Convergence analysis of household expenditures using the absolute β-convergence method

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Abstract

Background: The paper examines the convergence of household expenditures, in terms of a possible usage of the standardized, rather than consumer-tailored marketing, mainly on a regional level. **Objectives:** The main goal of this research is to study the existence of consumption expenditure convergence in the EU-27 countries, in the period between 2000 and 2007. **Methods/Approach:** The analysis used the absolute β-convergence method, in order to investigate the existence of a negative correlation between the growth over time in the overall consumption expenditure in EU member-countries for each individual product and service category and the initial expenditure level. **Results:** According to the obtained results, in the period between 2000 and 2007, the EU-27 countries reached a high level of consumer expenditure convergence, which provides a basis for developing a regional concept of the standardized international marketing for these countries' markets. **Conclusions:** The results provide an empirical contribution to claims on consumer convergence in the countries included into economic integrations. Also, the obtained results can be used to create a basis for defining and applying the regional marketing concept for companies focusing on the EU-27 countries' market.

Introduction

One of the key areas of the globalization process that significantly, almost dominantly determines the choice of concepts and strategies of international market entry is the process of consumer needs convergence. Convergence is one of driving forces of the globalization process on the macroeconomic level, which generates the possibility of a comprehensive change in the international marketing paradigm, in terms of the possibility to use the standardized rather than customer adapted marketing. This is the fundamental problem that initiated this research study.

The debate on convergence and divergence of consumer needs, and consumer behavior in the global market conditions has not stopped since the early 1980s, when Levitt expressed his views on consumer homogenization and their preferences for standard products of high quality and low prices (Levitt, 1983). In globalization conditions, convergence of consumer needs leads to the homogenization of their needs across the world, with unified preferences in terms of quality and prices. Such a convergence allows mass production of quality standard products and application of highly standardized global marketing. Such a convergence effects are visible in customer's benefits through higher value they receive for their money.

A great number of studies dealt with the convergence process research, providing empirical evidence of the convergence existence, or the existence of the opposite process in consumer behavior, i.e. consumer divergence (let us list some of them: De Simone, Ercolano, Gaeta, 2010; Kerem et al., 2008; Regmi and Unnevehr, 2005; Ševela, 2004; Young, Higgins and Levy, 2004; De Mooij, 2003; Wolf, 2002; Dowrick and DeLong, 2001; Pegels and Song, 2000; Nixon, 1999; Boyle and McCarthy, 1999).

The EU member countries are subjects of a great number of comparative studies from the very beginning of the EU association and the acceding processes. These comparative studies are trying to point out the short run and the long run progresses in mutual convergence. There are purely European convergence drivers, which can be categorized into three groups (Halliburton and Hünerberg, 1993, pp. 77-93): (1) economic convergence drivers (drivers on the supply side, drivers of the demand side); (2) political and legal convergence drivers (adoption of common EU regulations, establishing common policies at the EU level); and (3) cultural convergence drivers (building of the new identity for Europe and its citizens, approach to European tradition and values, sensitivity to nature and environment sustainability, etc.).

The established homogeneity in market and product characteristics within the European Union-27 creates pre-requisites for the use of "European marketing" as a regional, standardized marketing concept. European Union is actually the best example where regional distinctive features could be the basis for the development of regional marketing concept (Domazet et al, 2001, pp. 102-105).

In marketing literature, when dealing with the issue of convergence, there is a research deficit in terms of evaluating convergence within the existing economic integrations, continuous monitoring of the convergence process, theoretical and empirical implications of convergence, as well as simultaneous research into consumption within a few different product and service categories. Past studies were mainly based on partial researches on consumption expenditure convergence, and focused on individual product and service categories, individual countries, as well as on resolving the eternal dilemma of standardization vs. adaptation. Theoreticians' opinions which are mostly based on empirical evidence chronologically range from the view that European regional concept of international marketing is a total fallacy, through gradual adoption of this concept as possible, to the full respect and conciliation with the fact that this concept is actually becoming reality.

The primary motive for conducting this study is an attempt to analyze, for the first time, and in a unique and comprehensive way, convergence within all the EU-27 member-countries, and for all product and service categories. Thus, this paper is a research into household expenditure convergence in the European Union countries (27 countries). On this level, the primary goal of the research is to provide the description, explanation and synthesis of theoretical bases, to present relevant knowledge of the convergence process, and to study the household expenditure convergence existence in the EU-27 countries in the period between 2000 and 2007.

Theoretical context of research

Globalization has become a very interesting phenomenon since it became clear that the world changing because of it, in terms of increasing economic, financial, social, cultural, political and geographic dependence of national economies (Thoumrungroje, 2004, p. 2). Today, practically everybody is "hit" by the globalization process. Globalization prompts people to change their way of life, companies to change ways of doing business, and forces national economies to set up a new national policies. Through the described changes, globalization actually leads to the world without borders (Eden and Lenway, 2001, pp. 387-388; Ohmae, 1989, pp. 152-155).

In the research context, the most acceptable definition of globalization is provided by Knight, who views globalization as a growing mutual dependence between national economies, including consumers, producers, suppliers, and different countries' governments. It allows companies to sell their products and services to consumers beyond their country's borders. Globalization is literally removing borders for potential buyers at a global level. It reflects companies' trend to sell and distribute products and brands in many countries across the world (Knight, 2000, pp. 12-13).

Special attention will still be paid to convergence as a globalization driving force, its analysis and implications and possibilities it opens in international marketing.

In the context of convergence, Levitt (1983) was actually not the first one who discussed it. As early as 1962, Marshall McLuhan introduced the notion of Global Village, and, as a result, many other authors started believing that the new global media and an increased number of travels would lead to the convergence of values, lifestyles and consumptions.

Thus, convergence signifies the process of creating a new global consumer, whereby consumer needs and priorities are equal across the world, consumer preferences are identical (they all seek value in products and services), i.e. they value their features that are contributing to the creation of value. Naturally, convergence of consumer needs is a long-term process and is materialized as a tendency (Domazet et al., 2001, p. 59). Owing to progress in communication and transport, consumers all over the world converge in their consuming patterns. It is estimated that, out of six billion people on the planet, consumptions of five billion people is at the level of developed countries of the Western Europe, Japan or the USA (Lee, Carter, 2005, p. 25).

The absolute convergence is unattainable, and even the globalization based on universal consumer needs requires acting according to the "think globally, act locally" principle. That means that there will always remain a part of consumer needs that will be individualized and differentiated by the culture, economic and ethnic specifics. These specifics will be less expressed in products, as a physical value, and far more in services and symbolic features of products based on consumers' perception formed under a strong influence of the culture they live in (Domazet et al., 2001, p. 59). In this context, it is extremely important to understand the value of national cultures and their effect on consumer behavior. It is therefore important for international marketers to understand consumers' personal values and adopt their norms of behavior if they want to satisfy them in an appropriate way. At the same time, marketers must look for segments that share the way of thinking, which also results in the similar way of thinking in case of marketers' offer and similar consumer behavior. Such segments may also exist at a cross-national level (Hollensen, 2004, p. 212).

Despite doubts in convergence of cultures across countries, which emerges as a result of globalization, we believe that global trends lead to the increased heterogeneity of consumers' views and behavior within countries, but, at the same time, they lead to the increased homogeneity between countries (Agarwal, Malhotra, Bolton, 2010, p. 21). In this respect, individual countries used to be the most obvious variable for segmentation; however, as better communication systems keep "destroying" national borders, other dimensions increasingly gain importance. As global markets keep homogenizing and diversifying simultaneously, best companies will avoid the trap of focusing on countries as the primary segmentation variable. Other variables are frequently far more important – e.g. climate conditions, language, age, income or media habits (MTV can serve as a good example) (Cateora, Gilly, Graham, 2009, pp. 308-309).

It is important to state that globalization is to a great extent triggered by regional integrations. In this context, one should also keep in mind the significant regionalization effects, which contribute to the convergence of consumer needs within the European Union. European Union is not a perfectly homogenous market. Differences in economic, social and cultural aspects and consumer preferences will continue to exist. However, for companies to make use of benefits resulting from the association there must be some homogenous segments across the member countries with similar needs, preferences and demand patterns that companies can "target" by means of the "Pan-European" approach to marketing (Ganesh, 1998, p. 35).

"Pan-European" marketing literally means viewing Europe as a geographically isolated segment, which offers a possibility of treating Europe in a unique way, though differently from other global regions. Factors that support the global/regional view can be reduced to two complementary arguments: convergence of consumer needs (global, or "Euro-consumers") and global effectiveness (global, or "Euro-product"). Still, clusters of country group segments, and far more often of all the EU countries have more in common than the "pan-European" consumers. The crucial question is to what extent the consumers' demand really converges across Europe, or whether it is more significant to persevere in national or in local requests. A universal answer is not possible. "Think globally, act locally" is a banal solution, it all depends on the product, market context, competition, and the point in time (Halliburton and Hünerberg, 1993, pp. 81-82).

Having in mind the above-said, studies into the phenomenon of convergence, i.e. the uniformization of consumer needs within the European Union and consumer homogenization, or the process of the creation of homogenous cross-national consumer segments, we must say that it has a special significance in the course of the development of integration processes within the EU. Actually, there is a need for the continuous collection of information on this phenomenon, which has both the theoretical significance and certainly strategic implications for the area of companies' international-global marketing and business.

Methodology

The basic goal of the paper is to research the existence of household expenditure convergence in the European Union countries (27 countries) in the period between 2000 and 2007. It is a period when many member-countries were undergoing major transitions and reforms on their road to the European Union. In the observed period, ten countries that became full EU members in 2004 could feel membership effects to a greater extent, while Bulgaria and Romania were EU members only for a year, i.e. during 2007.

The main research hypothesis is that in the period between 2000 and 2007 the EU-27 countries achieved a high level of consumer needs convergence.

The main hypothesis is accompanied by two sub-hypotheses:

SH1: The consumer convergence level is different for individual consumer categories, which indicates different possibilities for creating the international marketing concept within individual consumer categories.

SH2: Based on the process of convergence of consumer consumption and a process of intensive member-countries' integration, the European Union is an appropriate foundation for using the standardized Pan-European marketing concept.

The primary focus of the research is the analysis of data on national expenditure levels, using variables on household expenditure in the EU member-countries expressed in PPS per capita (PPS is a technical term used by Eurostat for the common currency which expresses national accounts adjusted for the price difference level using PPP), over a eight-year period (2000-2007).

The empirical data obtained during the research was analyzed using the absolute β –convergence. To test the absolute β convergence hypothesis we followed De Simone et al. (2010) and performed a cross-section Ordinary Least Square (OLS) regression for each variable, in order to estimate the parameters of the following equation.

Using the fore-mentioned analysis, we checked for the existence of negative correlation between the growth over time in the overall consumption expenditure in EU member-countries for each individual product and service category and the initial expenditure level.

$$\frac{1}{T} \ln\left(\frac{Y_{it}}{Y_{i0}}\right) = \alpha + \beta \ln Y_{i0} + \varepsilon_i \tag{1}$$

where:

Y_{it}= household expenditure in the country i in the year 2007;
Y_{i0}= household expenditure in country i in the year 2000;
T= total time interval (8 years);
a = constant;
εi = error;
ln indicates, as usual, the natural logarithm.

The left side of equation represents the average annual growth rate of expenditures on the consumption of a given product or service category in country i, and total time interval T (8 years), which is also the dependent variable in the simple linear regression model. Parameter β shows for how many units the dependent variable changes if the independent variable changes by one unit. According to testing β-convergence, the existence of convergence requires parameter β to be lower than 0.

Research methods of collecting data for this paper consist of using secondary data pertaining to the collection, aggregation and processing of the available data on the final household consumption for different product and service categories, within EU-27. Data for the convergence analysis was taken from the European Union statistics office database – EUROSTAT, for twelve groups of products and services according to the existing COICOP (Classification of Individual Consumption by Purpose) classification.

The expected contribution is reflected in providing the empirical evidence on the convergence versus divergence debate, in proving the economic integrations' effects on the development and consumption convergence, and in creating a framework for the use of regional international marketing concept for EU-27 markets.

Results

From the very beginning, the basic goal of the paper was a detailed analysis of consumer convergence in different product and service categories. In this context, for each of the product and service category, the appropriate methodology of cross-section Ordinary Least Square (OLS) regression was further applied.

In Table 1, the results of the analysis obtained by using the absolute β convergence are shown. Now, we can state that the convergence of consumer consumption, expressed through household expenditure does exist, since, for all the analyzed categories, values of R2 are acceptable, and β coefficient is negative and statistically significant.

Convergence of household expenditure by product and service types, analyzed by using the absolute β convergence, reveals different results, given that the amount of the β coefficient is different for the different product and service categories (from -0.025 for household expenditures on restaurants and hotels, to -0.061 for household expenditures on health).

Table 1
Absolute Beta Convergence (OLS Regression Results)

Dependent variable*** Independent variables	CAF	HOUS	FURN	HEALTH	TRAN	COMM	RAC	RAH	MGAS
CONSTANT	0.3419*** (0.077)	0.3107*** (0.0498)	0.4102*** (0.0368)	0.4021*** (0.0649)	0.4326*** (0.0604)	0.3659*** (0.0741)	0.3686*** (0.0435)	0.2074*** (0.0303)	0.388*** (0.0278)
lnCAF 00	-0.049*** (0.012)								
lnHOUS 00		-0.035*** (0.007)							
lnFURN 00			-0.058*** (0.006)						
lnHEALTH 00				-0.061*** (0.114)					
lnTRAN 00					-0.054*** (0.009)				
lnCOMM 00						-0.056*** (0.013)			
lnRAC 00							-0.047*** (0.006)		
lnRAH 00								-0.025*** (0.005)	
lnMGAS 00									-0.049*** (0.004)
Number of observations	25	25	25	25	25	25	25	25	25
R2	0.388	0.525	0,802	0,530	0,619	0,412	0,687	0,547	0,855

***$p<0,01$

Legend: CAF = Clothing and footwear; HOUS = Housing, water, electricity, gas and other fuels; FURN = Furnishings, household equipment and routine house maintenance; HEALTH = Health; TRAN = Transport; COMM = Communications; RAC = Recreation and culture; RAH = Restaurants and hotels; MGAS = Miscellaneous goods and services

Note: * *Initial year used in the β convergence analysis is 2000, since in previous years consumption data for Romania and Greece are missing.*
  ** Besides, the analysis ultimately encompasses 25 observations since in 2007 data for Bulgaria and Portugal are missing.
  *** Dependent variable is the average annual growth rate of expenditures on a given product or service category consumption in country i and time T.

Discussion

On the theoretical basis, the convergence existence requires parameter β to be lower than 0, which is shown in the results presented in the Table 1. The negative sign of the parameter β actually means that the rate of change in consumption expenditures on a given product and service category is lower in countries that had a higher initial level of consumption expenditures (in 2000), in the given category and vice versa. In other words, rates of household expenditures growth, in countries with higher initial expenditures are slowing down, while they are accelerating in countries with lower initial expenditures. This, in turn, leads to the equalization in consumption expenditures and obvious convergence

The set hypothesis on the convergence of household consumption of has been proved. Findings obtained using the β-convergence method, for each individual product and service category confirm that the hypothesis has been proved. The obtained results of the paper are supported by past research (e.g. De Simone et al, 2010; Kerem, 2008; Regmi and Unnevehr, 2005; Ševela, 2004; Nixon, 1999). Household expenditure convergence is very prominent, with the evident growth in dynamics.

Certain types of products showed a particularly different convergence level, which means that the individual product markets are differently exposed to convergence and therefore offer various possibilities for creating standardized concepts, primarily the regional concept of international marketing.

Empirical confirmation of the convergence research based on household consumption expenditures (primarily the economic aspect), generates a promising foundation for developing and implementing the Pan-European marketing concept. Naturally, this should not be understood as a possibility to reach the universal convergence. Although the convergence of consumer needs does exist, ways of satisfying consumer needs are diverse, since their preferences are different. It actually opens opportunities for regional segmentation, i.e. market classification into homogenous segments, though as a cross-national, regional and European level.

Conclusion

The topic of the paper is research into household expenditure convergence in EU-27 countries. Convergence is viewed as a process which decreases differences between consumption levels in individual countries as compared to the average. Concentrating on the absolute value of expenditures and their structure, the paper proved the significant convergence toward the results of the EU-members.

The research has empirically confirmed that convergence is an irrefutable process, and that companies that are aware of this achieve better performance than others. This finding leads us to two conclusions. First, companies' marketing department should continuously study and take into account the convergence process when designing business strategy. Second, convergence does not have to be absolute. One can always single out certain segments at a cross-national level as a basis for designing a standardized international marketing concept. In other words, obtained findings can serve as a basis for defining an international marketing concept for entering the EU-27 countries' market, in terms of the possibility to use the regional marketing concept for companies oriented to this market. Actually, even when the EU-27 market is fairly heterogeneous, certain countries or product or service categories can be singled out as a fairly homogenous segment that allows the development of the standardized type of regional marketing.

The basic limitation we encountered during our research was the use of exclusively secondary data. The second limitation pertains to the fact that there is no single method of measuring convergence, and therefore, the identification and evaluation had to be made by combining a few methods. The third limitation includes a certain lack of data within statistical bases, which decreased the measurement accuracy.

When it comes to recommendations for future studies, we believe that it would be interesting to conduct this research by using other available methods for convergence evaluation, and to conduct a similar research within other regional integrations. There is also a need for continued research, in order to monitor the process evolution due to its nature and implications.

Data sources

EUROSTAT DATABASE: http://epp.eurostat.ec.europa.eu, Final consumption expenditure of households by consumption purpose - COICOP 3 digit - aggregates at current prices (nama_co3_c), (24 February 2010), GDP and main components - Current prices (nama_gdp_c), (21 February 2010), Population change: absolute numbers and crude rates (demo_gind) (21 February 2010).

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