenue $In_t(t)$ is from the formula (4):

$$In_t(t) = Tp_1^{br}(t) + Tp_4^{br}(t) + A(t) + T_2(t) + Tk(t) + T_3(t) \quad (4)$$

where $Tp_1^{br}(t)$, $Tp_4^{br}(t)$ – part of the income tax, "a collection of producers" and "financial sector", respectively, coming into the regional budget to the aspect ratio k_{br} defined as constants of the model; $A(t)$ – excises, $T_2(t)$ – required payments and contributions households; $Tk(t)$ – the property tax; $T_3(t)$ – other tax incomes. The components $Tp_1^{br}(t)$, $Tp_4^{br}(t)$, $T_2(t)$ are formed in modeling the agents' behavior «The aggregate producer», «Financials» and «Households» and are the input model parameters.

The excise volume $A(t)$ in the current year calculated as a certain percentage of the amount of indirect taxes $TI(t)$ to the aspect ratio $c_a(t)$, which in turn acts as a regulator agent «The state (state government)».

The calculation of property tax $Tk(t)$ in the current year t is commensurate with the rate of property tax $c_K(t)$ on the value of fixed assets $K(t)$. This parameter $c_K(t)$ acts as the regulator agent.

The volume of other tax income is determined by the equation (5):

$$T_3(t) = c_t(t)(Tp_1^{br}(t) + Tp_4^{br}(t) + A(t) + T_2(t) + Tk(t)), \quad (5)$$

where the coefficient $c_t(t)$ describes share of other tax income in the budget tax incomes and a scenic setting agent «The state (state government)».

The volume of non-tax income $In_{nt}(t)$ calculated in proportion to the volume of tax incomes $In_t(t)$ to the aspect ratio k_{nt} which determined the proportion of non-tax revenue in the tax revenues of the budget of the region, and serves as a model constant.

Incomes of the federal budget $In_3^{bf}(t)$ at the current time t are formed by the profit tax and indirect taxes by the formula (6):

$$In_3^{bf}(t) = Tp_1^{bf}(t) + Tp_4^{bf}(t) + TI^{bf}(t), \quad (6)$$

where $Tp_1^{bf}(t)$, $Tp_4^{bf}(t)$ – part of profit tax «The aggregate producer» and «The financial sector», respectively, receive to the federal budget with a coefficient of proportionality k_{bf} ; $TI^{bf}(t)$ – the value of indirect taxes receives to the federal budget. Herewith parameter k_{bf} is set as a model constant, and the component $TI^{bf}(t)$ is calculated according to the formula (7):

$$TI^{bf}(t) = TI(t) - A(t) \quad (7)$$

Extra budgetary funds $In_3^{obf}(t)$ formed by the flow of tax payments in the form of a consolidated social tax $TS(t)$. Their volume formed in the agent's behavior modeling «The aggregate producer».

In the current year t agent expenses $Out_3(t)$ are formed by the regional budget expenditures $Out_3^{br}(t)$, the federal budget $Out_3^{bf}(t)$ and extra budgetary funds $Out_3^{obf}(t)$. The calculation of the regional budget $Out_3^{br}(t)$ expenditures in the current year carries on by the formula (8):

$$Out_3^{br}(t) = a(t)In_3^{br}(t) + RCr_3(t), \quad (8)$$

where $a(t)$ – the proportion of the regional budget expenditures from its income, $RCr_3(t)$ repayment of government loans. The calculation of the value $a(t)$ made on the basis an iterative algorithm with the following scheme: parameter $a(t)$ is corrected by some positive value λ as long as the current supply volume of the end product $Y^{fac}(t)$ (factual GRP) will not match the size of the final product $Y^{plan}(t)$ (planned GRP), given the indicative plan. The initial value is $a(t) = 0$, value is $\lambda = 0,001$ (0,1 %), the maximum number of iterations of steps is 1000.

The expenditure $RCr_3(t)$ which directed to repayment of the loan in the t year is calculated by the formula (9):

$$RCr_3(t) = (1 + r_{cr}(t-1))Cr_3(t-1), \quad (9)$$

where $RCr_3(t-1)$ – the volume of attracted loans (budgetary of borrowing) in the previous period; $r_{cr}(t-1)$ – the bank rate on last year loans, which is an external controller agent «The financial market». At the initial time value of the parameter $RCr_3(t_0)$ set. The costs of loans repayment $RCr_3(t)$ are output the model coordinate and sent to the agent's behavior model «The financial sector».

The regional budget expenditures $Out_3^{br}(t)$ decomposed in the following directions: the expenditure on state consumption $C_3^{br}(t)$, budgetary investment $I_3(t)$, social transfers $Tr_3(t)$ and subsidies.

The expenditure on government consumption $C_3^{br}(t)$ is calculated according to (10):

$$C_3^{br}(t) = u_C(t)Out_3^{br}(t), \quad (10)$$

where $u_C(t)$ – the proportion of the state (regional) consumption in the regional budget expenditures. The coefficient $u_C(t)$ used as an endogenous model parameter whose value depends on the strategy of the agent.

The volume budget investment $I_3(t)$ in the current year t is determined according to (11):

$$I_3(t) = u_1(t)Out_3^{br}(t), \quad (11)$$

where $u_1(t)$ characterizes the share of budget investments in expenses of the regional budget and used as an endogenous parameter of the model, the value of which depends on the strategy of the agent.

Flows $C_3^{br}(t)$ and $I_3(t)$ are outputs and forwarded as input to the agent behavior model coordinate «The aggregate producer».

The volume of social transfers from the regional budget $Tr_3(t)$ in the t year calculated based on the share k_{tr} of social transfers in the regional budget expenditures. The flow $Tr_3(t)$ is the output and sent as input the coordinates into the agent behavior model «The households».

The federal expenditures $Out_3^{bf}(t)$ on the current time t consist of the costs of inter budget transfers $In_{tr}(t)$, and government (federal) consumption $C_3^{bf}(t)$.

The calculation of the inter-budget transfers $In_{tr}(t)$ and the government consumption $C_3^{bf}(t)$ is carried out in proportion to their shares in the federal budget revenues.

The expenditure budget funds $Out_3^{br}(t)$ in the current year are calculated based on the share k_{obf} of expenditure budget funds in their incomes.

Flows $C_3^{bf}(t)$, $Out_3^{br}(t)$ are output and routed to the agent behavior model «The aggregate producer».

The financial result of the agent "The state" at the current time t is the amount of savings $S_3(t)$. The balance of the state savings is described by equations (12):

$$\frac{dS_3(t)}{dt} = In_3(t) - Out_3(t). \quad (12)$$

Balance of the regional budget savings $S_3^{br}(t)$ is described by equations (13):

$$\frac{dS_3^{rb}(t)}{dt} = In_3^{rb}(t) - Out_3^{rb}(t). \quad (13)$$

The regional budget savings flow $S_3^{br}(t)$ is an output parameter of the model and sent as a stream of deposits in the model of agent behavior «The financial sector».

Similar scheme implemented to the complex of the other economic agents' behavior simulation model, which are then integrated into a single logical computing scheme in the simulation environment Matlab/Simulink.

The proposed model construction allows implementing the computational experiments on modeling and quantifying the effects of the implementation of various strategies for region social and economic development in the long term. As a model control parameter is given some regional development desired trend which specifies the indicative plan for one or more key parameters (Putilov, 2004). Under experimental conditions the indicative plan represented targets the dynamics of GRP given the long term.

On the basis of a given indicative plan model calculates for the main region macroeconomic indicators, providing specified rate of the economic growth. The long-term dynamics of the order of 15 basic parameters of socio-economic development of the region, in detailed form – about 40 indicators modeled in an aggregated form. The fragment of the simulation results by aggregate indicators of socio-economic development of the region (Republic of Bashkortostan) for the period up to 2020 for a given rate of economic growth is presented in Table 1.

Table 1. Estimate macro parameters long-term development of the Republic of Bashkortostan for the given parameters of economic growth, billion rubles.

Indicators	2005 year	2010 year	2015 year	2020 year
Gross Regional Product	409,3	520,3	671,3	859,8
Wages	131,0	174,7	225,4	288,7
Gross profit	164,6	198,9	256,6	328,7
Investments in fixed capital	64,5	82,0	105,8	135,6
Incomes of the population	338,4	523,3	633,7	800,2
Expenses of the population	293,9	438,7	524,2	668,4
Savings of the population	44,5	84,6	109,5	131,7
Budget revenues of the region	62,4	93,6	107,6	136,9
Federal budget revenues in the region	35,6	44,9	58,0	74,2
Revenues extra-budgetary funds	34,3	45,8	59,1	75,6
The volume of lending	40,3	39,6	76,9	98,2
Exports	135,1	93,6	161,1	206,3
Imports	81,9	93,6	120,8	154,8

In general, the results the proposed dynamic simulation model testing indicate a sufficient adequacy degree and forward-looking estimates accuracy that allows to use it as a practical tool for forecasting and decision analysis tasks in the planning of regional development in the medium and long term (Tsybatov, 2006).

3. Conclusion

The main results of the research:

- concept of the integrated region's simulation model is suggested which produces long-term development strategy taking into account the mutual influence of the objectives and results of the economic agents at the micro level and priorities of socio-economic development at the meso-level;
- model of the economic agent "government" is developed formalizing the logic of its behavior through the mechanism of public demand regulation for the gross product and the quest for supply given by indicative plan growth of the overall supply of the gross product;
- prognostic evaluation the basic macroeconomic indicators dynamics in the long term has been implemented for the Republic Bashkortostan.

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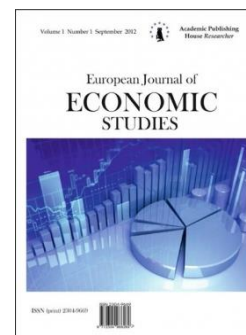
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The Leverage Effect and Information Flow Interpretation for Speculative Bitcoin Prices: Bitcoin Volume vs ARCH Effect

Chamil W. Senarathne ^{a, *}^a School of Economics, Wuhan University of Technology, China

Abstract

This paper examines the leverage effect and the information flow interpretation of heteroskedasticity – from a sample of daily Bitcoin return data from 3/19/2016 to 7/24/2018 – using the framework of Lamoureux and Lastrapes (1990). The results show that the Bitcoin return variance cannot be effectively explained by GARCH (1, 1), GJR-GARCH or EGARCH models given the stationarity of variance of return. The leverage effect is not observed by the estimate of EGARCH model. ARCH effect vanishes and the coefficient becomes highly statistically insignificant when the volume—as a mixing variable—is included in the conditional variance equation of IGARCH model. These findings suggest that the Bitcoin price changes are generated from an independent stochastic price increment process of which the increments are subordinated to stationary ARCH errors. As such, the Bitcoin can be classified as a class of speculative assets in the cryptocurrency exchange.

Keywords: bitcoin, information flow, EGARCH, stationary ARCH, volume.

1. Introduction

Until 2009, a little was known about carrying out a commercial transaction over the Internet (i.e. electronic communication network) without a trusted party. A virtual affiliated paper by Nakamoto, 2008 proposes an electronic payment system based on cryptographic proof which creates a highly efficient electronic marketplace for goods and services. The central idea of the paper has been further developed and implemented in January 2009. Since then, economic agents could carry out settlement of commercial transactions on this platform anonymously without going through financial intermediaries. Bitcoin as a virtual currency has grown significantly over the past few years and are quoted against a number of national currencies of the world. Equilibrium Bitcoin price changes quoted against national currencies of different countries may contain valuable information about the demand and supply. As presented in [Figure 1](#), USD Bitcoin price changes have been subject to high volatility and volume trades over the last three years. A. Urquhart finds that the price and volume of Bitcoin tend to cluster together—which implies that—the large errors are followed by large errors and vice versa ([Urquhart, 2017: 145](#)). These clusters of price changes are likely to persist over a long run ([Kurihara, Fukushima, 2018: 8](#)). This suggests that the variance of this market price (i.e. Bitcoin price) may change over time and can be predicted by the past forecast errors in the sense of R.F. Engle ([Engle, 1982: 987](#)).

* Corresponding author

E-mail addresses: chamil@whut.edu.cn (C.W. Senarathne)

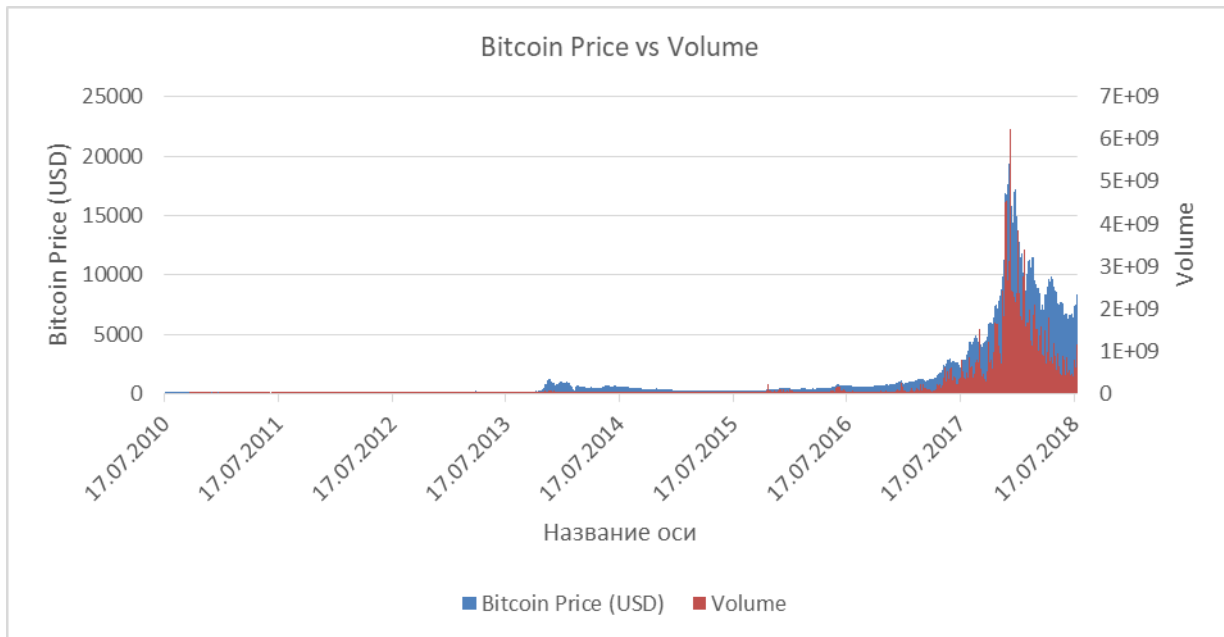


Fig. 1. Bitcoin Price vs. Volume

Trades carried out through electronic communication networks (ECN) offer a number of advantages. M. Balcilar examines the competitive advantages for an equity trader trading through ECNs and Nasdaq market makers, and find that it offers the advantages of anonymity and speed of execution (Barclay et al., 2003: 2637). They also find that the trades carried out through ECNs are more informed than trades carried out through market makers—traders often carry out trades through ECNs when trading volumes and return volatility are high*. The scholars such as M. Buchholz, L. Kristoufek, D. van Wijk, show that the Bitcoin price is determined by (i) supply-demand interactions, (ii) Bitcoin's attractiveness for investors and (iii) the global macroeconomic and financial developments, respectively (Buchholz et al., 2012: 312; Kristoufek, 2013: 3415; van Wijk, 2013). What factually drives the Bitcoin price has however been debated among recent scholars. Using Empirical Mode Decomposition techniques, M. Buchholz, M demonstrates that the price of Bitcoin is driven by the long-term fundamentals rather than the speculative behavior of investors (Bouoiyour., 2016: 843). Contrarily, Buchholz et al., 2012: 312; Grinberg, 2012: 159; Kristoufek, 2013: 3415; Ciaian et al., 2016: 1799; Glaser et al., 2014; Yermack, 2015:31; Baek, Elbeck, 2015: 30; Cheah, Fry 2015: 32; Bouoiyour, Selmi 2015: 449; Dyhrberg, 2016: 85; Baur et al., 2018: 177 show that the Bitcoin is a speculative asset[†] rather than a currency or long-term investment. Unlike other exchange instruments, the Bitcoin price is not determined by the underlying value of an asset (e.g. futures). Hence, it is difficult to ascertain as to how the Bitcoin price evolves over time.

On the other hand, a number of scholars attempt to understand the predictability of Bitcoin price. M. Balcilar employs a non-parametric causality-in-quantiles test to identify any causal relationship between trading volume, volatility and returns, and find that the volume is useful in forecasting return but not the volatility of Bitcoin (Balcilar et al., 2017: 64). They however detect nonlinearity and structural breaks in the return and volume. S. Nadarajah, J. Chu test Bitcoin returns for random walk behavior (under Efficient Market Hypothesis (EMH)) and find that it does not follow the rules of EMH (Nadarajah, Chu, 2017: 6)[‡]. A. Urquhart uses battery of tests to study the informational efficiency of Bitcoin market and finds that the market is a weak form inefficient (Urquhart, 2016: 80). However, A.F. Bariviera, A.K. Tiwari find the existence of efficient conditions in the Bitcoin market (Bariviera, 2017: 1; Tiwari, 2018: 106). P. Ciaian et al. find that the

* They also show a permanent price impact of trades in different venues and revelation of private information of traders.

[†] Some identify it as a speculative asset while others as a speculative bubble.

[‡] However, the power transformation tests reveal that the Bitcoin market is efficient.

attractiveness of Bitcoin for investors and users has a significant impact on the price discovery (Ciaian et al 2016: 1799).

Although there has been a voluminous literature on the efficiency and drivers of Bitcoin price, only a handful of scholars have studied about the speculative behavior of Bitcoin prices and volume using a common framework (e.g. Lamoureux, Lastrapes, 1990: 221)*. The objective of this paper is to examine the leverage effect in the Bitcoin market and the impact of information flow attached to Bitcoin trading volume[†] on equilibrium price formation in the speculative USD Bitcoin quotes, using the framework of C.G. Lamoureux, W.D. Lastrapes (Lamoureux, Lastrapes, 1990: 221). The paper is organized as follows. Section 2 provides the methodological framework. Section 3 describes data set including its empirical properties. Section 4 discusses the findings and section 5 provides the concluding remarks.

2. Theoretical Specification

Following Lamoureux, Lastrapes, 1990: 221; Sharma et al., 1996: 337; Choi et al 2012: 584 and Zhang et al., 2014:70 define δ_{mt} denote the m^{th} intraday equilibrium market price increment[‡] in day t summed up over a daily data horizon.

$$\varepsilon_t = \sum_{m=1}^{n_t} \delta_{mt} \quad (1)$$

Where n_t is a stochastic random variable (i.e. the mixing variable) which reflects the aggregate amount of new information arrival at the Bitcoin market. Assume that the new information arrival process is sequential rather than simultaneous[§] which could be expressed as;

$$n_t = \theta_0 + b(L)n_{t-1} + \Phi_t, \quad n_t \geq 0 \quad (2),$$

Where n_t is serially correlated and the evolution to the mixing variable is accounted for by the lag polynomial operator $b(L)$ of order q and Φ_t is a non-negative random error with zero mean and unit variance. In the sense of C.G. Lamoureux, W.D. Lastrapes assume that ε_t is subordinated to δ_m , so that $\Omega = E(\varepsilon_t^2 | n_t)$ where Ω is the persistence of conditional variance estimated by an EGARCH** model. Since the mixture model is invoked, $\Omega = \sigma^2 n_t$ and $\varepsilon_t | n_t \sim N(0, \sigma^2 n_t)$ (Lamoureux, Lastrapes, 1990: 221).

For the variance estimation in the sense of D.B. Nelson, the following specification which accounts for asymmetric effect of innovations on volatility is given (Nelson, 1991: 347),

$$R_t = \mu_{t-1} + \varepsilon_t, \quad (3)$$

$$\varepsilon_t | (\varepsilon_{t-1}, \varepsilon_{t-2}, \dots) \sim N(0, h_t), \quad (4)$$

$$\ln(\sigma_t^2) = \omega + \eta \ln(\sigma_{t-1}^2) + \gamma \frac{\varepsilon_{t-1}}{\sqrt{\sigma_{t-1}^2}} + \alpha \left[\frac{|\varepsilon_{t-1}|}{\sqrt{\sigma_{t-1}^2}} - \sqrt{\frac{2}{\pi}} \right] \quad (5)$$

where ω is a constant and σ_t^2 is the conditional variance at time t . η is the coefficient of prior period's volatility or the coefficient corresponds to ARCH and γ is the coefficient applicable to leverage effect in the Bitcoin market, if applicable. α is the coefficient of long-term volatility or the GARCH coefficient. The coefficient γ is expected to be negative and statistically significant, if a negative shock has a greater impact on volatility than the positive shocks of the same magnitude. Under the null hypothesis of Bitcoin market price change variance is characterized by the type of Asymmetric GARCH model (i.e. EGARCH) described above, the coefficient γ should be negative

* See e.g. Naik et al., 2018: 99. This paper extends their sampling period.

† Exchanges against USD.

‡ A random variable from a stationary price change process (see also Senarathne, Jayasinghe, 2017: 1; Senarathne, Jianguo 2018; Senarathne, 2018; Senarathne, 2019 for a similar preposition).

§ Such postulation is in line with Copeland, 1976: 1149 and Smirlock, Starks, 1988: 31.

** Exponential generalized autoregressive conditional heteroskedasticity.

and statistically significant and the sum of EGARCH coefficients (except intercept term) should be less than unity.

If the null hypothesis is accepted, the time dependence of Bitcoin volume in the rate of new information arrival at the market is tested by introducing the Bitcoin volume* V_{t-1} into the conditional variance equation (5) as,

$$\varepsilon_t \setminus (V_{t-1}, \varepsilon_{t-1}, \varepsilon_{t-2}, \dots) \sim N(0, h_t), \quad (6)$$

$$\ln(\sigma_t^2) = \omega + \eta \ln(\sigma_{t-1}^2) + \gamma \frac{\varepsilon_{t-1}}{\sqrt{\sigma_{t-1}^2}} + \alpha \left[\frac{|\varepsilon_{t-1}|}{\sqrt{\sigma_{t-1}^2}} - \sqrt{\frac{2}{\pi}} \right] + \lambda V_{t-1} \quad (7)$$

If the null hypothesis is rejected, the time dependence is tested by estimating an Integrated GARCH Model (mean specification and distributional assumptions of errors remain same) as;

$$\begin{aligned} a_t &= \sigma_t \varepsilon_t \\ \sigma_t^2 &= \varphi + \beta_1 \sigma_{t-1}^2 + (1 - \beta_1) a_{t-1}^2 \end{aligned} \quad (8)$$

Where, the condition $1 > \beta_1 > 0$ usually prevails and the impact of volatility shocks $\zeta_{t-i} = a_{t-i}^2 - \sigma_{t-i}^2$ for $i > 0$ on σ_t^2 is assumed to persist over time,[†] in which, the information set is relevant for the forecasts of the conditional variance.

The Bitcoin volume V_t is included in the variance equation (9) as,

$$\sigma_t^2 = \varphi + \beta_1 \sigma_{t-1}^2 + (1 - \beta_1) a_{t-1}^2 + \psi V_{t-1} \quad (10)$$

If volume is a manifestation of time dependence in the rate of new information arrival at the Bitcoin market, the coefficient β_1 of the IGARCH model* should be negligible when accounting for uneven flow of information arrival under serial correlation in the presence of ARCH in the IGARCH.

3. Data and Empirical Results

Daily USD Bitcoin price quotes (BTC-USD) and volume data are obtained from Yahoo webpage[§] covering a sampling period from 3/19/2016 to 7/24/2018. This period reflects the first and the largest clustering of price changes (See Figure 1) in the Bitcoin market. The descriptive statistics of the sample data are as follows.

* In order to eliminate possible simultaneity bias, lag volume is considered as Lamoureux, Lastrapes, 1990: 221 suggest.

[†] See Tsay, 2005.

[‡] Especially, the ARCH effect in the sense of Lamoureux, Lastrapes, 1990: 221

[§] Available at <https://finance.yahoo.com/quote/BTC-USD/history?p=BTC-USD>

Table 1. Empirical Description of the Sample Data

Variable	Mean	Median	Max.	Min.	JB	ADF	LM	Q (36)
R_t	0.0044	0.0034	0.2556	-0.1724	611.53	-29.26	47.13	22.45
V_t	4.6E+08	1.8E+08	6.3E+09	7.4E+06	6591.61	-1.84	NA	9837.1

Source: Author's estimation

Notes:

1. JB – Jarque–Bera test statistic for normality. Under null hypothesis for normality, critical value of χ^2 (2) distribution at 5 % significance level is 5.99.
2. ADF- Augmented Dickey–Fuller test statistic for stationarity of data for maximum 18 lags. Under null hypothesis for data having unit root, the critical value at 5 % significance level is -2.87.
3. LM is the ARCH LM test statistic for number of observations multiplied by the R-squared value for 3 lags. Under null hypothesis, critical value of χ^2 (3) distribution at 5 % significance level is 7.815 (OLS equation $R_t = c + \varepsilon_t$).
4. Q (20) is the Ljung–Box Q statistic for serial correlation upto 20 lags, in the margin debt values. Under the null hypothesis for no serial correlation, the critical value of $\chi^2(20)$ distribution at 5 % significance level is 31.41.
5. * Statistically significant at 5 % and *** Statistically significant at 10 %.

Bitcoin return and volume data are highly nonnormal as the test statistic exceeds the critical value of 5.99 under Jarque–Bera test. Although the volume series is nonstationary, the return distribution is stationary as null hypothesis of data having a unit root is rejected at 5 percent significance level under Augmented Dickey–Fuller test. ARCH effect in return data exists for 3 lags under ARCH-LM test. The test statistic exceeds the critical value of 7.815 at χ^2 (3) distribution at 5 percent significance level. However, Ljung–Box Q statistic for serial correlation upto 20 lags accepts the null hypothesis of no serial correlation as the test statistic is below the critical value of 31.41. However, volume series is highly serially correlated.

The coefficients ω , η , and α of EGARCH model are statistically significant at 5 percent significance level. However, the coefficient γ applicable to leverage effect is negative but highly statistically insignificant. As such, the leverage effect does not appear to have been presented in the Bitcoin market for the period considered. Leverage effect often observes in financial markets with diversifiable individual firms, where the information flow on both market factors (e.g. market risk premia (Bollerslev et al., 2011: 31) and firm-specific factors (e.g. financial leverage (Figlewski, Wang 2000) are presented. Index specific leverage effect can be observed when the volatility of individual stocks is greater than index volatility (Bouchaud et al., 2001)*. As such, the Bitcoin market is not characterized by such distinguishable features.

* Observed mostly in the case of investor panic.

Table 2. Maximum Likelihood Estimation of GARCH Models

EGRCH	ω	t-stat	η	t-stat	γ	t-stat	α	t-stat	$(\eta + \gamma + \alpha)$
$\ln(\sigma_t^2)$ without V_t	-0.5714*	-3.1391	0.3618*	3.6078	-0.0175	-0.2503	0.9506*	48.21	1.2948
IGARCH	β_1	t-stat	$(1 - \beta_1)$	t-stat	ψ	t-stat	NA	NA	$((\beta_1 + (1 - \beta_1)))$
σ_t^2 without V_t	0.0756*	3.4579	0.9244*	42.28	NA	NA	NA	NA	1.0000
σ_t^2 with V_t	0.0019	0.8317	0.9981*	444.97	6.6E-14*	2.9453	NA	NA	1.0000

Source: Author's estimation

Notes:

1. * Statistically significant at 5 % assuming returns are conditionally normally distributed. ** Statistically significant at 10 %.
2. The coefficients are estimated using the methods described by Bollerslev and Wooldridge (1992) for obtaining quasi-maximum likelihood (QML) covariances and robust standard errors.
3. Residual diagnostics of EGARCH (without volume)—Wald coefficient restriction results for null hypotheses $\eta = 0$ and $\alpha + \eta = 0$ are 13.01* (F-stat) and 235.71* (F-stat) respectively; Akaike info criterion (-3.79); Log likelihood (1633.32); Durbin-Watson stat (1.98); ARCH-LM test for Obs*R-squared (4.77) Ljung-Box Q statistic (25.12); Jarque-Bera test statistic (533.04*)
4. Residual diagnostics of IGARCH (without volume)—Wald coefficient restriction results for null hypotheses $\beta_1 = 0$ is 11.95* (F-stat); Akaike info criterion (-3.70); Log likelihood (1591.91); Durbin-Watson stat (1.98); ARCH-LM test for Obs*R-squared (17.34*) Ljung-Box Q statistic (24.12). Jarque-Bera test statistic (822.45*).

On the other hand, the coefficients η , γ and α of EGARCH – summing up to greater than one – is an indication of a stationary GARCH process* which may not fit the time series data well. The symmetric effect[†] of information arrival on volatility is therefore lumped up into the intercept term ω which is negative and statistically significant at 5 percent significance level. Note that the estimates of GARCH (1, 1) and GJR-GARCH model (not reported) produced results with same issue. Hence, the natural choice would be to consider an Integrated GARCH model which would suit the nature of the time series behavior of Bitcoin data. Both ARCH and GARCH terms as measured by β_1 and $(1 - \beta_1)$ are positive and statistically significant as estimated by equation (9) of the IGARCH model. However, the ARCH effect vanishes and becomes highly statistically insignificant at 5 percent significance level, when the volume is introduced into the conditional variance equation of IGARCH as in (10) above*. This provides strong evidence for the hypothesis that the ARCH residual variance is a reflection of time dependence in the rate of information arrival at the Bitcoin market. Thus, the behavior of Bitcoin price changes is speculative—as a standalone asset class[§] in the cryptocurrency market could exhibit—where the equilibrium price is determined by an independent stochastic price increment process under stationary ARCH-type of residual heteroskedasticity (see especially Nelson, 1990: 318).

4. Conclusion

The current literature is ambiguous as to whether the Bitcoin price change behavior is speculative and only a handful of scholars attempt to identify the mixed distribution properties of Bitcoin price changes. An examination on the type of heteroscedasticity in Bitcoin return data would help identify the price change behavior of Bitcoin market. The framework of C.G. Lamoureux, W.D. Lastrapes offers a more realistic methodology for resolving this puzzle (Lamoureux, Lastrapes, 1990: 221).

The leverage effect cannot be observed in the Bitcoin market during the sampling period** as estimated by the EGARCH model and, as such, the nature of data cannot be explained by an

* Which may well be characterized by a deterministic increment (i.e. a liner trend) in the conditional volatility (See Kontonikas, 2004: 525)

[†] Due to stationarity of variance.

* See Lamoureux, Lastrapes, 1990: 221).

[§] I.e. a single instrument.

** I.e. the period with the largest cluster

asymmetric GARCH process in the presence of stationarity of conditional variance. When interpreted with reference to information arrival hypothesis in the presence of ARCH*, Bitcoin price formation process could well be characterized by a stochastic process with independent increments, driven by the information content of past (lagged) volume data (i.e. the mixing variable)[†]. The form of persistence of new information arrival is therefore a reflection of stationary ARCH variance type of heteroscedasticity in the Bitcoin return data. These findings provide evidence for the argument that Bitcoin price changes are speculative as they are likely to be generated from stochastic and stationary variance process.

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* As estimated by an IGARCH model.

[†] I.e. conformity with mixture of distribution hypothesis of Clark (1973)

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Experience of Cultural Branding Development: Foreign and Russian Models

Evgeniya V. Vidishcheva ^{a, *}, Marina Gunare ^b

^a Sochi State University, Russian Federation

^b Baltic International Academy, Latvia

Abstract

Branding of countries, regions and cities is gradually becoming a mandatory part of the strategic development of territorial entities. This practice is popular in many countries all over the world. The development and implementation of brand strategies has allowed many territorial subjects to overcome the negative perception associated with the past, and reposition its brand. Cultural brand includes cultural and historical identity, painted in a national color, and is a common value – heritage. The aim of this study is to analyze and compare foreign and russian models of cultural branding.

Keywords: cultural branding, brand model, brand of territory.

1. Introduction

A characteristic feature of the post-industrial era is the development of service industry, and tourism as a kind of it. Today, when it is possible to fly to any part of the world in a few hours, the issue of increasing the recognition and attractiveness of the territories is most relevant. Territory branding is a strategy to improve the competitiveness of certain territories, aimed at different target groups of consumers: tourists, investors, highly skilled migrant workers. The study provides an overview of models for the formation of the cultural brand of Russian and foreign destinations as a tool to increase the attractiveness of the territories, the key features, similarities and distinctive features of these practices are highlighted.

2. Study Area

The works of many russian and foreign scientists are devoted to the study of territorial branding: A.V. Popov, I.B. Kondrashov, D.N. Zamyatin, S. Anholt, L. Cai (Popov, 2010; Kondrashov, 2017; Zamyatin, 2013; Anholt, 2005; Cai, 2002). Cultural brand of the territorial object are described by V.P. Gritsenko, Ni Czyaoczao and others (Gritsenko, 2016; Czyaoczao, 2015). However, there is a lack of works with the analysis of specific regional practices (Gadgiotti, 2008; Konecnik, 1999).

3. Discussion

Theoretical and practical activity aimed at identifying, forming and promoting (positioning) of the brand is called branding. Product, service, person, organization, event or territory can be the object of branding. In this study, the most interesting is the brand of the municipality – territory. Branding of territories (places, cities and countries) has become widespread in recent years.

* Corresponding author

E-mail addresses: evgenia-vv@mail.ru (E.V. Vidishcheva), marina.gunare@gmail.com (M. Gunare)

The main goal of branding strategies is to promote tangible and intangible resources of the territory as a result of the dissemination of information about its uniqueness to a wide audience of potential consumers. Kavaratzis, M. defines city branding as the direction of the marketing, directed on formation of emotional, mental and psychological associations, getting off the functional-rational aspects (Kavaratzis, 2004).

Analysis of thematic literature (Kondrashov, 2017; Popov, 2010; Cai, 2002) allows to identify the following functional tasks of the territorial brand:

- awareness of the world community about the territory, its possibilities;
- stimulation of interest (emotional attachment) to the territory and as a result – inflow of investments, capital and business;
- growing of economic contribution and importance of the territory within the region and the country;
- acceleration of economic development of the territory, including by reducing the payback period of local business;
- formation of social unity of the local population as a part of the brand, and strengthening the sense of pride for their region.

Most often, the development of the territorial brand is associated with the tourism and recreational sector, as all aspects of the place marketing are implemented in tourism. Tourism is a catalyst and accumulator of cultural and symbolic values, presenting them to the outside world. In this regard, there is a number of scientific papers covering the promotion, marketing and branding of tourist areas.

Cultural brand of the city or region is an effective tool for development, contributing to the competitiveness and attractiveness of the subject for tourists, investment and business. Also, the cultural brand contributes to the development of the image of the city as a favorable place to live, personal and professional growth, as it helps to develop the infrastructure of the territory and improves the quality of life of local population. The most striking examples of cultural brands are cities such as London, Paris, Athens and Budapest. St. Petersburg is widely known among Russian cities. China actively promotes the cultural brand at the level of the whole country.

London, the capital of Great Britain, has a strong cultural brand. The brand is built on a basis of combination of rich cultural history, developed art market and active business life. An active campaign aimed at strengthening and developing of the brand was launched in 2003. However, the history of the city's becoming a multicultural center began in the 17th century. The most active period of the city branding is the time of preparation for the Olympic Games in 2012. Modern Olympic games is not only a sport event, it is also a platform to demonstrate the destination. The UK used this opportunity to showcase its culture and heritage. The branding strategy was based on the achievement and development of three goals: economic benefits, image and hospitality. Tourism organizations, the local Olympic Committee, the Cabinet of Ministers, state bodies and institutions, the IOC and leading Olympic partners took part in the implementation of the strategic goals (The London, 2012). The government spent 400 thousand pounds for development of the city's brand. Also for its promotion and other marketing activities they were spent 125 million pounds (Stevens, 2012). The current strategy for the development of tourism in the UK is based on the image formed during the preparation and holding of the Olympic Games.

How much the post-Olympic image contributes to the growth of tourism in the capital of Great Britain at the moment can be estimated by the dynamics of the tourist flow. Table 1 presents data on the number of tourist arrivals and visits to key cultural sites of the capital since 2008. A set of data on key cultural sites such as British Museum, National Gallery, National History Museum, Tate Gallery, Science Museum, Victoria and Albert Museum was used as a basis for assessing of attendance. The basis for the sample is an Annual study of the attendance of attractions in the UK, conducted by the Administration of Greater London in 2015 (London Authority, 2015).

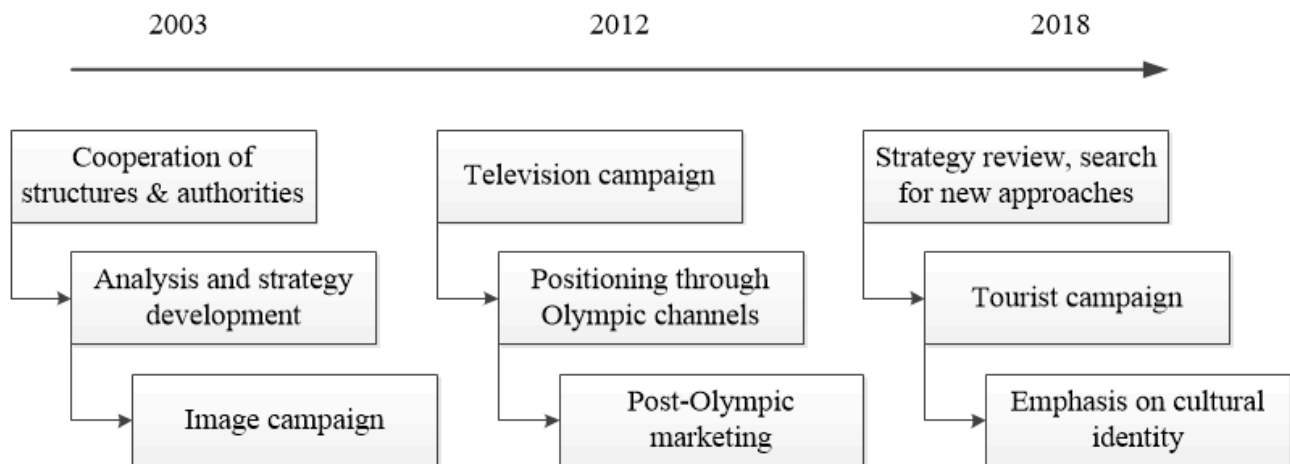
Table 1. Quantitative assessment of London's cultural brand attractiveness

Indicator	2009	2010	2012	2013	2015	2017
Number of arrivals, million	14.2	14.7	15.5	16.8	18.6	19.8
Annual growth, %	-4	4	1	8	7	4
Number of cultural attractions attendance, thousand/year.	28837.6	30363.8	32892.1	34620.9	34245.8	33472.5
Annual growth, %	3	5	8	5	-1	-2

Source: compiled by the author on the basis of [Museums and galleries monthly visits, 2018](#); [Number of international tourist, 2018](#)

Despite the uncertain dynamics of attendance of cultural sites in recent years, the annual number of visitors increased by almost 20 % or 5.5 million people in real terms in total during 8 years.

Schematically, the model of formation of the cultural brand of the British capital can be presented as follows ([Figure 1](#)). The brand of the British capital has faced several periods of serious decline in popularity. In the early 2000s, domestic political events, as well as British foreign policy, seriously weakened the brand's attractiveness. Later in 2011, street riots even brought into challenge the safety of the Olympic Games. In addition the brand symbols prepared before the Olympic Games had doubtful success by the public, but the differences were settled in a timely manner. The presence of a strong, constantly reinforced brand allows London to keep its position as a cultural center, despite the instability of a positive image. Responsibility for the formation and development of the city's brand is assigned to several organizations operating at the expense of municipal and government grants, or financed by private investors (Stevens, 2012).

**Fig. 1.** Stepwise model of London cultural brand formation and promotion

Source: compiled by the author

The next successful example of the cultural identity positioning is China. The priority of the development of the cultural identity of the People's Republic of China is emphasized at the governmental level. According to the Chinese President, the cultural brand is an instrument of the country's cultural "soft power" ([Czyżaczko, 2017](#)). The start of an active branding policy in relation to cultural identity of the Republic can be considered in 2006, when a specialized Institute – Center for brand research of Chinese cultural industries was established. The functions of this center include the development of cultural brands and updating methods of their promotion, evaluation of problems, optimization of strategic development. Today, cultural branding is an integral part of the state and regional development strategies of China. China's cultural brand is a comprehensive, umbrella brand that includes many sub-brands. According to the research of the

above-mentioned Center, the cultural industry of the Republic is represented by 373 cultural products in 2017 (Czyaoczao, Kuchinskaya, 2017).

Promotion of cultural brands in the country is carried out in two directions:

- Branding of objects of national cultural and historical heritage (promotion of existing age-old values with cultural content);
- Formation of innovative cultural brands (development of new brands using creativity and innovation in cultural identity).

There is no official information on the scale of state participation, including funding for branding activities. Therefore, we consider the dynamics of government spending on the development of Chinese culture, and compare it with the number of tourist arrivals in the Republic (Table 2).

Table 2. Comparison of government spending on the development of culture and dynamics of the tourist flow of China, 2011-2017

Indicator	2011	2012	2013	2014	2015	2016	2017
Spending for development of culture, billion Yuan	189	225.1	252	268.3	306.7	316.5	336.7
Annual growth, %	-	19	12	6	14	3	6
Number of tourist arrivals, thousand people	135423	132405	129077	128498	133820	138000	139480
Annual growth, %	1	-2	-3	0	4	3	1
Cost per 1 attracted tourists, million Yuan	1395.6	1700.1	1952.3	2088.0	2291.9	2293.5	2414.0

Source: compiled by the author on the basis of [China's revenue, 2017](#); [Public exposure, 2018](#)

The table shows that every year the government increases spending on culture. Since 2011, the cost has almost doubled, with an average annual increase about 10 %. At the same time, the dynamics of China's attendance for the period under review does not demonstrate stability, a steady growth is observed only over the past 3 years. However, despite some instability, the amount of tourist flows to the Republic increased by 7.5 million people for 7 years. A steady increase in costs does not provide adequate returns, the relative value of the cost of cultural development per 1 tourist attracted increases every year.

The Olympic games of 2008 became an important stage in the development of the modern brand of China. The government spent 3.2 trillion dollars on infrastructure modernization, construction of stadiums, marketing and other activities (Merinov, 2008). These costs, of course, contributed to the growth of tourist attractiveness of China, increased the level of service and profitability of the hospitality industry and related industries. The total contribution of tourism to China's GDP in 2017 is 9.5 %, with a direct contribution – 2.9 % (Travel and tourism, 2018).

The cultural brand of China is currently not included in the top ten famous, being at the stage of formation. But state cultural policy is one of the most active nowadays. Among the features of the cultural branding of China can be identified:

1. Umbrella type of cultural brand: the presence of many brands in the country;
2. Priority of development of this activity for the state;
3. The need to change country's image in the perception of the world community – re-branding: changing the image of a country with cheap labor to a state with a highly developed cultural identity;
4. The use of innovation in the development of cultural brands.

The world experience of the cultural brand of territorial subjects shows the presence of organizational and financial features, and common factors of brand formation in foreign countries.

It should be noted that the driver of growth for many countries was the holding of a large-scale international event – Olympic Games. Examples of this are not only China and the UK (London), but also Greece (Athens), France (Paris) and others.

Among the most famous cultural developed regions of the Russian Federation can be identified St. Petersburg, Kazan and Tula region. Also the experience of branding of the Myshkin city through the promotion of a unique Museum of Mouse is interesting. The result of marketing activities was a change in the traditional tourist route "Golden ring" – the Myshkin city was included.

St. Petersburg rightly bears the title of the cultural capital of Russia. The cultural heritage and potential of the Northern capital are a key resource for the socio-economic prosperity of the region. However, despite the diversity of cultural sites, experts note that still there is not united developed brand (image) of the city (Pashkus, 2016). According to the polls, the respondents do not have a General idea of the city, as there was no active branding policy with the positioning of specific symbols and forms. But it is worth noting that 99 % of Russian and 100 % of foreign respondents associate St. Petersburg with culture (Pashkus, 2016). The number of cultural and historical heritage sites of the city is about 4 thousand, many of which are monuments of Federal importance and are classified as UNESCO world heritage sites (The order, 2014).

The presence of such property and a high level of awareness of the global audience allows the region to be brand without major changes, by supporting and stimulating interest in existing facilities. The cultural brand of St. Petersburg can be attributed to the natural brands formed due to historical events. The basis of the branding policy of the city is to ensure harmonious development on the base of a unique cultural and historical heritage. In the framework of the program of development of regional culture there is a set of the following goals:

- Conservation and popularization of historical and cultural heritage of St. Petersburg;
- Development and support of professional art forms;
- Promotion of cultural image as the basis of competitive identity of the city;
- Preservation and stimulation of development of educational institutions in the sphere of culture.

The model of formation and promotion of the St. Petersburg brand is shown in Figure 2.

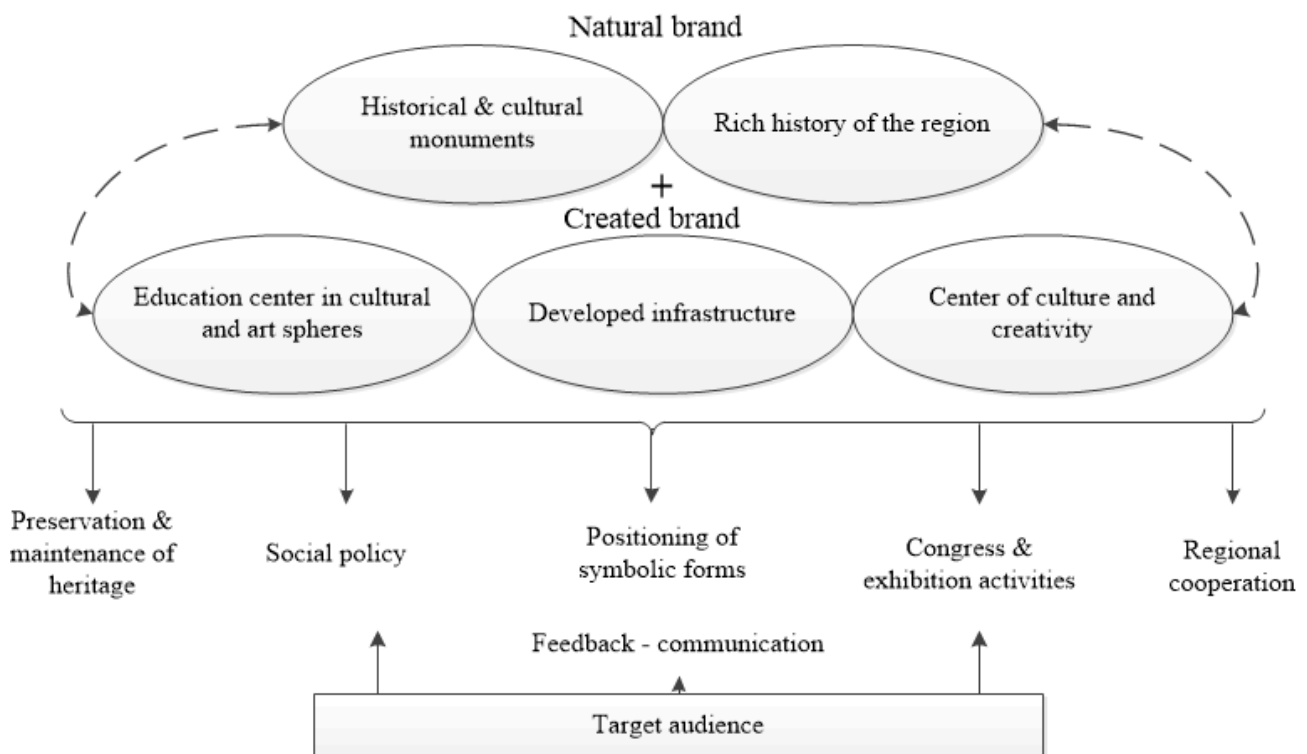


Fig. 2. Model of St. Petersburg cultural brand promotion
Source: complied by the author

Cultural uniqueness and diversity of St. Petersburg attracts millions of tourists every year, and does not require active positioning. The situation with the cultural identity of the Tula region is different. The territory of the region is rich by historical and cultural attractions, and can become a developed cultural center in a case of proper participation of public authorities. Today the number of tourists visiting the cultural heritage of the region annually is about half a million people. Among the key cultural objects – 4 museums of Federal importance – the State memorial and natural reserve "Museum-estate of L.N. Tolstoy "Yasnaya Polyana", the State military-historical and natural Museum-reserve "Kulikovo field", the State memorial historical-art and natural Museum-reserve of V.D. Polenova, Tula state Museum of weapons. The most valuable objects of cultural heritage of folks of the Russian Federation are "Yasnaya Polyana" and "Kulikovo field" (Resolution, 2013). The model of formation and development of the Tula region brand, demonstrating its functional objectives is shown in Figure 3.

A key element that distinguishes the model of Tula region from the model of St. Petersburg is the need to actively promote the cultural heritage of the region. Unfortunately, both Russian and foreign audiences have little knowledge of the cultural and historical richness of the Tula region. This is largely due to the lack of visual attractive forms that demonstrate the history of the region. Local government is actively solving this problem by implementing an policy on the formation and development of the tourist and recreational cluster "Tula phenomenon". The primary objective of the policy is to improve the cultural image of the territory.

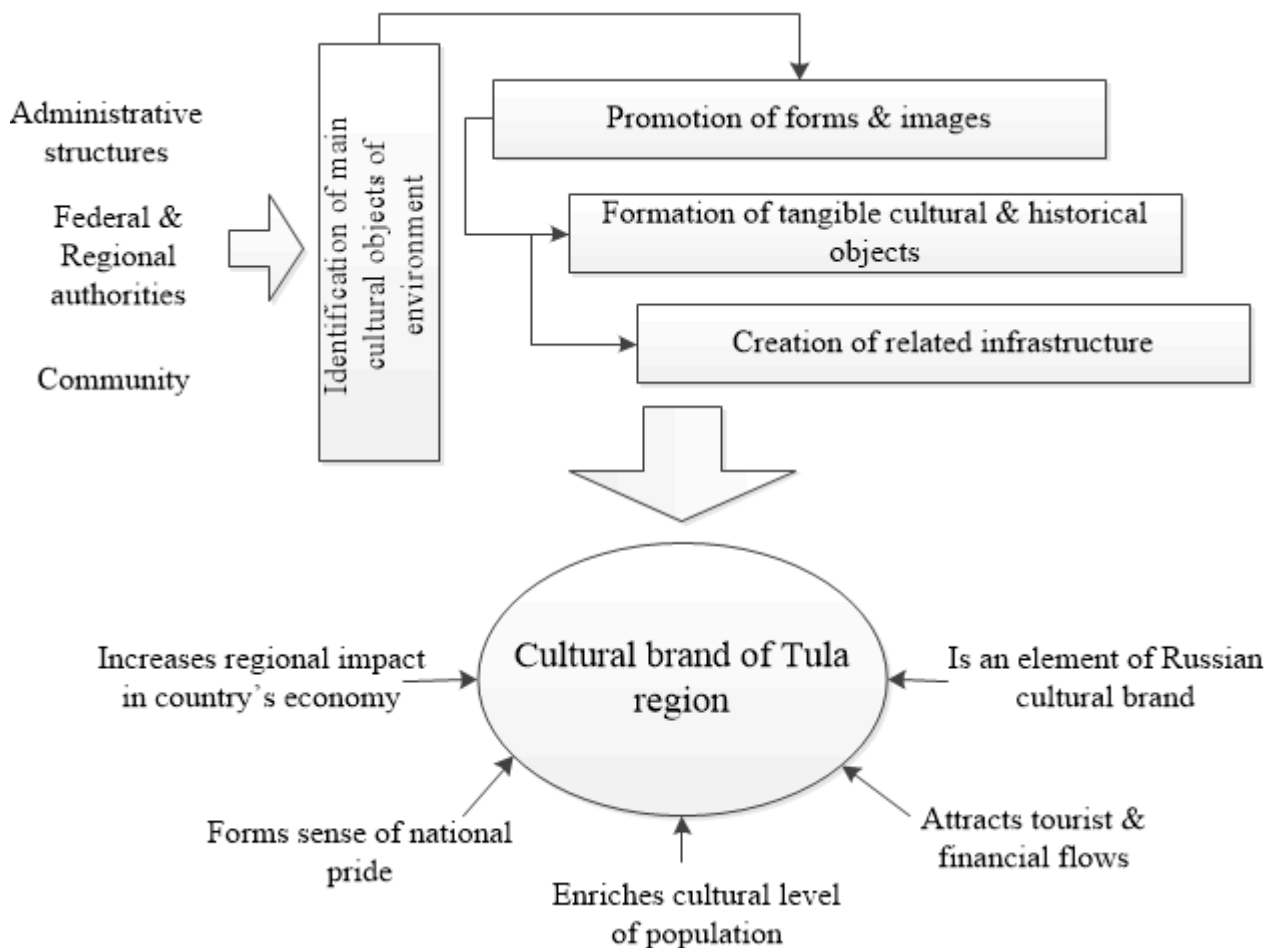


Fig. 3. Model of the formation of cultural brand of Tula region
Source: complied by the author

Table 3 presents a comparative description of the branding policy of the countries under consideration.

Table 3. Comparison of Russian and foreign models of cultural branding

	Great Britain	China	Saint-Petersburg	Tula region
Participants	Tourism firms, Cabinet of Ministers, government authorities, marketing agencies, IOC and partners	State authorities, Chinese cultural industries brand research Center	City government, Ministry of culture of the Russian Federation, numerous institutions of culture and art	The government of the Tula region, Ministry of culture, public organizations, local business
Priority methods	Television, mass media, participation and holding of Congress and exhibition events	Scientific approach, media, television	International exhibitions, Interregional cooperation, large-Scale events, Stimulation Development of culture	Mass media, Formation of material forms of cultural and historical heritage, Distribution of products with the city brand (gingerbread, samovar)
Source of financing	Public funds, grants, private investments	Public funds, grants, private investments	City budget, extra-budgetary funds, investments	Regional budget, extra-budgetary funds
Total cost	More than 500 thousand pounds	More than 300 billion yuan annually	24 896,8 million rubles annually	1 568.8 million rubles annually
Results	Tourist flow growth: +20 % for 8 years; The increase in attendance in cultural sites	Tourist flow growth: +4.3 % for 7 years; 4 times increase in income from tourism in 10 years	Tourist flow growth: +23 % (from 6.5 to 8 million people)	Tourist flow growth: +29,3 % (from 541 to 700 thousand people)

Source: compiled by the author

Domestic and foreign experience of cultural brand formation is extensive and diverse, but we can highlight the key features of the most successful practices:

- The integrated structure of the brand: the most successful cultural brands are based on no one cultural, historical or national value, but on a set of images;
- The presence of a well-known image and perception of the territorial entity long before the active branding policy;
- The most large-scale marketing activities are carried out during holding of the world level event in the region;
- Rich culture and history of the region, the heritage of which is often a common world heritage;
- Implementation of branding policy is a priority and is supported by government agencies at various levels;
- The lion's share of financial resources for promotion is allocated from the budget;
- The introduction of innovative technologies in the cultural and historical environment, the formation of a new, modern cultural product.

Among the most successful tools for the formation and development of cultural brands of cities, used in both foreign and Russian practice, are:

1. Strategic planning with the allocation of targets, allowing detailed monitoring of the concept implementation;
2. Involvement of specialized institutional entities, which have total responsibility for research, development and implementation of branding;
3. The use of electronic means of communication for the organization of feedback with the potential audience of the brand, and the presence of an effective mechanism for acceptance/rejection of recommendations and proposals;
4. Improving the perception of the territory by local residents through the modernization of infrastructure and development of the region;
5. Improving the overall level of culture of the region through the development of education, support for museums, library fund, as well as the restoration of existing objects of history and culture;
6. Interregional cooperation for positioning the country's cultural identity in the international arena;
7. Development and widespread distribution of symbols for the growth of recognition and popularity of the territorial brand.

4. Conclusion

The studied practice of cultural territory branding shows that there are organizational and financial characteristics and common factors of the formation of the brand of foreign countries. The driver of growth for many of them was the holding of a large-scale international event, namely the Olympic Games. Examples of this are not only China and the UK (London), but also Greece (Athens), France (Paris) and others.

As a result of the comparison of Russian and foreign practices, it can be concluded that branding activities can be of different strength, have both positive and negative effects and, most importantly, they are cumulative. Also the important part of maintaining the cultural brand of the municipality is funding for the development of culture. The study showed that with a variety of modern methods of brand promotion, there is no single win-win option; each territory requires a special approach. The most effective models include close communication between authorities, cultural organizations and community; constant feedback is a required condition for conflict and misunderstanding avoidance.

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The Financial Cycles and Their Importance to the Economy

Savvas Zachariadis ^{a, *}^a School of Economic and Regional Studies, University of Macedonia, Thessaloniki, Greece

Abstract

In this paper, we address the issue of the financial cycles and their influence to the function of the economy and stability. Financial cycles have mainly become an issue of interest among economists. Despite the fact that most research on cyclical trends in economy was associated with fluctuations in business cycles, the significance of the financial cycle has recently become more apparent, because of the dominance of the financial sector in the economy and also the emergence of financial crises. Recent researches imply that financial cycles are less frequent than the traditional business cycle and are related to credit and property prices. However, the existence of the financial cycles is evident and perhaps unavoidable to the economy, but what eventually matters is the extent of their fluctuations and their severe consequences during the contraction period. Considering ergo their importance, prudential policies need to be adopted to abate their sway in the stability of financial system and in real economy.

Keywords: financial cycles, business cycles, stability, fluctuations, financial sector.

1. Introduction

The notion of financial cycles has become increasingly important particularly during the last decades. Cyclical movements in the economy have been observed in the past and have been referred as business or economic cycles. Considering the significance of the financial sector to the economy in the recent era though, the examination of the financial cycles constitutes an alternative manner to comprehend various fluctuations in the economy. Following in this paper, we highlight the main literature and research in economic and financial cycles, and hence, we deduct the main conclusions concerning their implications to real economy and also some prudential prevention measures.

2. Discussion

2. Literature in Economic Cycles

We could easily notice that financial cycles compose a cyclical movement of the economy. In general, until the mid-20th century, research on cycles has been pivoted around business cycles or economic cycles. It is interested thus to briefly highlight some historically studies about cyclical movements.

J.S. Mill's (1826) approach to economic cycles sketched more the psychological factor of agents. He stated that speculation is sensitive to price increases and consequently any shock that will lead prices to rise constitutes a dynamic potential impetus to speculation and instability. French economist Juglar (1862) identified the relation between credit cycle and the economic cycle.

* Corresponding author

E-mail addresses: szachariadis@yahoo.gr (S. Zachariadis)

He insisted on the excessive speculative behavior and its contagion effects. When agents turned to more speculative but short term profitable choices, more capital is being accumulated for speculative reasons and not for sound investments. Therefore, the cycle is described as time of investments on machinery, raw materials, equipment and lasts from 7 to 11 years. Pigou (1927) argues that cycles depend upon agents' profit expectations, which may be real, psychological or monetary. Frisch (1933) suggested that economy has deviated from equilibrium because of time accumulation of exogenous shocks which induced cyclical moves of the economy. Burns and Mitchell (1946, p.3) noted that "a cycle consists of expansions occurring at about the same time in many economic activities, followed by similarly general recessions, contractions and revivals which merge into expansion phase of the next cycle". They deemed the duration of the cycles varies from one to twelve years and their frequency is recurrent.

Haberler (1946) attempted to explore the causes of cycles by examining most relative theories. He regarded as inadequate the notion of explaining cycles through a single view and therefore he conducted a detailed critical analysis of various theories of cyclical movements. He consolidated a table of causes and factors of the cycles with its booms and busts and he concluded that there is a need for integration of real and financial sector in economy theory in order to comprehend the nature of the cycles. Joseph Kitchin (1923) had observed a short term cycle which is linked to investment expenditures for inventory capital or consumer goods. He gathered that the business cycle depends on the production. Simon Kuznets (1930) identified a cycle of 16 to 18 years based on his studies on national income and capital formation data. Kuznets distinguished his cycle both in long and short run. He argued that in the short run cycle is linked with credit, whilst in the long run he incorporated the notion of demographic population. In the prosperity period, when employment and wages increase, family sizes will increase too, leading to a higher demand for housing and property. As soon as property prices reach the ceiling that will be the turning point of the cycle.

Russian economist Kondratieff (1926) studied a super duration cycle between 45 and 60 years. In his attempt to prove that capitalism will eventually fail he studied interest rates, foreign trade, prices, productivity from 1789 of the main Western capitalism countries*. His cycle from prosperity to recession repeated itself almost every 55 years but during this period, smaller phases of expansion/contraction were also observed. He stated that the component that launches new expansion is technology or a main innovation that will boost economy again. Unlike his initial intention, he found that capitalism offers the advantage of freedom to agents to innovate in the market providing thus to the economy a way out of depressions. Schumpeter, Fisher and Minsky, all of them with common perceptions on financial cycles, were influenced from Kondratieff framework.

Irving Fisher with his Debt Deflation Theory (1933) had described financial cycles to be contingent on the ability/inability of agents to pay off their debts. He recognized that debts could not always be paid and that market was seldom in equilibrium. Equilibrium was a stable period of the economy but once it departs away, then instability ensues. By enhancing debt rates that entails a serious threat of financial crises. If many debtors break down then a crisis emerges and what follows is a deflation spiral process which also means a fall in aggregate demand. That is when debt deflation begins. Therefore, he argued that financial cyclical movements trigger the booms and the busts of the economy.

Schumpeter (1939) stressed the significance of innovation in terms of entrepreneurship and technology, without their existence, the economy would hardly shift from its equilibrium. Entrepreneurs, agents in general, are in need to innovate driven by the highly global competitiveness and profit maximization. They require credit to finance such innovations by banks, eventually urging the economy to move from its equilibrium position. Schumpeter states that cycles are created only by innovation and the cycle "seems to be the statistical and historical form in which what is usually referred to as 'economic progress' comes about" (Schumpeter 1944, p. 7). Thus, there is a mobilization of resources and when new products make their appearance in the market, economy's equilibrium has been changed and it will returned to its original position, or perhaps to a different one, in the phase of recession. Schumpeter distinguishes four stages of a cycle: prosperity, recession, depression and recovery. In Schumpeter's view, cyclical fluctuations do

* He examined USA, Great Britain, Germany and France.

not necessarily have a negative meaning but they are being produced by innovation which is the driving force of economic growth.

Likewise Schumpeter, Keynes, and Fisher, Minsky also saw cycles as the outcome of an endogenously process in an inherently unstable capitalist economic system, where self-interest behavior prevails in complicated financial relations. He argued that “in order to understand the short-term dynamics of business cycles and the longer-term evolution of economies it is necessary to understand the financing relations that govern, and how the profit seeking activities of businessmen, and portfolio managers lead to the evolution of financial structures” (Minsky 1993, p.106). According to Minsky (1992) the financial system is unstable and becomes even more fragile in prosperity times. There are units of hedge, speculative, Ponzi where the financial instability hypothesis implies that the economy could easily shift from hedge to speculative in times of euphoria. This phenomenon takes place in forms of risk aversion, reductions in margins of safety since profits are created, as long as short term credit is easily accessed and there is a strong incentive of refinancing interest and positions, rather than the option of getting rid of the debt burden. Hence, the financial system swings and shifts from stability to instability. When highly indebted firms and agents cannot longer meet their payments’ obligations and break down, contagion effects are applied, triggering thus the recession.

Following Fischer on his debt-deflation theory, Schumpeter and Minsky with his financial instability hypothesis, we focused more on financial cycles or credit/debit cycles where the main idea is the enhanced power of banks and other financial institutions to cyclical movements. According to Minsky (1986) financial instability and cycles are congenital in a capitalist economy. However, he recognized that cycles are not simply fluctuations within a fixed economic structure, but represent both a cause and consequence of changes to that structure. As long as financial agents’ expectations become overoptimistic and the financial system constraints smooth, then credit and investment expand. The outcome is the fragility of the financial system to emerge until bubbles and debt rates reach to their higher levels and then crisis ensues.

The Financial Cycle

The concept of financial cycle constitutes a matter of debate by economists who were not included in the mainstream economic theory (e.g. Minsky 1982 and Kindleberger 2000). A definition of financial cycle is closely related to the well-known connotation of the “procyclicality” of the financial system (e.g. [Borio et al., 2001](#); [Danielsson et al., 2004](#); [Brunnermeier et al., 2009](#); [Adrian, Shin 2010](#)). The financial cycle is less frequent than the traditional business cycle, with an approximate duration of 16 years with much larger amplitude, by contrast to business cycles lasting from 1 to 8 years ([Borio et al., 2001](#)). However, the length of the financial cycle could never be accurately reckoned, since it depends upon government’s policy regulations. Other factors need to be taken into account are the financial, monetary and real-economy regimes ([Borio, Lowe 2002](#)). Financial cycles encapsulate the booms and the busts, prosperity and crisis, where one precedes the other. In other words, it is argued that the main cause of crisis is the previous prospered period ([Borio et al., 2001](#)). The most common description of the financial cycle is in terms of credit and property prices, where the top of the financial cycle is closely associated with financial crises ([Drehmann et al., 2012](#)).

Contemporary Research in Financial Cycles

The aspect of financial cycle has been an interesting way in our attempt to comprehend financial fluctuations. Claessens et al. (2011) examined the financial cycle and their relation with business cycles. They used a database of 44 countries for the period 1960-2007. They reached to the conclusion that recessions linked with financial distortions, in particular in housing market which are more severe and last longer than other recessions. On the other hand, they found that growth is augmented mostly with a rise in credit supply and also in the house prices. In the upswing phase of the cycle, credit is available and relatively in attractive rates. As a result, households are encouraged to borrow, driving up property and collateral prices and eventually tax revenues. In the downward phase though, when credit is expensive and unaffordable house prices are being reduced, past loans are not easily met, then there is a contraction in the construction sector and all the relative business sectors, leading eventually to a fall in consumption, investment, employment and tax revenues. What we remark is a fall in aggregate demand and a recession. All the above factors

depict a positive correlation between the financial and business cycles, entailing fluctuations in the GDP. Regarding the global dimension of the financial cycles, they stressed the fact that cross-country bank lending is a major contributor to the rise in domestic credit.

Drehmann et al. (2012) studied seven advanced economies over the period 1960-2011. They deduced that financial cycle lasts between 15 and 20 years, much longer than the traditional business cycle that lasts approximately 8 years. As long as the cycle reaches the top, it verges to concur with financial turbulences periods, due to households and firms inability to pay off their debts. Another interesting finding was that some economically dominant countries lead the financial cycle in global level, which frequently coincides among other countries. Stremmel (2015) suggests that an efficient measure of the financial cycle should include the credit-to GDP ratio, credit growth and house prices. Runstler and Vekkle (2016) have also gathered at same results, noting the significance in cycles in credit and house prices. They mostly gave emphasis in Germany showing again that the financial cycle has longer duration and larger amplitude in comparison to the business cycle. Kalemli-Ozcan et al. (2013) pointed out the role of international factor income. They suggested that in cross-country transactions the international income contributes more to financial shocks during the crisis, rather than in risk sharing between countries.

More recently, Borio et al. (2016) endeavored to discover the relation between financial cycle and public debt. They include credit and house prices and exclude equity prices and aggregate asset prices, which usually tend to move in line with credit and asset prices*. They commenced by gathering the empirical evidence that linked financial crises with a large increase in public debt. According to the research, fiscal expansion is inevitable during the busts of the cycles for a numerous of reasons, such as the sustainability of the aggregate demand and employment, the bailout rescue programs for problematic financial institutions and so on. As a result the paper proffers the calculation of a finance-neutral gap in order for a country to assess accordingly its proper financial position in the financial cycle.

As far as the European Union is concern, Alcidi (2017) conducted an analysis about financial cycles within EU countries over a period of 41 years and infers that each cycle lasted about 15 to 17 years. Also, the main financial cycle coincides almost perfectly with the introduction of the euro. The ascending part matches with the euro adoption in 1999 and the descending approximately in 2016. Member states highlight vast differences in the size of their financial cycle and this is a characteristic of the periods both before and after the introduction of the euro. Alcidi advocates for the role of fiscal policy at a more central level despite the insistence of conventional policies on monetary action. The bottom line of the analysis is that financial cycle fluctuated more before the introduction of the euro than after, adding an argument that within monetary union the difference between countries in terms of the financial cycles' features is less.

3. Conclusion

The debate of the financial cycle has been emerged since the second half of the 20th century and in particular by non-mainstream economists. However, the outburst of financial crises gave ground for further analysis. The key issue is not the acceptance or rejection of the presence of financial cycles in our economy. Certainly, financial cycles can be traced and they do exist. They include ups and downs and also, are related to sovereign debt. The size of their expansion/contraction side, notwithstanding, is hard to be predicted and thus the implications that might have in the real economy.

Furthermore, large financial cycles do not coincide with financial stability. A world financial crisis is likely to be emerged from the downfall of a cycle in a dominant world economy. Most research suggests that fluctuations in financial cycles influence aggregate demand, employment, tax revenues and GDP growth. A matter of great consideration though is the limitation of the size of the financial cycle to a minimum point at which no significant effect in real economy could be spread. The upshot is that financial cycles, apart from public debt, financial turbulences and distortions, are associated with financial instability even at the global level and that is in our opinion the most unquiet issue.

* Other important variables that could provide supplementary insights in terms of risk perception and distortions are the spreads of credit, default rates, but their available data is not adequate for a empirically sufficient time period

The purpose to examine the financial cycle is significant, so as to identify them, in order to propose necessary policies to prevent the cycle from excessive fluctuations, causing serious distortions to the financial stability and hence to real economy. Financial cycles cannot be totally avoided, but the important challenge remains in reducing the probability of their large oscillations. Thus, prudential macroeconomic policies at national level are required. Indeed, in cases of prolonged financial instability, national fiscal policy is inadequate and a centralized fiscal insurance mechanism delegated with the power to transfer the necessary resources is essential. As Borio (2012) stressed the importance of credit and property prices, we could empirically notice that when there is an increase in credit*, there would be also a rise in property and asset prices and overall an increment in private sector credit. Thus, collateral values rise in line with borrowing, tax revenues increase as well and generally the economy grows. Nevertheless, is this growth real and long lasting?

From EU lesson, we infer that the financial cycle could upwardly expand through cross-border bank lending at national level for countries exposed to some financial integration. However, this financial integration will accordingly start to decompose during the bust phase of the cycle since international credit will start to withdraw. Therefore, there is a positive correlation between financial integration and financial cycle. However, in European Union, the introduction of the euro seems to have moderated the fluctuations of financial cycles that member states had experienced before the common currency.

Finally, the function of the financial sector is well known. It serves to provide the required liquidity to finance investment and buying on real assets and commodities. Industries, entrepreneurs are seeking to finance their activity and all of them, including financial institutions, target in future profits. Speaking on numbers, the majority of capital inflows is managed and often generated by financial institutions†. The traditional examinations of economic cycles had been concentrated on business cycles but it seems that in the current era, cyclical movements in economy have been mostly related to financial cycles. It is evident that the financial sector has already prevailed on other branches of the economy such as agricultural, industrial, commerce, trade, services, in terms of capital accumulation. Hence, it could be contended that in the 21st century the circular flow of the economy depends on the financial sector. Consequently, the stability and the proper function of the financial system are essential. There are financial innovations that accelerate the speed of financial cycle and increase the size of the financial sector. It could be argued that an international agency to assess, regulate, test the implications of financial innovations is necessary considering the dominance of the financial sector and most of all the consequences financial crises have over the lives of millions people. Besides, those agencies of authorization do exist in other sectors‡, why then the financial sector is excluded? Observing all the implications, we therefore see that global financial stability is not simple an anchor of refraining from having distortions and crises but also a perquisite of peoples' lives. It is a right of people.

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* By credit we mean the provision of credit in all the possible sectors, but mainly we concentrate on mortgage credit since it's the most commonly granted by institutions.

† By the term financial institutions we not only mean the concept banks but also the markets of stocks, bonds, equities, derivatives and all other financial products offered not only by banks, but from any kind money managers.

‡ pharmaceuticals, energy, aeronautics, nuclear, chemical etc.

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