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Essays on the Convergence of Consumer Spending Patterns across National Markets

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ESSAYS ON THE CONVERGENCE OF CONSUMER SPENDING PATTERNS
ACROSS NATIONAL MARKETS

BY

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ACCEPTANCE

This dissertation was prepared under the direction of Ayse Ozturk's Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Business Administration in the J. Mack Robinson College of Business of Georgia State University.

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ABSTRACT

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The international marketing literature has a common assumption that consumers across countries are becoming more similar in their consumption behavior over time. However, this assumption of global convergence of consumer spending has not been empirically tested in the literature. In this dissertation, we examine the convergence hypothesis across a heterogeneous set of countries and multiple product categories. In the first essay, we develop a conceptual framework of convergence of consumer spending behavior. In the second essay, we empirically test whether convergence is observed across markets and product categories over time. Finally, in the third essay, we investigate the effect of global convergence of consumer spending on market concentration and firms' market shares. Using the four-firm concentration ratio, we compute the market concentration by industry in each market to investigate the effect of convergence on market concentration. We also examine the effect of convergence on market shares of individual firms, considering the moderating effects of country of origin, country of operation, and the degree of internationalization of the firm. We model the dependent variables, market concentration and market shares, using the fractional logit model. Our results show that there is an overall convergence trend across product categories and countries over time. Moreover, we find that convergence increases the market shares of the largest firms in a market. The findings of this study have theoretical and managerial implications on major marketing areas including global marketing strategy, internationalization, and market segmentation.

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Motivation of the Study

The starting point of this dissertation emerges from questioning the common assumption of consumers across countries becoming more similar in their consumption behavior over time due to globalization and related factors (e.g. wealth increase, advances in technology). Although this convergence hypothesis related to consumer demand is widely assumed among scholars and practitioners alike, it is never thoroughly tested on a global scale. One study puts it this way: "*the often suggested, but never tested, hypothesis of global convergence of consumer needs and wants*" (Steenkamp & Ter Hofstede, 2002). Limited number of studies have examined it using basic methodological approaches for a few numbers of countries, mostly focusing on European markets. In line with this gap in the literature, the essays in this dissertation attempt to comprehensively examine the convergence hypothesis across a heterogeneous set of countries and multiple product categories, determine if it exists in terms of convergence of consumer spending patterns, and if so, to what extent it exists, and finally identify its consequences on market shares of firms.

Significance of the Study

Companies are constantly in the search of competitive advantage as a key factor for success (Porter, 1980). However, despite growing importance of international markets, particularly the emerging markets, marketing strategy literature has not sufficiently covered beyond the domestic market (Craig & Douglas, 2000). This study is important in examining marketing strategy topics

(e.g. consumer spending patterns and integrated marketing strategies) in the context of international markets.

Companies need to track the trends of consumer behavior in their target markets. Based on the past behavior of consumers, companies develop target segments. However, customer behavior is not stable, but is constantly changing over time. As a result, previously distinct customer segments may become more similar over time. Instead, similar segments may also get more dissimilar. Thus, to have a forward-looking perspective for marketing and business planning purposes, it is important for companies to track the trends of consumer behavior and identify converging or diverging behavior of consumers. Convergence trend would necessitate more standardized marketing strategies. Several studies argue that companies that fail to acknowledge the similarities among markets will be at a competitive disadvantage (Levitt, 1983; Özsomer & Simonin, 2004; Yip, 1995). On the other hand, diverging trends would require more customized approaches.

Although monitoring the evolution of global consumer behavior has important implications for companies, the literature has not provided a long-term outlook on this topic. A common assumption holds that convergence in consumer tastes occurs across countries due to globalization (Levitt, 1983). On the other hand, some studies argue that divergence has been in effect due to distinct cultural values (De Mooij & Hofstede, 2002). However, consumer behavior is constantly evolving due to technological disruptions. Even if divergence has been observed in the last decades, the opposite can happen today because of the high connectivity of cross-border consumers due to advanced technology, social media, increasing purchasing power, and facilitated transportation. As a result, cultural norms may even converge, leading to convergence of consumer spending patterns. Thus, new perspectives on the convergence-divergence debate of

global consumer spending behavior should be developed in light of the recent advancements in the globalization domain. The findings from the essays of this dissertation will provide refinements to the convergence theory in terms of consumer spending behavior, and even lead the way for further development of new theories.

Research Objectives

Our main goal in this dissertation is to comprehensively examine the global convergence phenomenon both conceptually and empirically. In the first essay, our goals are to integrate the convergence phenomenon from multiple disciplines, conceptually examine it in terms of convergence of consumer spending across countries and product categories, and develop a conceptual framework. In the second essay, our purpose is to empirically test and identify whether convergence is observed across countries and product categories over time. Finally, in the third essay, we examine the effects of global convergence of consumer spending on market concentration and firms' market shares.

The first essay aims to conceptually discuss the convergence concept from multiple disciplines (e.g. economics, economic psychology, sociology, political sciences, management, and marketing). Based on the relevant theories from these fields, the essay extends the discussion on convergence in terms of consumer spending behavior. We develop propositions and a conceptual framework on the global convergence of consumer spending.

The second essay takes an empirical approach in testing the convergence hypothesis. We use multiple methods to test convergence of consumer spending. First, we adopt and improve a previously used measure from the literature which is the coefficient of variation of expenditure. Second, we develop a new measure at a lower level that adds more insights with respect to

convergence and allows for comparison of convergence both across countries and product categories. Third, we incorporate a method based on the neoclassical growth models from the economics literature. Our findings from all three methods show consistent results. The insights have managerial implications in market segmentation and global marketing strategy decisions.

Finally, the third essay investigates the consequences of convergence of consumer spending. We explore the impact of global convergence of consumer spending on market concentration and market shares. We compute the four-firm concentration ratio (CR_4) and the Herfindahl index to calculate market concentration per industry in each market. Then, we test the effects of convergence on market concentration using fractional logit models. We also test the effects of convergence on individual firms' market shares considering the moderating effects of country of origin, country of operation, and the degree of internationalization of the firm. The results have important implications for the leading firms in each market.

Contributions of the Essays

Managerially, it is important for firms to track the trends of consumer demand in their target markets. Convergence is an important trend and is widely assumed to occur across national markets due to globalization. However, although it has scholar and managerial implications, delineating which markets are likely to converge toward which product categories is unexplored in the literature. If convergence of consumer spending occurs for a specific product category, it shows that consumer demand for that product category is becoming similar across markets. Firms may consider integrated marketing strategies in the case of convergence.

Scholarly, this study will contribute by adding insights to resolve theoretical conflicts in the literature. The convergence debate has been controversial in many fields. For example, in the

economics literature, the neoclassical growth model predicts convergence of income across countries, whereas the new endogenous growth model predicts divergence of income. In the business literature, both convergence and divergence hypotheses in terms of consumer behavior have proponents and opponents. However, only a very limited number of studies have examined the convergence hypothesis in consumer demand. The current study will address this gap in the literature by providing evidences across multiple markets and products, using methodological and theoretical approaches from multiple disciplines. An empirical investigation of convergence in terms of consumer spending behavior will help resolve the persistent debate on convergence versus divergence by providing empirical evidences based on a longitudinal analysis.

Methodologically, we empirically test convergence across markets and product categories developing a new measure as well as adopting methods from the economics literature. Conceptual discussion of convergence is more widespread than empirical testing of convergence in the literature. Furthermore, those few studies that have examined convergence use limited methods such as the comparison of coefficient of variation between two time periods. The current study develops a new measure of convergence referred as the "budget allocation gap" which allows to test convergence both at the country level and at the product category level over each time period. We also use regression methods based on the neoclassical growth model to test convergence.

ESSAY 1

CONCEPTUALIZATION OF THE GLOBAL CONVERGENCE OF CONSUMER SPENDING

1. The Convergence Debate

Theodore Levitt, in his pioneer studies, argues that the world is becoming one large market, and consumer tastes are converging and becoming more homogeneous due to technological advancements, increasing global communication, travel and transport (Levitt, 1983). He advocates that businesses should offer globally standardized products rather than customized ones. This global standardization philosophy is based on such assumptions as worldwide homogenization of customer needs and wants, and universal preference of low price and good quality (Douglas & Wind, 1987; Levitt, 1983). This perspective of a more homogenized world market and global culture is also advocated in well-known publications such as *the End of History and the Last Man* by Francis Fukuyama (1992), and *The World is Flat* by Thomas Friedman (2005).

On the other hand, opponents of the convergence view claim that consumers are becoming more heterogeneous because cultural values play a bigger role as countries converge in economic wealth (De Mooij, 2010, p. 5). Increased wealth enables people to emphasize their civilizational identities (Huntington, 1987). An advocate of divergence, Samuel P. Huntington (1993) posits cultural differences as the source of divergence across civilizations. He argues that differences between civilizations will increasingly maintain their importance and create conflicts between cultural groups, mainly between Western and non-Western societies. Greater worldwide cooperation would be needed to avoid clashes. He predicts that there will not be a universal

civilization but a world of different civilizations in the future (Huntington, 1993). Similarly, another study finds that countries are actually diverging in terms of macro-environmental characteristics such as infant mortality, cost of living, life expectancy, and similar other macro factors (Craig, Douglas, & Grein, 1992).

In sum, the debate of the convergence of consumer behavior presents differing views in the literature. This essay integrates convergence literature from a wide range of disciplines, and develops propositions and a conceptual framework on the convergence of consumer spending for different product categories across countries. We conclude with discussion, contributions, implications and future research directions.

2. Convergence Perspectives in Multiple Disciplines

The convergence theory proposes that nations are becoming more similar to each other despite different cultural, historical, political, and economic background (De Mooij, 2010). This theory has been examined from different perspectives in multiple disciplines including economics, economic psychology, sociology, political sciences, management and marketing. Below is a discussion of the literature review on convergence and related theories from different fields.

2.1. Convergence in Economics

In economics, convergence is mainly examined in terms of per capita income. Convergence is defined as the erosion in the gap of the living standards between rich and poor countries (J. G. Williamson, 1996). The convergence theory is the central idea of the neoclassical growth models pioneered by Solow (1956) and Swan (1956). The neoclassical growth models propose that per capita output of countries converges over time based on the assumption of diminishing returns to capital. Decreasing returns to capital means that per capita growth rate tends to be inversely

related to the initial level of income or output per capita (Cass, 1965; Koopmans, 1965). Low-income economies grow faster than high-income economies, and income disparity across countries disappears over time (Rassekh, 1998). The argument of the convergence hypothesis is that being left behind drives a productivity laggard to grow faster than the early leader (Abramovitz & David, 1996).

The convergence hypothesis is also called the catch-up effect due to the expectation that rapidly growing poor countries will catch up with slowly growing rich countries (Abramovitz, 1986). The idea is that workers in poor countries have little access to capital. So, even a small increase in the amount of capital in poor countries will lead to substantial gains in productivity. A similar increase in the amount of capital in a rich country, however, will result in a smaller gain in productivity because workers in a rich country already have high levels of productivity. As a result, the growth potential for a country is higher if the country is initially more backward, and it weakens as the productivity level converges toward that of the rich countries.

This assertion of convergence still represents one of the oldest controversies in economics (Rassekh, 1998). The debate dates back to the studies of Hume who defended the tendency of countries to converge in terms of economic growth, and Tucker who, contrary to Hume, believed that economic disparity can persist permanently (Elmslie, 1995; Rassekh, 1998). The new endogenous growth theories challenged the predictions of the neoclassical growth model with regards to the eroding gap between rich and poor nations (Capolupo, 1998). The neoclassical growth models assume that internal growth is feasible until the capital stock reaches the steady-state, and after that further growth is difficult to achieve which leads to convergence in the growth of economies. However, according to the new endogenous growth models, sustained economic growth is possible. Endogenous growth models do not assume the diminishing

marginal productivity of capital with increasing income. Thus, the accumulation of capital can sustain a permanent growth. As a result, endogenous growth models foresee divergence in the growth of economies as opposed to the convergence predictions of neoclassical growth models (Capolupo, 1998).

Another theory supporting the convergence of incomes is based on studies by the economist Simon Kuznets (Kuznets, 1955; Piketty, 2014, pp. 13-15). Kuznets developed the theory of the Kuznets curve. This theory posits that income inequality follows a bell curve. Inequality of income first increases in the early phases of industrialization and economic development, and then decreases in the later stages of development, leading to convergence of incomes in the long term. A recent study opposes this view by arguing that divergence forces are more influential in the long term (Piketty, 2014). Piketty (2014) notes that when the rate of return on capital exceeds the growth rate of economy (which he predicts for the twenty first century), the inherited wealth grows faster than output and income. In this case, inherited wealth will be much higher than wealth acquired from a lifetime's labor. More simply, rich will get richer and poor will get poorer. However, the author also notes that the history of income and wealth has always been unpredictable. The dynamic factors such as how societies view and respond to inequality will shape the future on convergence or divergence of income and wealth.

In the economics literature, another convergence debate is related to the factor prices across countries. The convergence, discussed above, which is the convergence of per capita income is termed "macro convergence", whereas the convergence related to the factor prices such as wage is termed "micro convergence". The macro convergence is based on the neoclassical growth model, while the micro convergence is based on the factor price equalization theorem. Heckscher (1919) pioneers this theorem arguing that international trade influences factor prices such that

free trade leads to factor prices being equal across countries. Ohlin (1933) builds up on this theory arguing that there will only be partial equalization. Even though factor prices do not equalize completely, convergence occurs as trade barriers fall. Hirschman (1977, p. 68) relates these two types of convergence (i.e. micro and macro convergence) by arguing that international trade leads to factor price equalization which then leads to the equalization of incomes across economies.

In economic history, there is evidence that convergence of incomes has occurred at specific growth periods. A study defines three epochs of growth after the mid-nineteenth century: the late nineteenth century with fast growth, the middle years between 1914 and 1950 with slow growth, and the late twentieth century again with fast growth (J. G. Williamson, 1996). The two epochs with fast growth are characterized with globalization and convergence of incomes. The study finds a positive correlation between globalization and convergence, arguing that globalization contributes to convergence. Another study also shows evidence for the convergence of productivity levels across countries, which is especially true if the countries have social capability to absorb more advanced technology (Abramovitz, 1986).

2.2. Convergence in Economic Psychology

Opposing views of convergence and divergence also exist in the economic psychology literature captured by the concepts of the *bandwagon effect* and the *snob effect*. These perspectives relate to convergence and divergence of consumer behavior.

The bandwagon effect refers to the tendency of consumers to do certain things or consume certain products as other consumers exhibit these behaviors. The demand of a product is increased because others are also consuming the same product (Leibenstein, 1950). People have

the desire and motivation to join the crowd which relates to mass psychology. They want to conform to the people they aspire to be associated with. This drive to "jump on the bandwagon" contributes to the convergence of consumer behavior.

The opposite of the bandwagon effect is the snob effect. It refers to the decreased demand of a product due to the fact that others are consuming that product (Leibenstein, 1950). These consumers searching for exclusive types of consumption and disassociating themselves from the "common herd" would lead to divergence of consumer behavior.

2.3. Convergence in Sociology

In sociology, convergence relates to societies. There are also advocates and opponents of each side of the debate on convergence versus divergence. Some theorists support the idea that societies would increasingly become similar despite diverse cultures, histories, political and economic systems (De Tocqueville, 1952; Maine, 1906; Tonnies, 1957); whereas other theorists argue against convergence (J. B. Williamson & Fleming, 1977). Patterns of convergence in sociology are studied through social relationships, modes of production, increasing dependence of science and technology, popular attitudes, and political and economic control (De Mooij, 2010; Inkeles, 1998, pp. 20-23).

The debate of convergence in sociology relates back to the modernization theory in the 1960s. The convergence advocates argue for a single form of modernity, whereas the divergence advocates argue for different forms of modernity (De Mooij, 2010, p. 52). A major scholar of the modernization theory, Inkeles (1998), emphasizes convergence in institutions such as education, communications, family patterns, medicine and health that lead to more similar global attitudes and values across different societies. The author also defines a variety of forms and levels of

convergence. For example, there may be a ceiling effect in some forms of convergence and further convergence may not be possible (e.g. primary school enrollment in advanced countries); or there may be different levels of convergence (e.g. the age of marriage going down in some countries but moving up in others) (De Mooij, 2010, pp. 57-58; Inkeles, 1998, pp. 30-45).

In recent decades, increased globalization practices have generated a new cultural shift. Sociologist George Ritzer developed the *McDonaldization* term that refers to the global homogenization of cultures. The thesis argues that fast-food restaurants first dominate the American society, and then dominate the other societies. Cultures start adopting the characteristics of fast-food restaurants which are defined as predictability (e.g. a uniform menu), efficiency (e.g. fast service), calculability (e.g. quantity before quality), and control (e.g. standardized tasks). This leads to a process in which these four characteristics of fast-food restaurants increasingly dominate consumers and institutions in every society, leading to a new homogeneous modern global society (Ritzer, 2008). The foundations of this view date back to the rationalization concept of Max Weber which refers to replacement of traditional thought with reason and efficiency. In the end, the trend of rationalization in the modern societies would eventually create a uniform global society (Ritzer, 1998).

2.4. Convergence in Political Sciences

In political sciences, convergence due to globalization leads to homogenization of economic and political values such as convergence toward the acceptance of the liberal democratic values and human rights of the industrialized democracies. Convergence makes societies move toward a similar point as a result of the industrialization (Kerr, Dunlop, Harbison, & Myers, 1960). Major international economic institutions are by-products of this convergence: IMF is founded to

promote international monetary cooperation, the World Bank is founded to foster economic development of less developed countries, and the GATT is founded to increase international trade (Seita, 1997; J. Williamson, 1982). Regional blocs such as the European Union and NAFTA are other outcomes of convergence in terms of political, economic, and even monetary systems. Yet, the convergence of political values is not as straightforward to achieve as the convergence of economic values. Some nations have been eager to gain economically by increasing foreign trade or adopting free market policies, but they have not switched from dictatorship to democracies. The convergence of political and economic values facilitates global cooperation by creating a common bond among people. Thus, a person's racial, religious, or ethnic group are overshadowed by this common bond due to convergence (Seita, 1997).

Nevertheless, there are still forces against convergence toward democracies and market economies. Inequality of capital and wealth brought by capitalism complicates the progress toward convergence of political and economic systems and undermines the meritocratic values of democratic societies (Piketty, 2014). A market economy includes powerful forces of convergence (e.g. diffusion of knowledge, training, and skills) as well as powerful forces of divergence (e.g. increasing income inequality). The income distribution has been getting worse in many economies. In the U.S., the top income decile had about 45-50 percent at the beginning of the twentieth century, then 35 percent in 1950s, and then again, it rose to 45-50 percent. This income divergence trend is observed in many countries due to increase in wage inequality, in other words, the rise of super-salaries mainly among top managers of large firms (Piketty, 2014). As a result, even though many policies such as mass education are adopted, they do not give intended results. Increasing levels of mass education do not result in greater social mobility across generations. Substantial international cooperation and integration on the diffusion of

knowledge, educational policies, and the acquisition of training and skills are required to make convergence possible. The policies and institutions the societies adopt in the face of increasing income inequality will shape the future trends in convergence versus divergence of income, and the related trends in political and economic systems.

2.5. Convergence in Management

In the management literature, convergence versus divergence debate has focused on the formation of cultural values (Webber, 1969). The main question is whether cultural values converge as countries industrialize. The convergence theory advocates believe that economic ideologies drive values, and as nations industrialize, they embrace common values which converge toward Western values. On the other hand, opponents of the convergence theory believe that national culture drives values, and even if nations industrialize, their value systems will not change (Ralston, Holt, Terpstra, & Kai-Cheng, 1997). Thus, convergence is economic ideology-driven, whereas divergence is culture-driven.

Many international firms aim to be global organizations, achieving a universal corporate culture among its employees. However, employees bring with them diverse individual work values originating from different national cultures (e.g. Eastern versus Western cultures) and economic ideologies (e.g. capitalism versus socialism). The integration of these diverse value systems, that is, the convergence toward an integrated set of values becomes important to create a universal corporate culture. Ralston et al. (1997) argue that, rather than moving toward either polar extreme of convergence or divergence, cultural and ideological value systems synergistically integrate and generate a new unique value system that is different from the original value sets. The authors define the creation process of this new value system as *crossvergence* (Ralston,

Gustafson, Cheung, & Terpstra, 1993; Ralston et al., 1997). They examine four countries on two extremes of economic ideology (capitalism versus socialism) and national culture (Western versus Eastern): the U.S., Japan, Russia, and China. They compare the individual work values of managers across these four countries based on Schwartz Value Survey sub-dimensions. The findings lend credence to the crossvergence hypothesis. For example, power and benevolence sub-dimensions do not differ across China and the U.S., whereas they are expected to differ based on different national cultural and economic ideology structures. While the other sub-dimensions are still different across China and the U.S. resulting as expected, these two sub-dimensions might imply that some values are converging across diverse markets. In sum, each value changes at different rates, and crossvergence is a temporary and transitional state during which values become more similar over time (Ralston et al., 1997).

2.6. Convergence in Marketing

Marketing literature has examined convergence in terms of changing consumer needs and wants as a result of globalization. In recent decades, globalization processes have generated a new culture which is referred as the global consumer culture. It represents people's desire to associate themselves with global citizenship and the "global village" (McLuhan, 1964; Steenkamp & De Jong, 2010; Strizhakova, Coulter, & Price, 2008). A unique world culture is emerging due to increasing interconnectedness of diverse cultures (Alden, Steenkamp, & Batra, 1999; Hannerz, 1990). Advances in transportation and communication technology facilitate this homogenization of world markets (Jain, 1989). Consumers embracing the idea of global citizenship are attracted to the shared consciousness brought by globalization processes. They also appreciate the increased homogenization of consumer culture as a result of widespread market economies and globalization of companies (Alden et al., 1999).

Although globalization, converging incomes, media and technology might lead to homogenization of consumer behavior, there are opponents to this view. Several studies have found that consumers' cultural values are so strong that, with increasing incomes, consumers have more freedom to express their unique values leading to divergence of consumer behavior (De Mooij, 2000, 2003). While this view assumes that cultural values are distinct and stable, there are other views claiming that cultural norms are also shifting, weakening the divergence arguments.

A study uses the acculturation theory to explain the changing role of the females in Japanese television advertising (Martin, 2012). Acculturation happens when two or more cultures come into contact with each other and subsequently change each other's cultural patterns. The study argues that Western influence on Japanese consumers changes the traditional values through foreign media, overseas travel, and international trade. In response to that, advertisers mostly use assimilation strategies emphasizing local culture to resonate more with local consumers when they use foreign actors in their ads. As a result, acculturation leads to convergence of cultural norms across different cultures. Another study shows how national cultural values are merging and blending, and how similar segments across countries are forming. Yoo, Donthu, and Lenartowicz (2011) develop a new scale to measure Hofstede's cultural values at the individual level. In their subsequent segmentation study, they find similar market segments showing similar cultural orientations in three countries with different national cultural values (the U.S., South Korea, and Poland). Once again, this study confirms that the distinction of national cultural values is disappearing to form similar segments across countries toward convergence.

Other than culture, convergence is examined in terms of innovation diffusion and new product growth and penetration (Ganesh, 1998; Stremersch & Tellis, 2004). Some of these studies argue

that converging macro-environmental trends and converging consumer behavior are more prevalent than divergence trends in European Union countries (Ganesh, 1998; Leeflang & Van Raaij, 1995). This convergence trend suggests blending of lifestyles and growing homogeneity of consumer tastes and buying behavior, allowing for more standardized marketing strategies. As a result, homogenization of consumer behavior facilitates the diffusion of new products, ideas, and technologies. European nations have been converging to a more similar macro-marketing environment and micro-marketing mix (Leeflang & Van Raaij, 1995). In new product diffusion, the convergence of consumer behavior suggests that a sprinkler strategy (i.e. simultaneous entry in all markets) would be more efficient for firms than a waterfall strategy (i.e. phased entry into markets at different times). Divergence of consumer behavior suggests the opposite.

As opposed to the study of Ganesh (1998) and Leeflang and Van Raaij (1995), some studies found divergence trends in consumer behavior. Stremersch and Tellis (2004), similar to Ganesh (1998), focus on new product diffusion processes in Europe. However, unlike Ganesh (1998), the authors find that the pattern of international growth of new products differ substantially across European nations. The contradictory conclusions on convergence versus divergence may be due to different sets of countries (European Union versus all industrialized countries) or different time periods (before versus after the formation of European Union) used in these studies.

It is not very straightforward to distinguish markets as converging or diverging. In line with this issue, Douglas and Craig (2011) argue that some markets are converging whereas others are diverging. So, marketers are increasingly encountering challenges from these converging and diverging markets. As a result, a semi-global marketing strategy is advised where different parts of the world are served in different directions regarding their converging and diverging patterns. A semi-global marketing strategy implies developing a global marketing strategy that can be

adjusted to new and diverse sources of market growth and opportunity. This requires developing a more complex, multifaceted approach in designing different strategies for diverse markets such as BRICs, second-tier emerging markets, and rural areas (Douglas & Craig, 2011).

There are also studies measuring consumer attitudes toward convergence and divergence. Consumers show a dilemma between economic benefits of convergence (e.g. price decrease) and cultural drawbacks of convergence (e.g. dilution of cultural authenticity). Van Ittersum and Wong (2010) note that consumers are reluctant to global convergence when it harms the authenticity of cultural products and local economic production structures, but they embrace convergence when it provides economic benefits such as price reductions. So, this trade-off between the economic benefits of convergence and the cultural benefits of divergence determines consumer attitudes toward convergence and divergence.

The trade-off between the economic benefits of promoting global convergence and the cultural benefits of preserving local divergence is best reflected in a metaphor by Thomas Friedman in his book "The Lexus and the Olive Tree". He expresses the dilemma of the modern day people with these words: "*Half the world seemed to be emerging from the Cold War intent on building a better Lexus, dedicated to modernizing, streamlining and privatizing their economies in order to thrive in the system of globalization. And half the world - sometimes half the same country, sometimes half the same person - was still caught up in the fight over who owns which olive tree.*" (T. L. Friedman, 2000, p. 31).

As a result of changes in consumer behavior across markets, cross-national market segments appear to converge (Griffith, 2010). Global marketing strategies need to be devised based on the level of convergence in institutional systems (i.e. cultural, political, and legal systems). Higher

levels of institutional convergence breed larger cross-national market segments which can be served with more standardized marketing mix variables. On the other hand, lower levels of institutional convergence create smaller cross-national market segments which need more adaptation of marketing mix variables (Griffith, 2010).

2.7. Summary of the Convergence Perspectives in the Literature

In summary, convergence is a broad concept and is examined in different contexts in multiple fields, in terms of: convergence of per capita income and factor prices in economics, convergence of consumer behavior in economic psychology, convergence of societies and institutions in sociology, convergence of economic and political values in political science, convergence of cultural values in management, and convergence of consumer needs and wants in marketing. Moreover, the forces of convergence and divergence are constantly at play. Which side will gain the upper hand is unknown yet, but it is certain that each side has its proponents and opponents.

Table 1 presents a summary of the literature on convergence perspectives, and Table 2 presents a summary of the literature on divergence perspectives from different fields.

Insert Table 1 here

Insert Table 2 here

This study will extend the literature in terms of convergence of consumer demand across countries and product categories. We define convergence as the homogenization of consumer expenditure such that customers become more similar in their spending behavior across product categories and countries. In our context, convergence means the reduction of heterogeneity of consumer expenditure for a specific product category across countries. Using several related theories from the research streams discussed above, we extend the convergence theory in terms of consumer spending, comparing convergence across markets and product categories.

3. Gaps in the Literature

Although the convergence concept has long been debated in other fields, marketing and international business literatures have minimally examined this concept in terms of consumer demand. It is not tested whether there is a convergence trend occurring across national markets on a global scale. The drivers of convergence of consumer spending patterns are also unexplored. Convergence of consumer spending has important implications for targeting and strategy development purposes of international marketers. Therefore, understanding the convergence phenomenon and identifying the drivers of convergence of consumer spending is imperative in the international marketing literature.

Furthermore, examining the differences in convergence comparatively across product categories and countries is also lacking in the literature. Some product categories or countries may be more likely to exhibit convergence in consumer demand in a greater extent than other product categories or countries.

Consequences of convergence are also overlooked in the literature. As consumer expenditures converge, consumers become more similar in their spending patterns. However, as convergence

of consumer spending behavior is a relatively new topic the literature, not much insights are provided on the consequences or implications such as how a firm's performance is affected by convergence. This study will also discuss the consequences of convergence on market shares of firms.

4. Propositions

Before developing propositions, we define convergence in terms of consumer expenditure. Overall, convergence means to come together from different directions so as to eventually meet (Lind, 2004). However, its definition differs by the literature or the context in which it is used. For example, at an industry level, convergence is defined as the merging of separate markets and removing entry barriers across industry boundaries (Lind, 2004). In several studies, convergence represents the homogenization of economic systems, demographic systems, value systems and homogenization of consumer behavior (De Mooij, 2000, 2003; De Mooij & Hofstede, 2002). In the context of the current study, convergence represents the homogenization of consumer expenditures such that consumers become more similar in their spending behavior toward different product categories across national markets.

4.1. Convergence across Countries

Modernization theory, global village, and global citizenship arguments have increasingly more influence on consumers' behavior compared to a few decades ago. Consumers are now more connected to each other through advanced technology, easier diffusion of knowledge, and higher exposure to information. High connectivity among people in different countries make them more likely to converge toward similar consumption patterns. Consumers have more access to different cultures, and are more likely to merge behavior patterns through advanced

communication tools and facilitated travel opportunities than before. The convergence arguments of the modernization theory and global village concept would apply more to today's world markets. Therefore, we expect that there is a convergence trend in consumer spending patterns across countries over time.

P$_1$: Over time, a convergence trend in consumer expenditure patterns occurs across countries.

4.2. Antecedents of Convergence: Macroeconomic Indicators

Common factors associated with convergence in the literature include: advanced communication technology (Seita, 1997), diffusion of technology, international trade (Barro & Sala-i-Martin, 2004, p. 349; Rassekh, 1998), modernization, urbanization, formal education, industrialization, national wealth (De Mooij, 2010, p. 51), global media, and increasing purchasing power (Ter Hofstede, Wedel, & Steenkamp, 2002). These factors are associated with convergence related to political systems, institutions, income, and consumer behavior. Likewise, we propose that these macro-environmental factors also lead to convergence of consumer spending across markets.

For example, in political sciences, technology promotes democracy and human rights by making information and communication easier and cheaper without censorship of governments, facilitating convergence of political values. In economics, the diffusion of technology provides poor countries the impetus to grow faster than rich countries, facilitating convergence of incomes (Rassekh, 1998). Similarly, the advancements in technology increase the connectivity among consumers, spread their ideas faster, leading to convergence of consumer spending in distinct markets.

Furthermore, international trade, urbanization and education affect convergence in a similar fashion by increasing the connectivity with other consumers, even beyond the regional or national borders. As international trade increases, similar products and services become available across borders. As urbanization increases, similar consumption patterns spread easily among populous urban residents. Finally, as education increases, the connectivity of the individual with technology, other consumers, and other resources increases, leading to more similar consumption patterns among these connected consumers.

Income increase can also lead to convergence of consumer spending. As incomes increase, consumers will have more to spend on their consumption. They are more likely to spend on products or services that others have, such as leisure and travel, or automobiles. Income increase will lead to convergence of consumer spending across markets. In particular, as lagging markets develop economically, they will catch up with the convergence patterns in advanced economies. Therefore, we propose that the factors discussed above are the drivers of convergence of consumer spending across markets.

> P_2: The higher the technology, the higher the convergence of consumer spending.

> P_3: The higher the international trade, the higher the convergence of consumer spending.

> P_4: The higher the urbanization, the higher the convergence of consumer spending.

> P_5: The higher the education, the higher the convergence of consumer spending.

> P_6: The higher the income, the higher the convergence of consumer spending.

Besides the factors discussed above, we propose that a new factor, the middle class can also have an effect on the convergence of consumer spending. Ter Hofstede et al. (2002) associate

increasing purchasing power with global convergence trends. The middle class is a major indicator of the increasing purchasing power in economies. It is a rising phenomenon especially in rapidly transforming emerging markets. The rise of the new middle class, especially in populous emerging markets including China and India, has generated a large-scale first-time buyers for most consumer goods ranging from personal accessories to appliances (J. N. Sheth, 2011). Countries with an increasing size of the middle class grow faster because the middle class breeds entrepreneurs, generates consumption power and invigorates economies. As the middle class gets stronger, there will be more interconnectedness and more globalization across economies. As a result, consumer spending patterns will start to become more similar. Since the middle class is on the rise in rapidly growing emerging markets, these middle-class consumers are likely to become more similar and eventually catch-up with their counterparts in advanced markets. Thus, we expect that as the middle class gets stronger, and the size of the middle class increases, the convergence of consumer spending across markets will increase.

P$_7$: The higher the size of the middle class, the higher the convergence of consumer spending.

Another factor affecting the convergence through consumer spending patterns is related to public policies. Socially responsible policy policies around the world discourage the use of unhealthy consumption choices such as alcohol and tobacco usage. These public policies are also corroborated by intergovernmental organizations such as the World Health Organization. Socially responsible public policies aim to protect consumers and minimize social harm (Blaszczynski, Ladouceur, Nower, & Shaffer, 2008). Similar policies are put in place to improve vaccination rates and seat belt usage. Such policies oversee the benefits of consumers to discourage the use of unhealthy consumption behavior. Consumers increasingly reduce their

consumption in harmful products (e.g. alcoholic drinks) whereas they direct their spending toward more beneficial products (e.g. nonalcoholic drinks). Therefore, we expect that as socially responsible public policies increase, the convergence of consumer spending across markets will also increase.

> P_8: As socially responsible public policies increase, the convergence of consumer spending across markets will also increase.

> *4.3. Antecedents of Convergence: Market Types (Emerging Markets versus Advanced Markets)*

Grouping countries into more homogeneous subcategories reveals more insights on the convergence patterns. Based on the neoclassical growth model, less advanced economies have higher growth rates of income compared to more advanced economies. It means that countries with lower initial income levels grow faster than countries with higher initial income levels. Advanced economies grow slower than less developing economies, leading to convergence of economic growth (Nishikawa & Hall, 2012).

Considering the high correlation between income and expenditure, we can extend this view from income to expenditure. We argue that less developed economies would have higher growth rates of consumer expenditure compared to advanced economies. In this case, higher growth rates of consumer expenditure in emerging markets would reduce the heterogeneity of consumer expenditure to a greater degree across emerging markets. The heterogeneity across advanced markets would be more stable due to their lower growth rates. Thus, we expect the convergence of consumer spending to be higher across emerging markets compared to advanced markets.

P9: Convergence of consumer spending across countries is higher for emerging markets than for advanced markets.

4.4. Antecedents of Convergence: Product Types (Conspicuous versus Non-Conspicuous Products)

Convergence patterns can also vary by product categories. The bandwagon effect may be at play in comparing the consumer expenditure across product categories. The bandwagon effect refers to the desire of consumers to wear, buy, do, consume, and behave the same as their fellows (Leibenstein, 1950). Consumers are more likely to adopt a product as the number of consumers or fellows using that product increases. This effect would lead to the homogenization and convergence of consumer spending. However, the nature of product categories may affect the extent of the bandwagon effect.

For example, conspicuous products are socially more visible, and social influence is more pronounced for conspicuous products. Thus, we expect that the more conspicuous the product category (e.g. clothing, personal accessories), the higher the convergence of consumer spending compared to less visible product categories (e.g. food).

One can also argue that the snob effect may cancel out the bandwagon effect resulting in divergence in more visible or conspicuous product categories. However, the combined effect of globalization, modernization, urbanization, and McDonaldization is likely to strengthen the bandwagon effect to a greater extent than the snob effect. Thus, convergence of consumer consumption is expected more in more conspicuous product categories.

P10: Convergence of consumer spending is higher for more conspicuous product categories compared to less conspicuous product categories.

4.5. Moderators of Convergence: Diversity (Ethnic, Linguistic, Religious, and Cultural Diversity)

Country diversity also plays a role on convergence. Diversity can be in the form of cultural, ethnic, religious or linguistic variations in a society. More diverse countries have more variation in terms of cultural, ethnic, religious, and linguistic characteristics.

More diverse societies have higher communication costs which makes neighborhood effects less effective (Hansen, Owan, & Pan, 2006). For example, the census data in India shows that there are 122 major languages which were each spoken by at least 10,000 people in the country.[1] In such a linguistically diverse country, the knowledge transfer and sharing through communication and coordination can prove to be more challenging compared to societies with less linguistic diversity. Similarly, communication and coordination problems are prevalent in heterogeneous countries in terms of cultural, ethnic, and religious diversity. These challenges make the effects of macroeconomic indicators (e.g. technology, international trade, urbanization, education, income, and middle class) on convergence less accentuated in a diverse society compared to a more homogeneous society.

Similarly, socially responsible public policies are more effective in more homogeneous societies compared to heterogeneous societies. A variety of languages, cultures, religions or ethnicities among subgroups within a society make communication and execution of policies more challenging. Thus, diversity of a culture would also reduce the positive effect of socially responsible public policies on convergence of consumer spending patterns across markets.

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[1] http://www.censusindia.gov.in/Census_Data_2001/Census_Data_Online/Language/gen_note.html

On the other hand, one can argue that heterogeneous societies may have more opportunities for information exchange, and therefore, convergence. Diversity allows for more knowledge sharing and coordination if it is a skill-related diversity such as diversity of organizational teams. Diverse teams are shown to have more peer effects and result in higher productivity in organizational settings. However, the positive effect of diversity on knowledge sharing is not observed for non-skill related demographic diversity such as in a heterogeneous country context because of high costs and reluctance of communication among diverse subgroups within a society (Hansen et al., 2006; Sacerdote, 2000).

In sum, diverse subgroups in a country may be less open to communication and coordination with other groups who are different from themselves. Countries with higher diversity do not have much opportunities for exchange of ideas and transactions among dissimilar subgroups. This leads to less opportunities for convergence of consumer spending patterns. Thus, the effects of convergence drivers on convergence of consumer spending are reduced when there is higher diversity in a society.

P_{11}: Diversity of a country reduces the positive effect of technology on convergence of consumer spending.

P_{12}: Diversity of a country reduces the positive effect of international trade on convergence of consumer spending.

P_{13}: Diversity of a country reduces the positive effect of urbanization on convergence of consumer spending.

P_{14}: Diversity of a country reduces the positive effect of education on convergence of consumer spending.

P_{15}: Diversity of a country reduces the positive effect of income on convergence of consumer spending.

P_{16}: Diversity of a country reduces the positive effect of middle class on convergence of consumer spending.

P_{17}: Diversity of a country reduces the positive effect of socially responsible public policies on convergence of consumer spending.

There are two main diversity scales used the economics literature that measure the level of heterogeneity in each country. Fearon's (2003) analysis includes ethnic fractionalization and cultural diversity indices, whereas the analysis by Aleasina et al. (2003) comprise ethnic, linguistic, and religious fractionalization. All of these diversity indices are relevant in moderating the effects of the antecedents on convergence. A combination of these different fractionalization measures from the literature would represent the single comprehensive diversity measure that is expected to act as the moderator weakening the relationship between drivers and global convergence of consumer spending.

4.6. Consequences of Convergence: Market Concentration

Convergence of consumer spending indicates increasing similarity in spending patterns of consumers across markets. Although this increasing similarity occurs at the product category level, it can have consequences at the firm level. Increasing homogeneity of consumer tastes can cause their spending to be directed toward similar product categories as well as similar brands. In particular, global brands will attract more demand because of positive externalities and synergies generated by the global brand knowledge. As more consumers start using a specific product, others will become more likely to use the same product, as suggested by the bandwagon effect.

Subsequently, as more consumers converge toward similar product categories, they will be more likely to purchase the most preferred brands in those product categories. In consequence, as the convergence of consumer spending intensifies, the top brands in a market will get even stronger, resulting in a higher market share for the most popular firms. Therefore, we expect that, as the global convergence of consumer spending expands, there will be a higher market concentration, which represents the aggregate market shares of the largest firms in a market. As global convergence increases, largest firms with popular offerings for consumers are likely to gain more market shares, leading to higher market concentration.

P_{18}: Convergence of consumer spending for a specific product category increases the market concentration in that product category.

5. Conceptual Framework

The proposed conceptual framework is presented in Figure 1.

Insert Figure 1 here

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6. Discussion

In this study, we develop a conceptual framework of antecedents, moderators, and consequences of convergence of consumer spending. We first integrate convergence theories and perspectives from multiple disciplines such as economics, psychology, sociology, political science, management and marketing. We discuss both sides of the convergence debate by citing arguments for each convergence and divergence views in different fields. Then, we extend the

convergence debate in terms of consumer spending in the international marketing domain. We develop propositions on the convergence of consumer spending, its antecedents, moderators, and finally consequences. We integrate the most commonly cited drivers of convergence such as technology, international trade, urbanization, education, income, and introduce relevant new drivers such as the middle class and socially-responsible public policies. We also distinguish the effects of market types (emerging versus advanced markets) and product types (conspicuous versus non-conspicuous products) on convergence. In addition, we introduce new moderators to the convergence of consumer spending such as the diversity of a country: ethnic, linguistic, religious, and cultural diversity. We expect that diversity of a society will weaken the effects of globalization drivers on convergence. Finally, we discuss the consequences of convergence of consumer spending on market concentration. We propose that convergence at the product category level will lead to convergence at the firm level, leading top firms in a market gain even higher market shares. This has important implications for the leading brands in a converging market. In sum, we comprehensively analyze and integrate the convergence debate from multiple disciplines and extend it in terms of convergence of consumer spending by bringing in new moderators and consequences to the proposed conceptual framework.

The future of convergence of consumer spending depends on the level of integration of the world markets. Globalization, connectivity of people, and information flows are the main forces that foster an environment toward global convergence of consumer behavior. Advanced markets are already connected extensively with each other, and their globalization depth is among the highest in the world.[2] On the other hand, emerging markets have recently started to develop globalization capabilities. Yet, they are heavily trading with more advanced markets. Nevertheless, they are

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[2] http://www.ghemawat.com/dig/default.aspx

still at very early stages of globalization in terms of international capital and people flows, and information flows. A study finds that emerging economies are as intensive as their advanced counterparts in terms of international trade, but the integration level of emerging markets accounts for only one quarter as much in international capital and people flows, and one-ninth as much in information flows as advanced economies (Ghemawat & Altman, 2013). Therefore, the future of the global convergence depends on how much integration progress the emerging markets will show. If they continue to integrate in all areas as much as they do in trade, we can expect to see much higher levels of convergence in consumer spending patterns. Thus, emerging markets play a key role in shaping the convergence trends in the long term.

7. Contributions

Although the convergence of consumer tastes is often assumed and discussed conceptually in the marketing literature, the discussion has stayed at the very basic level on whether it is occurs or not. Convergence is mostly discussed in terms of income convergence (Barro & Sala-i-Martin, 1991; Solow, 1956) or cultural convergence (De Mooij, 2010; Maystre & Thoenig, 2007), but not in terms of consumer spending. This study extends the convergence discussion to consumer spending and proposes a conceptual framework incorporating the antecedents, moderators and consequences from a vast array of literatures in different fields.

Our conceptual framework also considers differences between emerging and advanced markets in their convergence trends. Insights from such diverse markets contribute to theory development in the international context because most established theories are based on the U.S. context (Steenkamp 2005), and the convergence studies are mostly conducted on European markets (De Mooij & Hofstede, 2002; Stremersch & Tellis, 2004). Moreover, we contribute to the literature

by considering differences in convergence across diverse product categories. We also associate convergence with the growth of the middle class, a rising phenomenon especially in emerging markets. Additionally, we bring in new moderators to the convergence debate by considering the diversity level of countries in terms of ethnicity, linguistics, religion, and culture. Finally, we discuss the consequences of convergence of consumer spending on leading firms' market shares, which have substantial importance for companies.

8. Implications

The globalization of markets necessitates integration of the worldwide strategies for multinational companies (Özsomer & Simonin, 2004). As markets become increasingly borderless, companies need to recognize the similarities among markets in developing their marketing strategies (Levitt, 1983; Özsomer & Simonin, 2004; Yip, 1995). Convergence indicates increasing homogeneity of consumer behavior across markets. Companies need to adjust their global marketing strategies based on the converging or diverging consumer behavior patterns. Global marketing strategies and standardization become more feasible when consumer tastes get more homogeneous worldwide (J. Sheth, 1986).

A common view in the international marketing literature is that global marketing strategy (GMS) has a positive effect on the firm's global market performance (Craig & Douglas, 2000; Özsomer & Simonin, 2004; Zou & Tamer Cavusgil, 1996). Global marketing strategy (GMS) refers to the standardization of marketing programs, configuration and coordination of value-chain activities, and integration of competitive moves across markets (Zou & Cavusgil, 2002). The most influential dimension of the global marketing strategy in the literature is the standardization perspective which refers to standardized marketing programs in terms of product offering,

promotional mix, price, and channel structures (Ohmae, 1989; Szymanski, Bharadwaj, & Varadarajan, 1993; Zou & Cavusgil, 2002).

Companies selling to the world markets using standardized strategies have cost advantages due to economies of scale in production, R&D, and marketing (Jain, 1989; Levitt, 1983). Standardization provides companies with a consistent international image, rapid diffusion of products internationally, and a greater control and coordination (Jain, 1989; Walters, 1986). Using a coherent image of the product and the firm can increase sales; and pooling production activities across countries and using a single marketing plan can reduce costs (Szymanski et al., 1993; Walters, 1986; Yip, 1989). In addition, standardization reduces time-consuming local adaptations, and speeds up a product's time to market (Neff, 1999; Özsomer & Simonin, 2004). Therefore, because of the benefits discussed, companies should identify markets with converging consumer tastes so that they can benefit the positive performance implications of using standardized global marketing strategies for those converging markets.

In summary, as the similarity of the markets increases in terms of consumer behavior and lifestyle, companies can benefit from following strategies with a greater degree of standardization (Jain, 1989). Jain (1989) notes that an important aspect of standardization is about identifying the common segments in different country markets. Identifying convergence and divergence trends in consumer expenditure provides companies guidance in identifying similar markets over time, giving them a competitive edge through standardization strategies.

9. Limitations and Future Research

The current study integrates the global convergence debate from multiple disciplines and extends it in terms of convergence of consumer spending in the international marketing domain. The

proposed conceptual framework is comprehensive as it integrates multiple literatures. However, convergence is inherently a very comprehensive topic. Accordingly, there are many drivers, moderators, and consequences to the convergence phenomenon. This study integrates the key factors as the drivers of convergence, proposes new moderators and important consequences. However, future studies can bring in new perspectives and key constructs to the debate on the convergence of consumer spending. The conceptual framework in this study provides the most relevant aspects of the convergence related to consumer expenditure.

Furthermore, this study provides a conceptual discussion on the topic of convergence of consumer spending. Future studies can provide new insights by empirically testing the propositions developed in this study.

Finally, we have examined convergence across countries. However, the dynamics of convergence within countries can be different than those across countries. Multiple disciplines provide arguments for both the convergence and divergence perspectives related to consumer behavior across countries. A within-country perspective of convergence of consumer spending would add more insights to the convergence topic because countries are composed of historically, culturally or administratively distinct geographic areas. Especially emerging markets include high levels of within-country heterogeneity in consumer expenditure. Although emerging markets are rapidly transforming with fast growth, their growth is not equally distributed over the population. For example, thirty years ago, India had one fifth of the world's poorest people.[3] A recent World Bank study shows that India, the world's second fastest growing economy, now has one third of the world's poorest people (World Bank, 2013). Although emerging markets

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[3] http://www.telegraph.co.uk/news/worldnews/asia/india/10003228/India-has-one-third-of-worlds-poorest-says-World-Bank.html

have a fast growth, and converge toward the income levels of advanced markets, within-country transformations may look different. The growth factors influencing the globalized cities in emerging markets may not be as accessible to many underdeveloped regions of emerging markets. Future studies considering the heterogeneous regions within countries would enrich the convergence debate.

ESSAY 2

EMPIRICAL EXAMINATION OF THE CONVERGENCE OF CONSUMER SPENDING

ACROSS NATIONAL MARKETS

1. Introduction

It is generally assumed that consumption behavior of consumers is converging across markets due to globalization. However, scholarly literature has not adequately addressed this question. One study mentions this gap as "*the often suggested, but never tested, hypothesis of global convergence of consumer needs and wants*" (Steenkamp & Ter Hofstede, 2002). As a response to this call, the current study examines if consumers are increasingly becoming more similar in their spending behavior across countries over time. Our goal is to empirically investigate whether global convergence of consumer spending across markets occurs over time.

The recent advancements in technology, travel and tourism, economic integration of nations, and labor mobility are factors that contribute to the homogenization of consumer demands (Alden et al., 1999; Holt, Quelch, & Taylor, 2004; Jain, 1989). Consumers no longer relate themselves to their own culture only, but are influenced by other cultures that they are exposed to via such novel outlets as social media, internet, and facilitated travel and communication tools. However, some scholars argue that local cultures and local consumption patterns still prevail over global trends (De Mooij, 2000; Jackson, 2004), while other scholars argue for a mix of the global and local forces (i.e. glocalization) (Ger & Belk, 1996; Maynard & Tian, 2004).

The debate of homogenization of global consumer needs and wants is an ongoing debate in the literature (Merz, He, & Alden, 2008). Moreover, it has considerable implications for companies in terms of global marketing strategies. Yet, there are not many studies examining the topic with

an empirical approach in a global context. In this paper, we empirically test the global

homogenization of consumer behavior in terms of their spending on different product categories.

Our paper provides a systematic empirical approach and evidences to contribute to the resolution

of the global consumer convergence debate.

Using data on consumer expenditure across 71 countries and 21 product categories between 1990

and 2014 (over a 25-year time period), we test global convergence of consumer spending. We

adopt methods from the literature such as the coefficient of variation of consumer expenditure.

However, since the coefficient of variation provides limited information at the country-level, we

develop a new measure at the country and product category level. We label this new measure the

budget allocation gap. We also adopt the regression-based neoclassical growth models from the

economics literature to test the convergence hypothesis.

Our findings from the empirical analyses reveal that the convergence of consumer spending

across different product categories and countries has been increasing in the last decades,

providing evidences for the global convergence assumption. Although there are a few product

categories showing slightly diverging trends, there is an overall converging pattern in consumer

spending behavior.

Our study addresses the gaps in the literature to empirically test the global convergence

hypothesis on a global scale. There are a limited number of empirical studies discussing the

convergence of consumer behavior, however these studies are narrow in their methodological

approaches (De Mooij, 2003; De Mooij & Hofstede, 2002) or their contexts (e.g. limited

geographies such as Europe or Emerging Markets) (De Mooij & Hofstede, 2002; Dholakia &

Talukdar, 2004). Our study contributes to the literature methodologically, substantively,

contextually, and managerially. Methodologically, we develop a comprehensive method of testing convergence across product categories and countries, propose new measures of convergence, and incorporate methodologies from the economics literature. Substantively, we find evidences for the convergence assumption that has long been debated in the literature. Contextually, we examine convergence on a global scale rather than focusing only on limited geographic areas such as the Western markets (De Mooij, 2000, 2003; De Mooij & Hofstede, 2002) or emerging markets (Dholakia & Talukdar, 2004). Finally, managerially, our method to test convergence provides practitioners with a tool to track the convergence trend, identify converging or diverging markets, and develop relevant global marketing strategies.

The rest of this paper is structured as follows: In the next section, we provide a literature review and conceptually discuss global convergence. Then, we develop methods and measures to test the convergence hypothesis. In the fourth section, we present results for the convergence of consumer spending. We then provide a discussion of the findings. Finally, we discuss the contributions and implications, and provide possible future research areas.

2. Theoretical Background on the Convergence Debate

Convergence is a concept extensively debated in many fields of science. The definition of convergence differs across different scholarly fields. Fundamentally, convergence refers to the reduction of diversity for a given sample or population (Mitry & Smith, 2009; Mueller & Taylor, 2013). In biology, convergence refers to the reduction in diversity of the genes; in economy, it refers to the decreasing income gap between rich and poor countries (Mitry & Smith, 2009). The definition of convergence also differs by context. At the macro systems level, it represents the homogenization of economic systems, demographic systems, and value systems; whereas at the

industry level, it refers to the reduction of entry barriers across industry boundaries (Lind, 2004); and at the consumer level, it represents the homogenization of consumer behavior (M. De Mooij, 2000, 2003; M. De Mooij & Hofstede, 2002). Our focus in this study is the convergence of consumer spending across countries. We define convergence of spending as the homogenization of consumer expenditure such that consumers become more similar in their spending behavior toward different product categories across different countries. We operationalize it as the similarity of consumer budget allocation (in percentage) to different product categories across countries. For example, as the consumer budget percentage allocated to different product categories (e.g. clothing, automobiles, appliances) gets closer to each other in different countries, then there is evidence of a global convergence.

There is a considerable debate in the literature on whether the national markets have been converging. On one end of the spectrum are the proponents of the convergence hypothesis (T. Friedman, 2005; Fukuyama, 1992; Ganesh, 1998; Levitt, 1983; Rapaille, 2015; Ritzer, 1998; Yip, 1995). For example, Levitt (1983) argues that the world markets and consumer tastes are becoming more homogeneous due to technological advancements, increasing global communication, travel and transport. Similar consumer segments across countries are forming (Ter Hofstede, Steenkamp, & Wedel, 1999; Ter Hofstede et al., 2002; Yoo et al., 2011). Sheth (2011) argues that the rise of emerging markets, especially China and India (which he refers as Chindia), leads the way to a fusion of the East and West markets. As much as there has been Westernization of emerging markets, there has also been Easternization of the world with respect to values and lifestyles. Therefore, Sheth (2011) argues for the fusion of cultures and values in marketing mix elements for companies in their global marketing strategies.

On the other end of the spectrum, some scholars argue that there is no evidence of homogenization (Craig et al., 1992; De Mooij, 2010, p. 5; Huntington, 1987, 1993). The focal point of this perspective is often the cross cultural differences. These scholars claim that global consumers increasingly become more dissimilar in their behavior because of cultural differences. As income increases in most of the markets, people tend to spend in a way to emphasize their distinct civilizational identities. In particular, culture-bound products and services such as food and clothing resist the shift toward globalization (Johansson, 2009, p. 21).

Furthermore, standardization of the marketing mix due to more homogeneous markets, although might be useful for global control as suggested by Levitt (1983), will not conform to a true market orientation (Johansson, 2002, p. 457). Johansson argues that, although Levitt's perspective of "global imperative" has been dominating in the international business arena since 1980s, there is a renewed interest on localization and finding the right balance in coordination strategies toward local differences in the new millennium (Johansson, 2009, p. 375).

There is also a third side to the convergence debate arguing that the markets are being neither isolated nor integrated. The integration of markets and cultures fall in between these two extremes. Ghemawat (2003) refers to this state of incomplete cross-border integration as "semi-globalization". Ralston et al. (1997) refer to it as the "crossvergence" of cultures that represents a temporary and transitional state during which cultural values slowly change at different rates over time. Ghemawat has developed the CAGE framework that measures the cultural, administrative, geographic and economic distances among countries (Ghemawat, 2007). Based on this framework, the author posits that, although advanced economies are highly globalized and integrated with the world markets, emerging economies are still at the early stages of developing globalization capabilities in terms of capital, trade, people, and information flows

(Ghemawat & Altman, 2013). Therefore, the convergence level of consumers is likely to increase as the cross-border integration of markets increases.

Overall, the convergence debate has long been discussed in the literature, and there are advocates as well as critics to the convergence hypothesis.[4] However, the recent decades have exposed the world markets to unforeseen changes. The globalization processes have accelerated; countries have become more integrated through economic blocs and trades; and the information age, especially the social media, have connected consumers across markets more than ever before. Companies are increasingly under the pressure of designing products for global acceptance (Shocker, Srivastava, & Ruekert, 1994). Dynamic interactions between firms and customers in global markets have overshadowed the cross border differences (Akaka, Vargo, & Lusch, 2013; Douglas & Craig, 2011). The emphasis on convergence and consolidation of international markets has increased (Cavusgil, Deligonul, & Yaprak, 2005). Thus, in the light of the recent developments, scholars need to reevaluate the evidences on the convergence debate. These recent changes in global markets have mainly accelerated the convergence phenomenon among consumers in terms of their spending behavior. There are several reasons for why we believe that the recent developments have caused the world markets to become more homogeneous and converging.

First, a new world culture has been emerging due to globalization processes and increasing interconnectedness of diverse geographies in the last few decades (Alden et al., 1999; Hannerz, 1990). This new culture, which is referred as the *global consumer culture*, represents people's desire to associate themselves with *global citizenship* and become a part of the *global village*

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[4] Summaries of the convergence and divergence perspectives from different fields are presented in Table 1 and Table 2, respectively.

(McLuhan, 1964; Steenkamp & De Jong, 2010; Strizhakova et al., 2008). This unique global culture has generated a shared consciousness due to globalization processes such as advances in transportation and communication technology, and contributes to the homogenization of the world markets (Alden et al., 1999; Jain, 1989).

Second, the facilitated interconnectedness of people and cultures through increased communication, media, travel and geographic mobility has also enhanced the predictions of the social and observational learning theories. Social learning theory refers to all of the mechanisms through which people learn from each other using formal or casual communication methods (Bandura & McClelland, 1977). Observational learning constitutes a form of social learning in which an individual's behavior is affected and shaped by observing the behavior of other individuals (Banerjee, 1992; Bikhchandani, Hirshleifer, & Welch, 1992; Cai, Chen, & Fang, 2007). The increased exposure of consumers to different cultures due to globalization increases the chances that an individual's behavior in a culture is affected by the behavior of people from other cultures. Therefore, the convergence of consumer behavior across nations increasingly becomes more conceivable than before.

The "Millennials" represent the face of the new global culture due to the interconnectedness and the information age (Rapaille, 2015). Rapaille (2015) refers to this young generation as the "Global Tribe". Because of the information revolution and the availability of technological tools, the global tribe across countries behave the same, use the same tools, have the same rituals, and generate a new global philosophy. This new set of global values is being shaped and promoted by multicultural individuals who travel frequently, live in hub areas, and freely share their knowledge and experiences with the rest of the world using technology (Rapaille, 2015). The

new global generation drives heightened levels of global connection unlike ever in the past across all markets in the world.

Third, the rise of mass consumption societies in the world provides another theoretical explanation from the sociology literature for the occurrence of global convergence. A mass consumption society is defined as a society in which a majority of households, rather than a few privileged households, constantly expand their range of consumer goods as a result of increased productivity of industries (Katona, 1964; Matsuyama, 2002). As productivity of industries increases, the prices of consumer goods decrease. In this way, luxury goods become necessity goods. For example, before 1960s, washing machines were luxury goods in the U.S. but in recent decades they have become necessity goods for most of the world. Likewise, as income and productivity increases in emerging and developing countries, previously unaffordable consumer goods such as washing machines become affordable for a larger number of households. The increase in the productivity and the penetration of consumer goods generates mass consumption societies, which, in turn, leads to further improvements in productivity, creating a virtuous cycle (Matsuyama, 2002). With advancements in technology and communication, the productivity of industries improves globally and the scope of the positive spillovers and externalities spread across countries. Factors such as the economic reforms in major emerging markets including Brazil, Russia, India, and China (BRIC) to adopt free markets, worldwide liberalization of trade and investment, and regional economic integration such as the ASEAN, Mercosur, and the European Union helped productivity increase of industries across countries (J. N. Sheth, 2011). As a result, mass consumption societies similar to each other in their consumption behavior arise across countries, contributing to the emergence of global convergence of consumer spending.

Finally, another convergence debate in the economics literature provides foundations for the convergence of consumer spending behavior across countries. The convergence hypothesis of the neoclassical growth model assumes that poor countries tend to grow faster in per capita income than wealthier ones. Seminal studies by Barro and Sala-i-Martin show that convergence applies when the average growth rate of per capita income is negatively related to the initial level of per capita income (Barro, 1991; Barro & Sala-i-Martin, 2004). The lower the initial per capita income level, the higher the growth rate of per capita income. It is possible to extend this argument of convergence from per capita income to per capita expenditure. As income levels converge, expenditure levels are also likely to converge. General prosperity growth in the world facilitates the process of the convergence of consumer spending by creating affordability. Thus, the neoclassical growth models in the economics literature form another basis for the advocates of the convergence of consumer spending.

Since the initial call to test the global convergence of consumer needs and wants by Steenkamp and Ter Hofstede (2002), the debate between divergence versus convergence has not been resolved. There still exists a wide range of arguments on either side of the debate. A study argues that divergence in consumer behavior can be explained by cultural differences (De Mooij & Hofstede, 2002); another study suggests that divergence in new product growth can be explained by economic wealth rather than culture (Stremersch & Tellis, 2004); yet, another study claims that converging rather than diverging macro-environmental trends and consumer behavior are prevalent in European Union countries (Ganesh, 1998; Leeflang & Van Raaij, 1995). There are also studies suggesting convergence in the form of similar consumer segments across countries (Douglas & Craig, 2011; Mueller & Taylor, 2013; Yoo et al., 2011).

The lack of consensus on the convergence debate in the literature can be attributed to a lack of empirical studies providing evidences for either side of the debate. The empirical examination of the convergence hypothesis is very limited in the scholarly literature. Studies by De Mooij (2000, 2003, 2010) discuss convergence with a focus on cultural values. Although the author suggests a measure of convergence (De Mooij, 2010), it is limited because it only compares two time periods, rather than providing a longitudinal data analysis. The empirical tests in these studies examine the effect of culture on consumer spending. The main conclusions indicate that culture becomes a more significant determinant on consumer spending over time. As a result, the author argues that consumers diverge rather than converge in consumption. However, the empirical analyses in these studies do not include a measure of convergence.

Another study by Dholakia and Talukdar (2004) also examines convergence. The authors develop a measure of convergence and relate it to the economic and social integration levels of countries. However, this study is also limited as it only captures emerging markets and the U.S. rather than a heterogeneous set of countries. The context of their study is limited for testing the global convergence hypothesis. Additionally, in measuring convergence, they only consider the absolute differences of expenditure between countries. However, this approach is also limited in that it does not capture the relative spending levels across product categories.

In sum, to date, researchers have not systematically analyzed whether consumers are becoming more similar in their spending patterns on a global scale. Using data on 71 countries and 21 product categories between 1990 and 2014, our study provides a pioneer systematic empirical approach in testing the global convergence hypothesis of consumer expenditure that allows for comparisons across both countries and product categories.

3. Methodology

We employed a proprietary data set from the Global Market Information Database (GMID, also known as Euromonitor or Passport). The data set includes annual per capita expenditure data (US$, inflation adjusted) for 21 product categories (e.g. food, clothing, appliances) in 71 countries from 1990 to 2014. (See Table 3 for the list of product categories).

Insert Table 3 here

We develop three alternative methods to empirically test the convergence argument. These three approaches are: (i) coefficient of variation method; (ii) budget allocation gap method; and (iii) regression method based on the neoclassical growth model.

In the first method, we calculate the coefficient of variation of consumer expenditure across 71 countries for a specific product category in a year. We then compare the coefficient of variation over time such that, if the coefficient of variation decreases over time, it indicates a decreasing heterogeneity of consumer spending, or an increasing convergence, across countries. Otherwise, if the coefficient of variation increases over time, it indicates divergence across countries.

However, since the coefficient of variation is an aggregate measure across countries, we develop a new measure of convergence at the country level in the second method which we refer as the *budget allocation gap*. The budget allocation gap measures the distance among countries in terms of the consumer budget percentage allocated to different product categories. Our proposed budget allocation gap measure allows to test convergence at a more granular level than the previously established coefficient of variation method.

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In the regression model based on the neoclassical growth theory, the dependent variable is the annual growth rate of per capita consumer expenditure. The key independent variable is the initial per capita expenditure level (the per capita expenditure level in the previous year, in US$). The main idea is that, if convergence occurs, countries with lower initial per capita expenditure levels exhibit higher growth rates of per capita expenditure than countries with higher initial per capita expenditure levels.

We test convergence below using all three methods: coefficient of variation, budget allocation gap, and regression methods.

3.1. Coefficient of Variation Method

One method used in the business literature to identify convergence is computing the dispersion measures including the standard deviation, variance, and the coefficient of variation (De Mooij, 2010, p. 58). Among the dispersion methods, the coefficient of variation method is preferred more because the shifts in the mean are adjusted in this method (J. B. Williamson & Fleming, 1977). The formula for the coefficient of variation is:

$$(1) \qquad Coefficient\ of\ Variation = \frac{\sigma}{\mu}$$

where σ represents the standard deviation and μ represents the mean of consumer expenditure across 71 countries for a product category in a year. We compute and compare the coefficient of variation of consumer expenditure across 71 countries for each of the 21 product categories over a 25-year time period. Convergence is observed when there is a decrease in the coefficient of variation over time, such that the higher the decrease, the higher the convergence rate.

Decreasing coefficient of variation is an indicator of decreasing heterogeneity among countries with respect to consumers' spending patterns across different product categories.

Over a specified time period, the mean convergence (MC) rate per year can be calculated as (adapted from De Mooij, 2010):

$$(2) \qquad MC/year = \frac{(CV_{t2} - CV_{t1})}{CV_{t1}} \; x \; 100 \; / \; (t_2 - t_1)$$

where MC/year is the mean convergence rate per year, CV_{t1} is the coefficient of variation at t_1, and CV_{t2} is the coefficient of variation at t_2.

However, there is a restriction in using the coefficient of variation (CV) as a measure of convergence because CV of expenditure is defined not at the country level, but across countries (i.e. only one CV value is calculated for all 71 countries). Aggregating the data across countries for a given product category in a given year limits the potential insights to convergence. Therefore, we develop a new measure of convergence at the country level, referred as the *budget allocation gap*.

3.2. Budget Allocation Gap Method

To measure the budget allocation gap, we first consider all 21 product categories as the representative basket of consumer goods. The total per capita amount spent on this basket of goods in a country in a year represents 100 percent of the consumer budget. We then compute the percentage share of expenditure on each product category within this basket as shown in equation (3) below. We refer to this percentage share of expenditure on each product category within the entire basket as the *budget allocation* to that specific product category.

$$(3) \qquad Budget\ Allocation_{cpt} = \frac{Expenditure_{cpt}}{Expenditure_{ct}} \quad ,$$

where *c* indicates country, *p* indicates product category, and *t* indicates time in years.

We then calculate the *budget allocation gap* by subtracting the mean budget allocation of all countries from the budget allocation in a particular country. Furthermore, we take the absolute value of the difference because we are interested in the Euclidean distance to the mean of all countries, or the magnitude of convergence, rather than the direction (i.e. positive or negative gap) as convergence can come from either direction. Finally, we divide the difference by the mean budget allocation of all countries to that product category in order to obtain the budget allocation gap relative to the mean values as specified in equation (4). This gives us a more meaningful comparison across countries and product categories.

$$(4) \qquad Budget\ Allocation\ Gap_{cpt} = \frac{\left| Budget\ Allocation_{cpt} - Mean\ Budget\ Allocation_{pt} \right|}{Mean\ Budget\ Allocation_{pt}} \quad ,$$

where *c* indicates country, *p* indicates product category, and *t* indicates time in years.

To illustrate, a budget allocation gap example would be: If the percentage of consumer budget allocation to appliances in China in 2005 is 6 percent, whereas the mean percentage of consumer budget allocation to appliances in all countries in 2005 is 5 percent, then the budget allocation gap for China in appliances in 2005 is 0.2 as shown in equation (4.1). It means that the budget allocation to appliances in China is 0.2 times more different than the average budget allocation to appliances in the world.

$$(4.1) \qquad Budget\ Allocation\ Gap_{c=China\ p=Appliances\ t=2005} = \frac{\left| 6\% - 5\% \right|}{5\%} = 0.2$$

The *budget allocation gap* is based on the (dis)similarity measure used in the study by Dholakia and Talukdar (2004). The authors use the relative per capita consumption levels of emerging markets versus U.S. to examine if the consumption levels in EMs converge toward the consumption levels in the U.S. They define consumption gap as the difference in consumption levels between the U.S. and each of the EMs as a measure of (dis)similarity. Our study differs from Dholakia and Talukdar (2004) in examining convergence on a global scale. Therefore, we take the mean budget allocation percentage of all countries as the reference point for convergence, instead of the U.S. expenditure levels. Furthermore, rather than the absolute expenditure distance of countries from each other, we are interested in the weights or importance in each country given to every product category within the basket of all 21 product categories. If the weights, or percentage of budget, allocated to each product category across countries become more similar over time, we can confidently infer that consumers are becoming homogenized in their consumption behavior. Therefore, our measure provides a superior comparison of consumer expenditure across countries by taking into account consumer spending on a set of product categories, comparing the relative weights or budget allocated to every product category. We create a reference point for each product category at the country level by using the budget allocation gap as a measure of convergence.[5]

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[5] As the reference point in our *budget allocation gap* formula (Equation 4), we take the *mean budget allocation* of all 71 countries in a particular product category in a particular year. An alternative would be to take the *median budget allocation* instead of the *mean budget allocation*. However, since we are comparing the percentage budget allocations across countries rather than the absolute expenditure levels, the mean values do not present issues such as skewness. That is, the mean expenditure levels in monetary value might be skewed across countries, however the budget allocation percentages are not necessarily skewed because we calculate the within-country budget allocations (i.e. total spending in a country on 21 product categories represents 100% of consumer budget in each category). After calculating within-country budget allocations, we compare the budget allocations of each country to the mean budget allocation of all countries in that particular product category. This way, we eliminate the monetary value differences across countries. Yet, we still compute the median budget allocations. Appendix 1 shows that the mean budget allocation values are very similar to the median budget allocation values for each product category.

3.3. Regression Methods in Measuring Convergence

The economics literature uses regression methods to test convergence of per capita income across countries. In the neoclassical growth models, regression models are applied to reveal the relationship between GDP growth rates and initial GDP levels. If the slope is negative (i.e. negative relationship between GDP growth rates and initial GDP levels), it suggests that poor countries tend to grow faster than rich ones, leading to convergence in terms of income (Barro, 1991). Neoclassical growth models examine economic growth between two-time periods. We adapted this approach by examining the expenditure growth for each consecutive year in our 25-year time frame. The expenditure levels of the previous year represent the initial expenditure levels. We regress expenditure growth rates on the expenditure levels of the previous year, controlling for country fixed effects, product category fixed effects, and year fixed effects.

We specify equation (5) to model the relationship between expenditure growth rates and initial levels of expenditure, controlling for country fixed effects, product category fixed effects, and year fixed effects. A negative slope indicates that countries with lower initial expenditure levels are growing faster: The lower the initial expenditure, the higher the expenditure growth rate, leading to convergence of expenditure levels. On the other hand, a positive slope indicates the opposite that higher initial expenditure levels grow faster, leading to divergence of expenditure levels. If lower levels of initial expenditure grow faster than higher levels of initial expenditure, this trend will likely lead to countries with lower levels of expenditure catching up with countries that have higher levels of expenditure. We also include the quadratic term of the initial expenditure to test if the convergence trend attenuates or intensifies as initial expenditure levels rise.

$$(5) \quad \textit{Expenditure growth rate}_{cpt} = \alpha + \beta_1 \; (\textit{expenditure}_{cp(t-1)}) + \beta_2 \; (\textit{expenditure}_{cp(t-1)})^2 +$$

$$\lambda_c \; (\textit{country fixed effects}_c) + \rho_p \; (\textit{product category fixed}$$

$$\textit{effects}_p) + \tau_t \; (\textit{year fixed effects}_t) + \varepsilon_{cpt}$$

where expenditure growth rate is the annual growth rate of per capita consumer expenditure, over the 25-year time period: from 1990 to 2014, for country c and product category p. The initial expenditure is the per capita expenditure level of the previous year of a country c for a product category p. If β_1 results in a significant negative coefficient, there is evidence of a convergence trend. It would mean that the lower the initial expenditure level, the higher the growth rate of expenditure. This leads to the convergence of expenditure levels. The quadratic term shows how the effect of initial expenditure on expenditure growth rate changes as initial expenditure level increases. We control for the fixed effects for country, product categories, and years. The fixed effects account for the unobserved heterogeneity across countries, industries, and years in the panel data. We have a 25-year time period, but even shorter time periods (e.g. five years) are adequate for fixed effects models due to controlling for unobserved heterogeneity across economies (Barro & Sala-i-Martin, 2004, pp. 495-496).

4. Results

The descriptive statistics for the key variables related to the expenditure measures are presented in Table 4.

Insert Table 4 here

4.1. Results for the Coefficient of Variation Method

First, we use the coefficient of variation method as suggested by De Mooij (2010, p. 58). More specifically, we compute the coefficient of variation of per capita expenditure across countries for a given product category in a year based on equation (1). We choose the earliest and the latest year in the data set to see the overall change in the coefficient of variation. Coefficient of variation of expenditure across countries in the earliest year ($⟦CV⟧\_1990$) and that in the latest year ($⟦CV⟧\_2014$) are computed and compared. If there is a decrease in the coefficient of variation from 1990 to 2014, there is convergence. On the other hand, if there is an increase in the coefficient of variation from 1990 to 2014, there is divergence. The mean convergence (MC) rate is calculated by using equation (6) below based on equation (2).

$$(6) \qquad MC/year = \frac{(CV_{t2014} - CV_{t1990})}{CV_{t1990}} \; x \; 100 \; / \; (2014 - 1990)$$

The results for the mean convergence rate between 1990 and 2014 are negative for 18 out of 21 product categories, implying that heterogeneity of consumer spending across countries has generally decreased between these two time periods. The three product categories with increasing heterogeneity are clothing, footwear, and home furnishings. Table 5 shows the mean convergence rate for each of the 21 product categories between 1990 and 2014. The mean convergence rate of all categories is -0.56 which indicates an overall convergence across all product categories. Figure 2 plots the mean convergence rate for each category between 1990 and 2014. Air travel, hardware and DIY goods, food, and telecommunications services are the most converging categories between 1990 and 2014.

Insert Table 5 here

Although comparing two time periods gives an idea of how heterogeneity of consumer spending across countries changes between these two specified time periods (i.e. 1990 versus 2014), this approach proposed by De Mooij (2010) is limited because it does not give the entire convergence pattern over time. Therefore, we further improve this method by observing the convergence pattern for each consecutive year from 1990 to 2014. This way, we can evaluate the convergence trend over time and observe if there are unusual patterns during certain years. This insight would not be possible by using any two-time periods as suggested by De Mooij (2010, p. 58). Plotting the coefficient of variation in each year from 1990 to 2014 in Figure 3 shows a gradually decreasing heterogeneity which implies that convergence occurs even when tracking each year between 1990 and 2014.

In order to test the statistical significance of the trends in Figure 3, we use a regression model with the coefficient of variation as the dependent variable, and annual trend variable (year) as the independent variable. We also interact the trend variable (year) with product category dummies to distinguish the trend effect by product category:

(7) $Coefficient\ of\ variation_{pt} = [\alpha + \beta_1\ (Year_t)] * Product\ category\ dummy_p$

where *p* indicates product category and *t* indicates annual time trend. The results in Table 6 suggest that 18 out of 21 product categories show a significantly decreasing trend in coefficient of variation of expenditure. For example, the coefficient of variation of consumer spending on air travel across all 71 countries decreases by 0.044 in one year, on average. Similarly, most of the categories have a significantly decreasing divergence trend (or increasing convergence trend) in terms of coefficient of variation of expenditure. The three categories with an insignificant time trend are footwear, clothing, and furnishings. These results confirm the global convergence trend.

Insert Table 6 here

In sum, by using the coefficient of variation method, we find an overall convergence pattern across 71 countries through both decreasing mean convergence rates between two time periods (1990 and 2014) and decreasing coefficient of variation in each consecutive year over the 25-year time period. Decreasing coefficient of variation shows that the heterogeneity among countries with respect to their spending across different product categories has been decreasing. Since convergence represents the homogenization of consumers across countries in terms of their spending patterns, the decrease in heterogeneity indicates that there is a globally converging consumer spending behavior.

4.2. Results for the Budget Allocation Gap Method

When we want to examine convergence at the country level, using the coefficient of variation presents limitations because it is an aggregate measure across all countries. In order to examine

convergence both at the product category level as well as the country level, we develop a new, continuous measure of convergence. We refer to this new convergence measure as the *budget allocation gap.* As specified in equation (4), we measure it by calculating the budget allocation to each product category in each country in a year, then subtracting the mean budget allocation to that product category in all countries, and finally dividing the difference by the mean budget allocation of all countries. As a result, we obtain a measure of how different a country's budget allocation in a category is from the average budget allocation of all countries on that particular product category.

First, we compare the new measure of budget allocation gap with the coefficient of variation method by doing a convergence test across product categories. Although this new variable is different from the coefficient of variation method, plotting the budget allocation gap across product categories over time results in a similar pattern. Figure 4 shows that the budget allocation gap across product categories is generally decreasing over time. Product categories with the highest gaps in 1990 have been narrowing down the difference over time through 2014. For example, the average budget allocation gap of all countries on air travel spending is 0.82 in 1990, indicating a high level of heterogeneity across countries in air travel spending. However, this budget allocation gap reduces to around 0.64 in 2014. It means that the stark differences in the average percentage of budget allocated to air travel spending across all 71 countries has been reducing over time. Although there is a stagnation since 2006, the overall pattern shows a decreasing budget allocation gap, or an increasing convergence, across product categories from 1990 to 2014.

Insert Figure 4 here

We use a similar regression model as discussed above to test for the significance of the decrease in the budget allocation gap across product categories. The dependent variable is the budget allocation gap, and the key independent variable is the annual trend variable (year), interacted with the product category dummies:

$$(8) \qquad Budget\ Allocation\ Gap_{pt} = [\alpha + \beta_1\ (Year_t)] * Product\ category\ dummy_p$$

where p indicates product category and t indicates annual time trend. The results in Table 7 suggest that 14 out of 21 product categories have a significantly decreasing trend in budget allocation gap. For example, the difference in the percentage of budget allocated to air travel across all 71 countries decreases each year by about 1% (or 0.0099 times) of the mean budget allocation of the world, on average. There are four product categories with an insignificant trend. These are telecommunications equipment, DIY services, furnishings, and household utensils. There are also some product categories showing a slightly diverging trend (i.e. increasing budget allocation gap). These are textiles, clothing, and tobacco. Although the convergence trend is significant in a lower number of product categories in the budget allocation gap method compared to the coefficient of variation method, there is still a predominantly converging trend in the majority of the product categories.

Insert Table 7 here

The findings above show that both the coefficient of variation and the budget allocation gap methods suggest an overall convergence trend for most of the product categories. We can now

test the convergence trend at the country level as well because the new measure we propose, the budget allocation gap, allows for testing convergence both at the product category and country level, unlike the previously used coefficient of variation method.

To compare convergence at the country level, we plot the budget allocation gap across countries from 1990 to 2014. Figure 5 shows the average budget allocation gap of each of the 71 countries in 1990 and in 2014. The map color codes the budget allocation gap such that the budget allocation gap decreases, or convergence increases, as the color goes from warmer red to cooler green. The map in 1990 is generally warmer in color, whereas the map in 2014 is cooler green in most of the countries. As the map becomes greener over time, it indicates that the budget allocation gap has been decreasing in most of the countries, hence increasing convergence across countries.[6] The map can be interpreted such that the average budget allocated to all product categories in the U.S. differs from the mean budget allocated to all product categories in all 71 countries by about 0.40 times the mean budget allocation of the world in 1990. However, this average budget allocation gap in the U.S. decreases to about 0.35 in 2014.

Insert Figure 5 here

Another way to explore the changes in the budget allocation gap across countries is to map the differences in the budget allocation gap over time. Figure 6 shows the changes in the budget

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[6] For illustration purposes, Figure 5 shows the average budget allocation gap of each country for all the product categories. Yet, the budget allocation gap measure allows for a more granular comparison of every product category in every country in each year. A sample illustration is presented in Figure 11 comparing the budget allocation gap in only the "personal care" category across countries in 1990 versus 2014. This comparison can be broken down to every product category, every country, and every year.

allocation gap from 1990 to 2014. It takes the difference between the budget allocation gap in 1990 and 2014. As the gap reduces over time, the change is negative, suggesting a convergence trend. On the other hand, if the gap increases over time, the change is positive, showing a diverging trend. For example, Russia has a decrease of 0.19 in its budget allocation gap from 1990 to 2014. This is the same difference we have presented in Figure 5 (for Russia: 0.38 – 0.57 = 0.19). It shows that the average budget allocation in all product categories in Russia is getting closer to the mean budget allocation of the world over time. The pattern is similar for many countries. The map in Figure 6 color codes the change such that darker regions show higher convergence. Overall, most countries have dark shades, confirming convergence.

Insert Figure 6 here

In Figure 6, a spatial pattern becomes obvious for North and South America since all countries except Mexico show a converging trend. A second spatial inference can be made for East Asian countries and Australia which show diverging trends. The rest of the regions show mixed convergence patterns.

Similar to the trend analysis, we compute the trend coefficients for each country. We use a regression model with the budget allocation gap as the dependent variable, and we interact the annual trend variable (year) with country dummies to distinguish the trend effect by country:

$$(9) \quad Budget\ Allocation\ Gap_{ct} = [\alpha + \beta_1\ (time_t)] * Country\ dummy_c$$

where c indicates country and t indicates annual time trend. Table 8 presents the results for the trend coefficients of each country. The trend coefficients are significantly negative for 46

countries at $\alpha = 0.1$ level. It implies that budget allocation gap is significantly decreasing, or convergence is significantly increasing, for 46 countries. For example, Belarus has been reducing its gap with the rest of the world by about 0.016 times the world's mean budget allocation per year. In other words, the average budget allocation in Belarus is getting closer to the mean world budget allocation by about 0.016 times the mean world budget allocation per year. The remaining 17 countries show divergence, and 8 countries lack significant trend effects.

Insert Table 8 here

The coefficients in Table 8 are trend coefficients for the budget allocation gap which actually measure gap or divergence changes across countries over time. So, we reverse the sign of the budget allocation gap trend coefficients to obtain convergence trend coefficients. Using the reverse signs of the trend coefficients obtained in Table 8 we illustrate the convergence trend coefficients in Figure 7 after excluding the countries with insignificant trend coefficients. Figure 7 shows that countries with positive trend coefficients are converging, whereas those with negative trend coefficients are diverging. These are the same trend coefficients presented in Table 8, however, for ease of interpretation, the opposite signs are presented as convergence trends.

Insert Figure 7 here

The trend coefficients show that most of the countries have been converging in their budget allocation behavior over time. It implies that the percentage of budget allocated to different product categories are getting similar across countries over time, indicating increasing similarity of spending behavior among countries. Figure 8 also confirms this finding from a different perspective. Figure 8 shows the relationship between initial budget allocation gap in 1990 and the convergence trend coefficient from 1990 to 2014 for each country. The positive linear trend suggests that countries that had larger initial budget allocation gap in 1990 have higher convergence trend coefficients. Countries with higher initial gaps have converged more over time. This trend eventually leads to higher overall convergence across countries because initially more diverged countries converge more over time.

Insert Figure 8 here

In sum, by using the new budget allocation gap measure, we are able to detect an overall convergence pattern both across product categories and across countries between 1990 and 2014.

4.3. Results for Regression Methods in Measuring Convergence

Another method we propose to measure convergence is based on the neoclassical growth models in the economics literature. Parallel to testing the relationship between annual GDP growth rates and initial GDP levels in the neoclassical growth models, we test the relationship between annual expenditure growth rates and initial expenditure levels of each country.

First, we graphically check the relationship between expenditure growth rates and initial expenditure levels. Figure 9 plots expenditure growth rates and the initial expenditure levels of

each country averaged over all product categories and all years. The plot suggests a quadratic relationship between the growth rate and the initial levels of expenditure. It implies that countries with lower initial expenditure levels tend to grow higher than those with higher initial expenditure levels. However, as the initial expenditure level increases, the decrease in expenditure growth rate attenuates.

Insert Figure 9 here

Second, we do a regression model to test this relationship. We regress annual expenditure growth rates on initial expenditure levels, controlling for country fixed effects, product category fixed effects, and year fixed effects. Table 9 displays the results. The model is significant ($p < 0.0001$) with R-square = 0.60. The coefficient is significant and negative for the initial expenditure level ($\beta_1 = -0.015$; $p < 0.0001$), supporting the convergence hypothesis of consumer expenditure. The negative coefficient indicates that countries that have lower initial expenditure levels are likely to grow higher in their expenditure than countries that have higher initial expenditure levels. More specifically, the coefficient implies that a country with a US \$1 lower per capita expenditure level in a year is expected to increase its per capita expenditure level by 0.015 percent in the subsequent year. As lower levels of initial expenditure grow faster than higher levels of initial expenditure, this trend will eventually lead to convergence of consumer spending across countries over time. We also test for the quadratic effect of the initial expenditure. It is significantly positive, though very close to zero ($\beta_2 = -0.000002$; $p < 0.0001$). This shows a very slight attenuation of the convergence trend as initial expenditure levels increase. Yet, the quadratic effect is economically negligible.

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5. Discussion

Our findings confirm that there is an overall convergence trend occurring across countries in the last 25 years. Although some categories show a slight divergence, there is still a dominantly converging trend for most of the product categories. Using several different measures (e.g. coefficient of variation, and the budget allocation gap) and methods (e.g. regression method based on the neoclassical growth models), we show evidence that there is a consistent convergence pattern in consumer spending behavior. The few categories that do not show convergence such as clothing are categories heavily dependent on local fashion. The reason that these categories do not visibly show convergence may be because of the rooted predispositions in culture. Our findings suggest that heterogeneity across countries is increasing in terms of the percentage of budget allocated to these product categories (e.g. clothing, textiles, and tobacco). However, other than these few product categories, the budget allocation or the weight or importance given to the majority of the product categories is increasingly becoming similar across countries over time.

Although the two measures of convergence, the coefficient of variation and the budget allocation gap, show some differences in the convergence trend of product categories, both measures suggest that most of the product categories are converging. Thus, the main conclusion that global convergence is occurring is consistent in both measures. Nevertheless, the budget allocation gap is a better measure than the coefficient of variation because the former provides a more refined

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measure of convergence both at the product category and country levels, whereas the latter provides an aggregate measure of convergence for all countries involved.

An advantage of the budget allocation gap measure is that it allows to test convergence both at the product category and country level simultaneously. For example, our country-level analysis shows that there is a predominantly converging trend in most of the countries, however a few countries such as China have a diverging trend, on average. Since the budget allocation gap provides a continuous measure of convergence at all levels (i.e. at the country, product category, and year levels), we can examine in depth to identify in which categories China shows divergence. Our in-depth analysis shows that China is diverging to a greater extent in some specific categories including personal accessories, clothing, footwear, and telecommunications equipment. For example, in 2014, the percentage of budget allocated to personal accessories (e.g. handbags, watches, and jewelry) in China is 5.8 percent of the total consumer budget, whereas the mean budget allocation of all countries to personal accessories is 1.5 percent. This difference creates a budget allocation gap of 2.859 for China ((5.8 % – 1.5%) / 1.5%). It means that a typical consumer in China spends almost three times more of their budget on personal accessories than a typical consumer in all other countries. In 1990, this gap has only been 0.676. The high gap increase in personal accessories in China dominates the average budget allocation across all categories, and generates a divergence trend on average for the country over time. Similarly, the same pattern is observed for clothing. In 2014, the budget allocation to clothing in China is 10.7 percent of total consumer budget, whereas the mean budget allocation of all countries to clothing is 6.5 percent. This difference creates a budget allocation gap of 0.655 for clothing in China in 2014, whereas the budget allocation gap for clothing in China has been about 0.102 in 1990. Such deviations of China from the mean budget allocation of other

countries creates a divergence trend for the country. Most diverging categories for China are illustrated in Figure 10.

Budget allocation gap measure allows for such detailed examinations to be obtained for every country, product category and year combinations. For example, we can observe the Engel's law in the food category. Engel's law states that the proportion spent on food decreases as income increases (Houthakker, 1957). We observe per capita income increase in 66 of the countries, and there is a decrease in the budget allocation to food in 39 of these countries observed from 1990 to 2014.

Other interesting insights also emerge from an in-depth examination for every country, product category and year combination. We have closely examined the most converging countries (Belarus, Kuwait, Hong Kong, Russia, and New Zealand), and the most diverging countries (China, Pakistan, and India) based on their convergence coefficients as presented in Figure 7 and Table 8 above. The major product categories driving convergence in the most converging countries are presented in Table 10, and those driving divergence in the most diverging countries are presented in Table 11.

Among the converging countries, consumer budget allocated to alcoholic drinks in Belarus decreases almost in half from 13.1 percent in 1990 to 6.9 in 2014, getting closer to the mean budget allocation of all countries. The other most converging product categories are telecommunications services and equipment. In Kuwait, consumer budget allocated to furnishings, air travel, and textiles has been much higher than the world average in 1990, but the percentage of budget allocated to these categories decreases by 2014 and gets closer to the world average. In Hong Kong, appliances and utensils show convergence through decreased budget allocation over time, whereas textiles show convergence through increased budget allocation over time. Russia exhibits interesting insights because the most converging categories are alcoholic drinks, tobacco, and nonalcoholic drinks. Russian consumers, on average, decrease their budget allocation in alcoholic drinks and tobacco, whereas they increase their budget allocation in nonalcoholic drinks. Recent policies put in effect to reduce alcohol and tobacco might play a role in the decreasing budget allocation to alcohol and tobacco in Russia. Instead, consumers direct their spending to nonalcoholic drinks, leading to convergence. From this insight, managers can see that alcoholic drinks or tobacco do not have as much importance or weight in consumer budget anymore as in 1990. Finally, New Zealand shows convergence in purchase of cars, air travel, and personal accessories. Consumer budget allocated to these categories in New Zealand decreases over time, whereas it increases across all countries. Coming from different directions, New Zealand gets closer to world's mean budget allocation over time.

Among the diverging countries, China and India suggest interesting and consistent insights to the literature. As illustrated above, consumers in China are heavily spending on personal accessories, clothing, footwear, and telecommunications equipment. In 2014, consumer budget allocated to these categories in China can be as high as three times more than the consumer budget allocated to the same categories by other countries, whereas the difference is not that stark in 1990. This finding confirms the recent discussions on increasing conspicuous consumption and materialism in China (Li, Li, & Kambele, 2012; Podoshen, Li, & Zhang, 2011; Sun, D'Alessandro, & Johnson, 2014). Clothing, personal accessories, footwear and telecommunications equipment are major conspicuous consumption categories in China that are in high demand due to increasing middle class consumers (Farrell, Gersch, & Stephenson, 2006).

Our results suggest that, while the majority of countries are becoming more similar in their budget allocation to various product categories, some countries are diverging especially in certain product categories. As in the China example, this divergence can be explained by the cultural and societal predispositions. Social pressure to own a designer bag in China may drive consumers to allocate a much higher percentage of their budget to personal accessories than the rest of the world. Our proposed measure of budget allocation gap enables scholars and practitioners to identify such patterns in detail. A similar pattern to China is observed in India as well. The most diverging categories are clothing, personal care, and personal accessories because consumers are spending a big proportion of their budget on these categories compared to the world average. Pakistan shows an overall divergence pattern, mostly in household services, textiles, and telecommunications equipment.

6. Contributions

First and foremost, this study contributes to the marketing literature by empirically testing a common assumption of global convergence of consumer demand which has not been previously tested on a global scale. We test the long-debated convergence hypothesis by creating a new measure of convergence (i.e. budget allocation gap). Methodologically, we develop new approaches to test convergence and adopt a methodology that has been used to test the convergence hypothesis in the economic growth models. Furthermore, while previous studies focus mostly on European countries (De Mooij, 2000; De Mooij & Hofstede, 2002; Stremersch & Tellis, 2004), our study covers a wider range of geographies including major emerging and advanced markets. We provide a broader context in examining global convergence.

Our study also contributes to the literature by providing empirical evidences of convergence that has long been debated mainly at a conceptual level in the literature. A conceptual study by Merz et al. (2008) proposes that uniformity of consumer culture happens more at the superordinate level (e.g. tool, clothing, furniture). The authors mention two lower category levels: basic categories (e.g. hammer, pants, table), and subordinate categories (e.g. ball-peen hammer, double knit pants, office desk). They propose that global consumer convergence would also occur at the lower category levels for functional meanings (e.g. a simple, comfortable dress) rather than for symbolic meanings (e.g. a modern, Western dress). Although we do not examine at the lower category level, our study provides empirical evidence to their conceptual proposition of global convergence occurring at the superordinate category level. Through our empirical analysis, we confirm their conceptual proposition that globalization of consumer behavior occurs at the superordinate category level.

Our results add value to the scarce literature on the convergence of consumer spending behavior across markets by offering empirical insights using new methodologies. Our proposed measure of convergence, the budget allocation gap, allows to test convergence both at the country and product category levels across years. It is a flexible and refined measure compared to the previously used aggregate measures such as the coefficient of variation of convergence. Thus, this study provides a solid measure of convergence that helps to resolve conflicts in the convergence debate in the literature.

Our proposed measure, the budget allocation gap, is a superior measure than the previously used coefficient of variation measure of convergence. The budget allocation gap measure can be used for a more detailed convergence analysis at the country level as well as product category level simultaneously. For example, Figure 11 shows the change in budget allocation gap of all countries in a particular product category (i.e. personal care) from 1990 to 2014. The map color codes the convergence levels such that the warmer or redder the color, the more budget allocation gap, hence less convergence. As the color gets greener, the budget allocation gap reduces, and convergence increases. The map shows that the budget allocation gaps in 1990 were generally higher than in 2014 because the map gets greener in 2014. Similarly, through our proposed method, the budget allocation gap can be examined separately for other product categories for every year. Such a detailed convergence analysis would not be possible using the coefficient of variation method. Besides, there is no other measure of convergence in the literature to test convergence of countries and product categories.

Insert Figure 11 here

Furthermore, since the budget allocation gap reduces the convergence analysis at the country level, this method allows for segmentation of countries based on convergence. We can also check if the convergence trend is related to other characteristics of countries. As an illustration, we classify the countries based on their convergence trends and per capita GDP levels. Figure 12 shows that, in general, countries with higher per capita GDP levels do not converge or diverge as much as countries with lower per capita GDP. Advanced economies are mostly stable, but emerging or developing economies exhibit both convergence and divergence to a greater extent. This type of insight and segmentation only becomes possible when we use a convergence measure at the country level such as the budget allocation gap proposed in this study. In sum, our proposed measure allows for a detailed analysis both at the product category and country level, generating insights that would not be possible because of lack of convergence measures at this level in the literature.

Insert Figure 12 here

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7. Implications

7.1. Managerial Implications

Our study provides evidence that there is a convergence trend happening across countries in terms of consumer spending behavior at the product category level. The evidence for global convergence at the product level suggests that companies would benefit from a standardized marketing strategy when the market offering is at the superordinate category level. Merz et al. (2008) have proposed that standardized marketing strategies across nations would be the most

appropriate at the superordinate category level (e.g. automobile) rather than at the lower category levels (e.g. sports car). Based on their illustration, using an advertising slogan such as 'BMW 335i . . . a truly powerful automobile' would be more appropriate than a slogan such as 'BMW 335i … a remarkable sports car'. Thus, our findings suggest that companies should benefit from standardized strategies due to convergence at the superordinate category level. Based on our empirical evidence, we reiterate the managerial suggestion of Merz et al. (2008) that managers should benefit from the convergence trend by adopting standardized marketing strategies and positioning their offering at the superordinate category level globally.

Our findings have implications on major marketing practices such as market segmentation and selection, global marketing strategy, product development, branding, distribution, retail, and advertising. After identifying the convergence and divergence patterns, there are opportunities to segment markets based on the convergence patterns that they exhibit. Firms can adjust their marketing strategies according to segmentation schemes such that an integrated marketing approach would be better for converging countries. Convergence implies that firms can target cross-national groups of buyers who share similar characteristics regarding a product category (Hassan & Craft, 2005).

A recent McKinsey Quarterly article identifies five pillars in the new golden age of marketing: science, substance, story, speed, and simplicity (Gordon & Perrey, 2015). To achieve in the new age of marketing, companies need to perform well on these five pillars. In the case of a convergence trend in consumer spending behavior, integrating marketing actions accordingly will provide speed and simplicity for companies. Speed goes hand in hand with simplicity. If marketers miss to identify the converging consumer behavior trend, then marketing activities might get complicated. To avoid such inefficiencies, it is imperative for managers to track the

expenditure patterns in target markets. For instance, technology and digital platforms are helping streamline marketing activities, reducing complexity. In the case of convergence, advertisements can be developed that have unifying appeals to the converging segments.

In sum, companies should track the convergence trend worldwide, and develop standardization strategies accordingly. Countries with higher convergence trends can be served more efficiently with more standardized approaches. Firms need to consider integrated marketing plans to serve these markets more effectively. Tracking the convergence or divergence trends and developing appropriate marketing strategies for these markets provide companies sustainable competitive advantage in international markets.

7.2. Scholarly Implications

The literature has not examined the global convergence hypothesis systematically. Our comprehensive approach to develop the convergence concept in terms of consumer spending, and to test the convergence hypothesis at the product category level leads the path for developing new theories on a less explored area in marketing. The effects of convergence on companies, consumers, and societies make it imperative for scholars to further examine the convergence phenomenon. In sum, our research represents a pioneer study in developing and testing new theories in the global convergence of consumer behavior.

8. Future Research

Although the industry level data is at the desired level for our analysis on product categories, more micro-level data would provide more detailed insights on the convergence patterns of products. Micro level data are not readily available, but extension of this study to lower level product categories or brands will provide further insights for theory construction in this area.

A study by J. Sheth (1986) argues that markets have become divergent within each country, therefore producing overlapping similar segments across countries. An extension of our research can investigate whether the global convergence hypothesis is also observed within countries. A further breakdown of geographic units will reveal more insights on the global convergence pattern. Future research using regional or city-level data can conduct segmentation analysis to determine similar regional segments across countries. It will also be useful in determining how homogeneous the country is over time and how effective the standardized marketing approaches would be in that country.

Another important area for future research is the identification of underlying mechanisms of convergence or divergence of consumer spending behavior across borders. Future studies can extend our understanding of the distinguishing factors of convergence versus divergence. Causal inferences are needed to examine why some product categories show diverging trends (e.g. clothing) while most of the other product categories show converging trends (e.g. air travel, food, telecommunications services, etc.).

Finally, the consequences of global convergence for marketing practices, businesses, consumers, and societies is another potential future research area that will extend our knowledge in the international marketing domain. It is important to understand the implications of global convergence on marketing mix elements such as advertising and communication, positioning, product management, and even foreign market entry decisions.

In sum, there are many future research opportunities that stem from our work. Future studies can highly benefit from our work to analyze the antecedents or consequences of global convergence

since we provide a global convergence measure in this paper that has not been available in the scholarly literature before.

ESSAY 3

EFFECTS OF THE GLOBAL CONVERGENCE OF CONSUMER SPENDING ON MARKET CONCENTRATION AND FIRMS' MARKET SHARES

1. Introduction

Consumers across countries are becoming more similar over time in their consumption patterns. This indicates a convergence trend for the global consumer spending behavior. A major question in the marketing domain is how the global convergence phenomenon reflects on the market share performance of companies. The purpose of this essay is to investigate the effect of global convergence of consumer spending on market concentration and firms' market shares.

Recent developments in global markets such as the Internet, technology, travel, and integration of countries have facilitated communication and contact among consumers from different cultures. Consumers are currently exposed to many other different cultures compared to a few decades ago. Because of these changes in the world markets and the increased social influence of consumers from different cultures on each other, consumers are globally becoming more similar in their spending behavior over time. We have found empirical evidence of global convergence of consumer spending behavior (in Essay 2). However, the effects of the global convergence on companies is unknown. As consumers become more similar in their spending behavior at the product category level, do they also become more similar in their spending behavior at the firm level? It is yet unexplored whether consumers also converge toward the most preferred companies and direct their spending toward the offerings of these leading companies as consumers converge globally. Thus, convergence at the product category level may have

substantial effects on the leading firms in a market. We define leading firms as companies with the highest market shares in a market.

Using data on per capita consumer expenditure and the largest four firms' market shares across 44 countries and 10 product categories between 2005 and 2013 (over a 9-year time period), we test the effects of global convergence of consumer spending behavior on market shares of the leading firms. We use a fractional logit model for the proportional dependent variable of market share ranging from 0 to 100 percent, controlling for the fixed effects of country, product category, and years.

Our findings show that the convergence trend across product categories generates convergence toward top firms in an industry. In other words, as convergence in consumer spending behavior increases, the market shares of the leading firms also increase, resulting in higher market concentration.

Our study addresses the gap in the literature by empirically examining the consequences of global convergence on market shares of firms. Although global convergence of consumer spending is widely discussed, many aspects of global convergence, including its implications on companies, have not yet been addressed in the literature. Our study contributes to the literature by investigating how global convergence affects market shares of firms, and thus, market concentration. Market concentration represents the sum of the market shares of the top several firms in a market. We first examine the effect of global convergence on market concentration. We then dig deeper into firm-level market share effects of convergence, and how these effects change based on the characteristics of the firm such as the country of origin, county of operation,

and degree of internationalization of the firm. The results have important implications for both managers and scholars alike.

The rest of this paper is structured as follows: In the next section, we provide a literature review and develop a conceptual framework on the convergence of consumer spending behavior and its effects on market concentration and market shares. Then, in the methodology section, we use a fractional logit model to test the effects of convergence on market concentration and market shares. Subsequently, we present the results and provide several robustness checks. We further explain the results in the discussion section. Finally, we discuss the contributions and implications, and provide several research avenues for possible future extensions.

2. Theoretical Framework

The theories of social influence and social network provide solid foundations for the explanation of global convergence. Several social influence and social networks theories in social psychology and political science become relevant in understanding the mechanisms of global convergence such as the bandwagon effect (Leibenstein, 1950), observational learning (Cai et al., 2007), peer influence (Duncan, Haller, & Portes, 1968), neighborhood effect (Bell & Song, 2007; Case, 1991) herd behavior (Banerjee, 1992), and conformity (Bernheim, 1994). The bandwagon effect refers to the desire of consumers to wear, buy, do, consume, and behave the same as their fellows (Leibenstein, 1950). For instance, in the political domain, consumers tend to support the candidates who have an increasing trend more, while they tend to withdraw their support from candidates with a declining trend (Bartels, 1985). In the product adoption context, consumers are more likely to adopt a product or a brand as the number of consumers using that product or brand increases (Manski, 2000; Xiong & Bharadwaj, 2014).

Similarly, based on the observational learning theory, individuals tend to purchase a brand that is most preferred by others. The other relevant social influence theories also predict that individuals tend to emulate the behavior of other people: They imitate their peers based on the peer influence theory (Duncan et al., 1968); they follow the general trend of the neighborhood based on the neighborhood effect (Bell & Song, 2007; Case, 1991); and they behave the same as the majority based on the herd behavior (Banerjee, 1992) and conformity (Bernheim, 1994) perspectives.

In general, the social influence theories posit that there are social drivers for emulating others such as the desire to belong to a group. Consumers increasingly desire to associate themselves with more popular groups. In our context, this group represents the emerging global consumer culture (McLuhan, 1964; Steenkamp & De Jong, 2010; Strizhakova et al., 2008). The aspiration to belong to increasingly more popular groups leads consumers to emulate each other in their spending behavior. As consumers increasingly emulate others in the global consumer culture, they inevitably become more similar across national borders in their spending behavior.

Along with the rise in the convergence of consumer behavior, the effect of social pressures and social influence of consumers on each other's purchase decisions increase. Because of the increased social influences, converging consumers also converge on their demands for top firm brands in a market. We expect that the global convergence trend at the product category level will trigger a convergence trend at the firm level. As the global convergence of consumer spending behavior increases, the social aspect of using a popular firm's brand becomes more important. Subsequently, the aggregate demand on a firm creates a snowball effect, generating even more demand on leading firms (Becker, 1991; Hellofs & Jacobson, 1999). As consumers become more similar in their spending behavior across product categories, and as they observe that many other consumers are choosing a specific firm's brand, they also become more likely to

choose that specific firm's brand. For example, as consumers converge toward the electronics category, and as they observe that many consumers prefer the Apple brand, then they become more likely to prefer the Apple brand. As a result, homogenization of spending behavior at a product category (e.g. electronics) leads to higher preference for the offerings of top firms in that product category (e.g. Apple).

In particular, social networks enhance the snowball effect by increasing social influences and social pressures due to globalization. Social networks, especially social media, have connected consumers from all over the world more than ever before. Consumers are currently exposed to not only their neighbors or limited social circles, but also any consumer circle from anywhere in the world. Product referrals have started to come from larger global circles rather than limited social circles. Some companies have used this effect of global social influence on consumers. For example, when searching for a product on Amazon, the online retailer ranks the highest selling brands first in the searched product category. These brands are mentioned as "#1 Best Seller". Consumers would easily choose these brands just because they are popular. They use the cue that being the top seller is a signal for the quality of the brand. Such recently emerged revolutionary social networks facilitate the convergence process by creating a snowball effect on top brands, driving increased market shares for leading firms.

In sum, global convergence of consumer spending increases the demand for the offerings of the largest firms in a market. As consumers converge toward similar product categories, they also converge toward similar firms in that category. Highly preferred firms in a market are preferred even more with convergence. This process eventually results in a high market concentration of the leading firms in a product category in terms of market shares. Consequently, we expect that the global convergence of consumer spending drives more demand to the leading firms in a

market. This will result in an increase in the market shares of the top firms in a market, which is referred as the market concentration by industry leaders.

> H_1: *Global convergence of consumer spending leads to an increase in market*
>
> *concentration by industry leaders.*

Market concentration, also referred as industry concentration or seller concentration, represents the sum of the market shares of the largest several firms in a market (Khemani & Shapiro, 1993). The number of largest firms can change depending on the context or industry. In our study, we consider the top four firms in terms of market shares since a four-firm index is commonly used in the literature (Tellis, Chandy, & Ackerman, 1999; Young & McAuley, 1994, p. 228). Our first hypothesis posits that convergence across product categories in a market leads to an increase in the sum of market shares of the largest firms in that market. Our conceptual model for the consequences of convergence on market concentration is illustrated in Figure 13.

Insert Figure 13 here

Hypothesis 1 constitutes our conceptual model at the market level because it captures the market concentration which is the sum of the market shares of the largest firms in a market. This model provides insights at the market level, however, there are also insights worth examining on the effects of global convergence at the firm level. For example, the effects of consumers' converging behavior on market shares of the largest firms can differ based on the firm characteristics. Therefore, we further develop another conceptual model at the firm level by disaggregating our dependent variable market concentration into market shares of individual

firms. The boundary condition in this firm-level framework is that it is proposed only for the largest four firms in a market.

Based on the first hypothesis, we reiterate our initial argument by taking it from market level to firm level. With the boundary condition of the top four firms in terms of market shares in a market, we expect that that global convergence of consumer spending at the product level will trigger convergence at the firm level. Hence, at our firm-level conceptual framework, we expect that global convergence of consumer spending leads to an increase in the market shares of the leading firms (in terms of market share).

> *H_2: Global convergence of consumer spending leads to an increase in the market shares of the leading firms in a market.*

Furthermore, several moderating factors may influence the relationship between global convergence and market shares. For example, significant differences between emerging and advanced markets may generate differing country of origin effects (Prahalad, 2009; J. N. Sheth, 2011). The effect of global convergence on the market shares of leading firms may differ based on the country of origin of the firm (i.e. home market). Emerging market (EM) firms may be affected by the convergence trend differently than advanced market (AM) firms.

Over time, as global convergence increases, consumers from EMs and AMs are likely to become more similar in their spending behavior. As global consumers become more alike across borders, EM firms gain more opportunities to serve similar consumers beyond their own markets. Along with the rise in convergence, EM firms are not restricted to serve only the local unique consumers, but instead get the opportunity to serve similar consumers across borders. As the latecomers to the world markets, they have more room to grow and gain market shares due to

convergence, compared to the established AM firms. AM firms which have been serving the world markets for a long time do not have as much room to grow as EM firms. As a result, EM firms will have more advantages than AM firms as consumers become more similar in their spending behavior.

Furthermore, Sheth (2011) argues that the rise of the EMs such as China and India, along with the aspirations and entrepreneurship of large-scale consumers in these markets, will shift EMs from periphery to the core of global competition. In consequence, home market advantages will also shift to multinational corporations originating from these EMs. This trend has already been happening in multiple industries including beer, steel, appliances, and cell phones; and will shift to other industries as well including automobiles, personal computers, and infrastructure (J. N. Sheth, 2011). Accordingly, we expect that, as global convergence increases, firms with a country of origin of EMs will gain more market shares than firms with a country of origin of AMs.

> H_3: *As global convergence increases, firms originating from EMs gain higher market shares compared to firms originating from AMs.*

Apart from country of origin, country of operation can also influence the effect of global convergence on market shares. Firms operating in EMs versus AMs can evolve differently in terms of market shares as convergence increases. Unlike AMs, EMs are dominated by mom-and-pop stores (e.g. India, Brazil, Mexico, Colombia), street stands and kiosks, and small and medium enterprises rather than a high number of multinational corporations (Atsmon, Child, Dobbs, & Narasimhan, 2012). As convergence increases, consumers in EMs have more room to direct their spending toward top brands by decreasing their spending on smaller local stores. On the other hand, AMs are dominated more by large established companies. Customer switching

from smaller local brands to top brands occurs more easily in EMs compared to customer switching from many already established large brands to top brands in AMs. As a result, the global convergence of consumer spending behavior will increase market shares more in EMs through an easier switching of consumers from smaller local firm brands to larger popular firm brands.

> H_4: *As global convergence increases, firms operating in EMs gain higher market shares compared to firms operating in AMs.*

Finally, the degree of internationalization of the firm is also an important factor in identifying the effects of convergence on market shares. Local firms that have never internationalized (i.e. operating only in home markets) are expected to lose market shares as global convergence increases because they are the least likely to adjust to global trends. They are likely to lose market shares compared to moderately-internationalized firms (i.e. present in 2 to 22 countries) and highly-internationalized firms (i.e. present in 23 or more countries).

One can expect that convergence would help highly-internationalized firms in increasing their market shares. A counterargument would be that highly-internationalized firms may lose focus, and have managerial problems, over-complications, and decreasing efficiency due to the high degree of internationalization. Highly-internationalized firms are likely to have operations in highly globalized countries as well as less globalized, less interconnected countries. They may have difficulty in balancing localization versus globalization strategies sufficiently because of the high scale, but moderately-internationalized firms can balance the globalization and localization strategies better in the face of convergence. There are forces of convergence (e.g. globalization) and forces of divergence (e.g. cultural differences). Moderately-internationalized

firms may better perform in taking into account both forces in their strategies. From the consumers' perspective, highly-internationalized firms may lose their appeal or brand popularity because of being too mainstream worldwide. Additionally, highly-internationalized firms may experience a ceiling effect where further growth is not possible. As convergence increases, international brands in selective countries may become more popular and appealing to consumers compared to highly-internationalized brands. Thus, we expect that the positive effect of convergence on market shares will be highest for moderately-internationalized firms, followed by highly-internationalized firms, and lowest for local firms.

> H_{5a}: *As global convergence increases, compared to highly-internationalized firms, local firms lose market shares.*

> H_{5b}: *As global convergence increases, compared to highly-internationalized firms, moderately-internationalized firms gain market shares.*

The conceptual model for the consequences of convergence on firm-level market shares, including the moderating factors of country of origin, country of operation, and the degree of internationalization, is illustrated in Figure 14.

Insert Figure 14 here

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3. Methodology

We obtain the consumer expenditure and firms' market share data from the Global Market Information Database. Additional company data (e.g. country of origin) are collected through

company websites, and financial websites such as Bloomberg and Forbes. The data include the top four firms in 44 countries for 10 product categories from 2005 to 2013. The descriptive statistics of the key variables are presented in Table 12. The list of product categories is presented in Table 13, and the list of countries, classified as emerging versus advanced markets, is presented in Table 14. We have categorized advanced versus emerging market economies based on IMF's World Economic Outlook classification (IMF World Economic Outlook, 2015). The data set includes 14,230 observations at the firm level.

Insert Table 12 here

Insert Table 13 here

Insert Table 14 here

3.1. The Effect of Global Convergence of Consumer Spending on Market Concentration

First, we test Hypothesis 1 in the market-level conceptual model showing the effect of global convergence on market concentration. Market concentration measures the market shares of the largest firms in an industry (Gatignon, Weitz, & Bansal, 1990). We adopt the commonly used concentration ratio (CR) (Bass, Cattin, & Wittink, 1978; Simon & Sullivan, 1993; Tellis et al., 1999) to analyze the effect of convergence on the market shares of the top one brand (CR_1), top

two brands (CR$_2$), top three brands (CR$_3$), and top four brands (CR$_4$).[7] Concentration ratio (CR) is calculated by summing up the market shares of the specified number of largest firms in an industry. For example, the four-firm concentration ratio (CR$_4$) is calculated as in Equation (10):

$$(10) \quad CR_4 = \sum_{i=1}^{4} \alpha_i$$

where CR$_4$ is the four-firm concentration ratio, α_i is the market share for each firm corresponding to the top four firms in a particular market. Using the market concentration measure for up to four firms is appropriate because not only it is a frequently used index in the literature (Tellis et al., 1999) but also the market share data for CR$_4$ in our data set ranges from 1.7 percent to 84.20 percent. This indicates that there is not a case where four firms capture 100 percent of the market, which would have presented a methodological issue. The descriptive statistics and the histogram of CR$_1$, CR$_2$, CR$_3$, and CR$_4$ are presented in Table 15 and Figure 15, respectively.

Insert Table 15 here

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7 Another commonly used market concentration measure is the Herfindahl-Hirschman index (HHI) (also known as the Herfindahl index) (Veflen Olsen & Sallis, 2010). HHI is the sum of the squares of market shares of the largest brands. We also measure the market concentration using the HHI. The Herfindahl-Hirschman index is calculated for the largest brands in a market in a specific product category (e.g. HHI for the top four brands in clothing in China in 2005). Similar to the concentration ratio, HHI is a statistical measure of concentration and competition of firms in an industry (Herfindahl, 1950; Hirschman, 1964; Rhoades, 1993). It is calculated by summing up the squares of market shares of the firms in an industry. By squaring the markets shares, the HHI gives additional weight to firms with relatively higher market shares. As the index increases, it indicates a higher concentration and less competition in the industry. The difference of concentration ratio (CR) from the HHI is that the former is linear and does not assign additional weights to firms with higher market shares. Similar to the concentration ratio, we measure the Herfindahl-Hirschman index for the top one (HHI$_1$), top two (HHI$_2$), top three (HHI$_3$), and top four firms (HHI$_4$) in this study. The HHI is calculated as:

(1) HHI$_4$ = $\sum_{i=1}^{4} \alpha_i^2$

where HHI$_4$ is the Herfindahl-HIrschman Index for the top four firms in an industry in terms of market share, and α_i is the market share for each firm corresponding to the top four firms in that industry. Since CR and HHI are both measures of market concentration, we continue the analysis using the CR, but also report the HHI results in Appendix 2. Both methods give very similar results.

The dependent variable, market concentration, is a proportions data ranging from 0 to 100 percent (between 0 and 1). OLS methods are not appropriate for this analysis because the predicted values cannot be negative or higher than 1. Therefore, we estimate a generalized linear model (GLM) using maximum likelihood estimation (MLE). We use logit transformation with the binomial distribution to fit the predicted values between 0 and 1 as suggested by Baum (2008) and Papke and Wooldridge (1996). We also estimate the robust standard errors. This method is referred as the fractional logit model by Papke and Wooldridge (1996). We do not use censored regression models such as a Tobit model because the data is not censored as the values outside the [0, 1] interval are not feasible for the market concentration data (Baum, 2008; Papke & Wooldridge, 1996).

The independent variable is *convergence* operationalized by obtaining the negative of the budget allocation gap (e.g. multiplying the budget allocation gap by -1). Budget allocation gap is a measure of divergence or distance because it indicates how different one country's spending is from the mean spending of all countries. Therefore, we multiply the budget allocation gap by -1 to convert it to convergence measure. We also control for the country fixed effects, product category fixed effects, and year fixed effects.

$$(11) \quad Market\ concentration_{cpt} = \alpha + \beta_1\ (convergence_{cpt}) + \lambda_c\ (country\ fixed\ effects_c) +$$
$$\rho_p\ (product\ category\ fixed\ effects_p) + \tau_t\ (year\ fixed\ effects_t) + \varepsilon_{cpt}$$

where c indicates country, p indicates product category, and t indicates time in years. We expect β_1 to be positive, indicating that convergence will lead to higher market concentration.

3.2. *The Effect of Global Convergence of Consumer Spending on Market Shares of Individual Firms*

In this analysis, we test the effects of global convergence on market shares of individual firms, as opposed to the sum of the market shares of several firms. Our data include the market shares of the top four firms in 44 countries and 10 product categories from 2005 to 2013. The dependent variable is an individual firm's market shares in each market, product category, and year. Again, we use the fractional logit model with logit transformation, and the binomial distribution, and estimate the robust standard errors as suggested by Baum (2008) and Papke and Wooldridge (1996). The model estimates a generalized linear model (GLM) using maximum likelihood estimation (MLE) because market shares cannot be below 0 or above 1 (or 100 percent).

We still control for country, product category, and year fixed effects. Furthermore, we also control for firm fixed effects. The key independent variable is the convergence measure operationalized by obtaining the negative of the budget allocation gap. We also include the moderator variables: (i) country of origin dummies (emerging markets versus advanced markets); (ii) country of operation dummies (emerging markets versus advanced markets); and (iii) dummies for the degree of internationalization of the firm (local versus moderately-internationalized versus highly-internationalized). The list of the emerging markets (EM) and advanced markets (AM) is presented in Table 14. The degree of internationalization (DOI) is a categorical variable such that DOI=1 for local firms that are present only in the home country, DOI=2 for moderately-internationalized firms that are present in 2 to 22 countries, and DOI=3

for highly-internationalized firms that are present in more than 22 countries. In our data, 31.05 percent of companies represent local firms, 34.24 percent of companies represent moderately-internationalized firms, and 34.71 percent of companies represent highly-internationalized firms. We specify the model in Equation (12).

$$(12) \quad Market\ shares_{fcpt} = \alpha + \beta_1\ (convergence_{cpt}) + \beta_2\ (convergence_{cpt} * country\ of$$
$$origin\ dummy_c) + \beta_2\ (convergence_{cpt} * country\ of\ operation\ dummy_c) + \beta_3$$
$$(convergence_{cpt} * DOI\ dummy_f) + \lambda_c\ (country\ fixed\ effects_c) + \rho_p\ (product$$
$$category\ fixed\ effects_p) + \tau_t\ (year\ fixed\ effects_t) + \theta_f\ (firm\ fixed\ effects_t) +$$
$$\varepsilon_{fcpt}$$

where f indicates firm, c indicates country, p indicates product category, and t indicates time in years. We do not include the main effects of the moderator variables because they are time-invariant and are excluded in the fixed-effects model. For example, by accounting for country fixed effects, we do not need to include the main effects of country of origin or country of operation dummies as they do not change over time and their main effects are captured by the country fixed effects. The same argument is valid for the degree of internationalization dummies because firm fixed effects include the main effects of the degree of internationalization. Therefore, we only include the interaction effects in our model.

We use fixed effects rather than random effects because the assumptions of random effects model put additional constraints that would not fit our data. In general, fixed effects estimator allows correlation between unobserved factors and explanatory variables, whereas random effect estimator requires that unobserved factors are uncorrelated with each explanatory variable (Wooldridge, 2009, p. 482). The key issue in determining whether to use fixed effects or random

effects is based on whether we can plausibly assume that unobserved factors are uncorrelated with all explanatory variables (Wooldridge, 2009, p. 493). In our data, the unobserved factors related to country, product category, years and firms that affect market shares are likely to correlate with the key explanatory variable of convergence. For example, the average convergence level of each country may be different from each other due to several unobserved effects such as the economic development level, geographical region, or economic integration level of the country. Such unobserved effects of countries on the convergence levels warrant that using fixed effects is more preferable than random effects because the assumptions of the random effects model would be violated, and the random effects estimator would be biased. Therefore, we use fixed effects in our estimation. In the robustness checks section, we empirically test whether fixed effects model is more appropriate than random effects model for our analysis. Using the Hausman test, we find that fixed effects model is more preferable since random effects would yield biased estimates.

4. Results

4.1. The Effect of Global Convergence of Consumer Spending on Market Concentration

First, in our market-level conceptual model, we estimate the effect of convergence on market concentration of the top one to top four firms. The dependent variable is market concentration. It is measured by the concentration ratio of the top one (CR_1), top two (CR_2), top three (CR_3), and top four firms (CR_4) with respect to their market shares. Except CR_1, the others are calculated by summing up the market shares of the several leading firms, e.g. summing up the market shares of the top two firms for CR_2. The key independent variable is convergence (i.e. the negative of the

budget allocation gap). Since the budget allocation gap represents the distance or divergence of countries, we multiply it by -1 to obtain the convergence measure.

The results of the fractional logit model are presented in Table 16. After controlling for the fixed effects of countries, product categories, and years, the coefficient estimate for convergence is significantly positive for the CR_2, CR_3, and CR_4 models, but not for the CR_1 model. The results imply that as convergence increases, the market shares of the top two, top three and top four firms also increase. Although the coefficient is still positive for CR_1, it is not statistically significant, indicating that the market share of the largest firm is not significantly affected by convergence. In sum, Hypothesis 1 is supported for CR_2, CR_3, and CR_4 models, but not for CR_1 model.[8]

Insert Table 16 here

It is also necessary to calculate the marginal effect of the convergence on market concentration for a more detailed interpretation of the coefficients because we are using a fractional logit model, which is a nonlinear model. The marginal effect measures the effect of a change in a

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[8] We also estimated the effects of convergence on market concentration using the Herfindahl-Hirschman index (HHI). The difference of HHI from CR is that the former gives more weights to firms with higher market shares because it sums up the squares of market shares. The dependent variable is the sum of the squares of the market shares of the largest one to four firms in a country in an industry in a year. The independent variables are the same as before; convergence is the key independent variable, and the rest of the independent variables include the fixed effects of countries, product categories, and years. The results, presented in Appendix 2, are similar to our previous findings from CR models. The coefficient estimate for convergence is again significantly positive for the top two, three, and four firms, but it is insignificant for the top one firm. The results again suggest that as the budget allocation gap decreases (i.e. convergence increases), market concentration in an industry in terms of the market shares of the top four firms will increase, all else constant. Besides, measuring market concentration with two established indices (Herfindahl-Hirschman Index and the Concentration Ratio) increases the construct validity in our study.

regressor on the conditional mean of the dependent variable (Cameron & Trivedi, 2009; Williams, 2011). In our study, it shows the percentage change in market concentration for a one unit change in convergence. Table 17 presents the marginal effect of convergence on market concentration for each concentration-ratio model from CR1 to CR4.

Insert Table 17 here

The results indicate that a one unit increase in convergence increases market concentration by: (i) 0.2 percentage points for the CR1 model (i.e. the market share of the top one firm); (ii) 1.10 percentage points for the CR2 model (i.e. total market shares of the top two firms); (iii) 1.61 percentage points for the CR3 model (i.e. total market shares of the top three firms); and (iv) 1.98 percentage points for the CR4 model (i.e. total market shares of the top four firms). These marginal effects are low in magnitude. However, there may be unobserved variables at the market-level that are affecting the estimates from either directions yielding to weak average estimates. In the next analysis, we consider firm-level characteristics (e.g. country of origin, country of operation, and the degree of internationalization) to better distinguish the upward and downward effects of convergence on market shares.

4.2. The Effect of Global Convergence of Consumer Spending on Market Shares of Individual Firms

After testing the market-level conceptual model, we now test the firm-level conceptual model. This time, we use market shares of individual firms as the dependent variable as opposed to aggregating the market shares of the largest firms. The key independent variable is convergence

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(the negative of the budget allocation gap). We also employ the interaction of convergence with dummies for country of origin and country of operation (EM=0, AM=1) and the degree of internationalization (DOI=1 for local firms, DOI =2 for moderately-internationalized firms operating in 2 to 22 countries, and DOI =3 for highly-internationalized firms operating in more than 22 countries).

We add each variable one by one using a fractional logit model. We control for the fixed effects of countries, product categories, years, as well as firms. The final full model includes all the interaction variables and it has the best fit with the lowest log-likelihood values. Table 18 presents the results.

Insert Table 18 here

The final model shows that the key independent variable, convergence, has a significant positive effect on market shares. As convergence increases, market shares of largest firms also increase, all else constant. This finding supports Hypothesis 2.

All moderating factors in the model also show a significant effect. Country of origin variable also has a significant interaction effect with convergence. The interaction coefficient implies that, as convergence increases, a firm originating from an AM is less likely to increase market shares than a firm originating from an EM. This result shows that convergence helps firms originating from an EM more than firms originating from an AM in increasing their market shares. This finding supports Hypothesis 3.

Apart from country of origin, country of operation also seems to be important in determining the effects of convergence on market shares. The interaction effect of the country of operation dummy with convergence is significantly positive. It indicates that, as convergence increases, firms' market shares are likely to increase more if they are operating in AMs compared to EMs. This finding does not support Hypothesis 4. There may be various reasons for the lack of support for Hypothesis 4. Some possible explanations are discussed in the discussion section.

Finally, the third moderator, the degree of internationalization, also shows a significant interaction effect. The interaction coefficient suggests that, as convergence increases, local firms lose market shares, whereas moderately-internationalized firms gain market shares, compared to highly-internationalized firms. The returns to convergence is highest for moderately-internationalized firms, and lowest for local firms. This finding supports both Hypothesis 5a and Hypothesis 5b.

Again, we obtain the marginal effect of convergence. This time, we also consider the moderating factors. We compute the marginal effect of convergence at each value of the moderating variables: if the country of origin is EM versus AM; if the country of operation is EM versus AM; and if the degree of internationalization is local versus moderate versus high. The marginal effect table is presented in Table 19, and the graph for the marginal effect is presented in Figure 16.

Insert Table 19 here

In this analysis, marginal effect of convergence shows the percentage change in the market share of a firm for a one unit change in convergence at each level of the categorical moderators. The results indicate that as convergence increases by one unit, the market share of a firm grows by: (i) 1.82 percentage points if the firm is originating from an AM, operating in an AM, and is moderately internationalized; (ii) 1.20 percentage points if the firm is originating from an AM, operating in an EM, and is moderately internationalized ; (iii) 2.05 percentage points if the firm is originating from an EM, operating in an AM, and is local; (iv) 7.25 percentage points if the firm is originating from an EM, operating in an AM, and is moderately internationalized; (v) 6.49 percentage points if the firm is originating from an EM, operating in an AM, and is highly internationalized; (vi) 1.44 percentage points if the firm is originating from an EM, operating in an EM, and is local; (vii) 6.95 percentage points if the firm is originating from an EM, operating in an EM, and is moderately internationalized; and (viii) 6.15 percentage points if the firm is originating from an EM, operating in an EM, and is highly internationalized.

On the other hand, the results also indicate that as convergence increases by one unit, the market share of a firm declines by: (i) 9.19 percentage points if the firm is originating from an AM, operating in an AM, and is local; (ii) 10.42 percentage points if the firm is originating from an AM, operating in an EM, and is local; and (iii) 0.47 percentage points if the firm is originating from an AM, operating in an EM, and is highly internationalized. There is no significant marginal effect of convergence on market share of a firm if the firm is originating from an AM, operating in an AM, and is highly internationalized.

In sum, a unit increase in convergence significantly increases the market share of a firm, especially when the firm originates from an EM or when the firm is moderately internationalized. However, convergence significantly decreases market share in a few cases, especially when the firm is never internationalized. The dominant moderators seem to be the firm's country of origin (i.e. EM-origins have higher marginal effect of convergence than AM-origins), and the degree of internationalization (i.e. moderate internationalization has positive marginal effect of convergence whereas local is associated with negative marginal effect). The country of operation moderator does not change the marginal effect of convergence as much as the other two moderators.

5. Robustness Checks

We do multiple robustness checks. First, we test whether fixed effects model is more appropriate than random effects model in our analysis on market shares. We conduct a random effects model, and use Hausman test to compare the fixed effects estimates with the random effects estimates. The null hypothesis in the Hausman test states that there are no systematic differences between fixed effects and random effects estimates, implying that the key random effects assumption (i.e. the lack of correlation between unobserved factors and the independent variables) is true. If the Hausman test fails to reject, random effects estimates are unbiased and efficient. On the other hand, a rejection of the Hausman test means that the key assumption of the random effects is false. In this case, fixed effects estimates are used because they are unbiased (Wooldridge, 2009, p. 493).

Our results reject the null hypothesis of the Hausman test. The results suggest that there are systematic differences between the estimates of fixed effects and random effects ($\chi^2_{(62,\,N=14,230)} =$

1150.91, p < 0.01). Rejecting Hausman test means that random effects model provides biased estimates. Therefore, fixed effects model that we have reported in the results section is more appropriate than random effects model for our study.

We do another robustness check to see if our findings are consistent for random subsamples of our data. Our brand data include a representative sample of 44 countries capturing major advanced markets and emerging markets. However, to confirm that the results are independent of the 44 countries included in the data set, we divide the sample randomly into two groups. 22 countries were assigned randomly to each group: (i) the first group includes Austria, Brazil, Canada, China, Colombia, Czech Republic, Denmark, Germany, Israel, Italy, Morocco, Netherlands, Poland, Russia, Singapore, South Africa, South Korea, Spain, Sweden, Turkey, Ukraine, and United Arab Emirates; and (ii) the second group includes Argentina, Australia, Chile, Egypt, France, Greece, Hong Kong, India, Indonesia, Japan, Malaysia, Mexico, Norway, Philippines, Portugal, Romania, Saudi Arabia, Taiwan, Thailand, USA, United Kingdom, Venezuela.

Table 20 presents the results for the randomly created subsamples. The results on the two random subsamples are similar to our main findings. To test the robustness for Hypothesis 1 results, we use the market concentration (i.e. concentration ratios - CR_1, CR_2, CR_3, and CR_4) as the dependent variable for each subsample. The results show that convergence increases the market concentration in both subsamples for CR_3 and CR_4. CR_1 and CR_2 are significantly increased by convergence in one subsample, though are insignificant in the other subsample. Our original findings are also insignificant for CR_1. Thus, these results mostly confirm our main findings. The top one or two firms may be saturated enough with no room for growth in response

to convergence, but the shares of the top three and four firms increase in response to convergence.

At the firm-level analysis, we run a regression with the individual firms' market shares as the dependent variable. The key independent variable is convergence (i.e. the negative of the budget allocation gap). We also use interaction terms related to firm and market characteristics. We run our main model on the two randomly obtained subsamples. Table 21 presents the results from the two random subsamples.

Table 21 shows that Hypothesis 2, Hypothesis 3, Hypothesis 5a and 5b are still strongly supported. Convergence significantly increases the market shares of the largest firms, as suggested by Hypothesis 2. Moreover, as convergence increases, firms originating from EMs gain more market shares than firms originating from AMs, as suggested by Hypothesis 3. Hypothesis 4 has the same direction as before, but the second subsample does not show significance. Finally, Hypotheses 5a and 5b are still supported. So, convergence is most helpful to moderately-internationalized firms, and least helpful to local firms in increasing their market shares. The random subsample results show that the directional effects are the same as our

findings on the main sample, and all except one coefficient are still significant. Overall, the robustness checks confirm our findings.

6. Discussion

In this study, we provide empirical evidence for the effects of global convergence on market concentration and market shares of largest firms in a market. Convergence trend at the product level drives a convergence trend at the firm level. When we examine market concentration in our market-level model, we find that convergence increases the market shares of the top two, top three, and top four firms. Yet, the positive effect of convergence on the top one brand is insignificant. The reason of finding insignificant effect on the top one brand can be due to the ceiling effect of convergence. The largest firm in a market can already be saturated enough that there is no more room for growth. These firms are probably having difficulty in getting sufficient number of switchers to improve their market shares because of the scale effect. Also, the counterforces of convergence may be in effect such that the top brand can be too mainstream for consumers to direct their spending toward. However, the top two, top three, and top four firms show that consumers still converge toward these brands as convergence increases.

When we examine the effect of convergence on market shares at our firm-level model, the results show that market shares of the top firms increase, on average, as convergence increases. This is another evidence of higher market concentration as a result of global convergence of consumer spending. Strong firms get even stronger with convergence.

Furthermore, we show that, as convergence increases, firms originating from EMs gain more market shares than firms originating from AMs. This finding shows increasing opportunities for EM firms as the global convergence trend increases. As the similarity of consumers increase, the

challenger companies from EMs will have more opportunities to catch up with the established companies from AMs to serve the world markets.

However, we do not find support for Hypothesis 4. Although we anticipate that the positive effect of convergence on market shares will be higher for leading firms operating in EMs rather than AMs, we find the opposite effect: With the convergence trend, top firms operating in AMs gain more market shares than top firms operating in EMs. This result can be explained by the more stable market structure of AMs versus more dynamic structure of EMs. AMs are more stable and saturated markets compared to EMs. Newcomer firms in AMs are likely to be less in number and are not likely to be among the top players of the market. On the contrary, there are many very strong new entrants in EMs each year. Even though consumers become more similar due to convergence, and direct their spending toward top firms, these leading firms in EMs are not as stable as they are in AMs because of the strong and more frequent market entrants in these unsaturated markets. A top firm in an EM can more easily be replaced with another strong new entrant the following year because of the highly dynamic nature of EMs. Much more new market entrants, increasing inward FDI, and increasing number of new brands in EMs cause more scattering of market shares. All of these factors can cause market shares to be more unstable in EMs. As a result, contrary to Hypothesis 4, we find that, as convergence increases, the market shares increase more for top firms operating in AMs rather than firms operating in EMs.

Finally, our results show that the degree of internationalization of a firm plays a role on the effect of convergence on market shares. Local firms are at a disadvantage as convergence occurs. This shows the importance of internationalization of firms since convergence trend is consistently happening. Decreasing popularity of local brands with the rise of convergence also shows that ethnocentrism also reduces as convergence spreads. Ethnocentric consumers generally show

favorable attitudes toward local brands (Kipnis, Kubacki, Broderick, Siemieniako, & Pisarenko, 2012). As consumers converge globally in their spending behavior, it would lead to a decrease in ethnocentrism, thus affecting local firms negatively.

With the rise in convergence, high degree of internationalization can also slow down the increase of a firm's market share. High degree of internationalization may imply operating in less converging and less globalized countries, management problems and complications due to scale, especially in terms of balancing the adaptation versus standardization strategies. Instead, our results show that moderately-internationalized firms gain most from convergence. The reason can be that moderately-internationalized firms are likely to be in highly converging, intensely globalizing markets with the right balance of adaptation versus standardization strategies. Counterforces to convergence can also play a role in this finding. Similar to the insignificant effect of convergence on the top one firm's market share, highly-internationalized countries may already be saturated enough and there may be no more room for growth in response to convergence.

7. Contributions

The literature is limited in testing the convergence trend as well as its consequences on firm performance. Our study enriches the scholarly literature by investigating the effects of convergence of consumer spending on firms' market shares. Our findings have managerial and scholarly contributions in showing that, as consumers across the world markets are becoming more homogenized, the largest firms are benefiting from this trend. Firms that benefit most from the convergence trend are those originating from EMs, operating in AMs and those with a moderate degree of internationalization.

The firm-level effects of convergence will also help scholars develop new theories on the relationship of product category-level and firm-level consumer behavior. The findings of this study help us understand how the increasing similarity of consumer spending on a product category relates to their spending behavior across firms. As convergence for a product category also reflects convergence for largest firms, the explanations related to the social influence theories prove to be valid (e.g. bandwagon effect, observational learning, peer influence, neighborhood effect, herd behavior, and conformity theories). As consumers become more similar in their spending behavior toward product categories, they also become more similar in their spending behavior toward firm brands. In sum, this paper leads the pathway for future studies to develop theories on the mechanisms beyond the consequences of convergence trend of consumer expenditure.

8. Implications

Our study provides evidence that as the global convergence of consumer spending increases at the product category level, consumers also converge toward leading firms in a market. As a result, convergence of consumer spending across countries increases the market power of the largest firms in a country.

Managerial Implications

A main managerial implication from our findings is that top firms should benefit from the convergence trend because they are likely to gain more market shares in the face of the global convergence of consumer spending. For example, they can benefit from social influence through social networks to sell their products more. As in the example of Amazon explicitly

demonstrating the highest selling brand in a category, leading firms should find mediums to emphasize their leading positions so that consumers will prefer their brand because it is popular.

However, the opportunity to increase market shares due to convergence may present risks for some leading firms, especially in the luxury segment. For example, China's new rich has embraced Western conspicuous consumption extensively.[9] Luxury brands like Ferrari, Prada, Louis Vuitton, and Gucci may benefit more from global convergence in terms of increasing market shares. However, they face the risk of losing their exclusivity if masses converge toward these firms. For instance, increasing sales in the luxury car segment have pushed luxury car manufacturers like Ferrari to put an annual cap on car sales to preserve exclusivity (e.g. 7,000 cars in 2014).[10,11] Louis-Vuitton has already been facing the risk of brand dilution and losing exclusivity due to its mass-appeal. Louis Vuitton has been very successful in China since the early 2000s. Not only affluent customers, but also those from the middle class, have shown a convergence trend toward the brand. However, recently China's elite got concerned about the brand being used by mainstream customers. Consequently, China's affluent class has started abandoning the brand for more expensive brands.[12] In this case, Louis Vuitton may also need to put a cap or develop new brands to address the needs of these converging groups from different directions, or reposition its current brand to appeal to its core customer group not to dilute the brand. In sum, luxury brands should pay attention to the dark side of the global convergence of consumer spending to avoid brand dilution.

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[9] http://www.wsj.com/articles/SB10001424052702304050304577378032548853036
[10] http://www.cnbc.com/id/101472985
[11] http://www.usatoday.com/story/money/cars/2013/05/08/ferrari-limits-sales-fiat-maserati/2144545/
[12] http://www.businessinsider.com/louis-vuitton-losing-sales-in-china-2015-2

Increased market concentration as a result of convergence also brings challenges to companies in terms of market entry. While top firms benefit from convergence and gain more market shares leading to higher market concentration, it becomes more challenging for new firms to enter these markets. Entry costs increase substantially in concentrated industries due to the possible collusion of the leading firms against the entrant (Gatignon et al., 1990). Moreover, leading firms develop economies of scale while new entrants have to face large scale of operations (Gatignon et al., 1990). As a result, increased market concentration led by the global convergence of consumer spending behavior is likely to weaken the potential of new entrants. Firms considering an entry into a market or an industry should target less converging markets or industries with lower market concentration.

Another managerial implication of our study suggests that there are increasing opportunities for EM-originating firms due to the convergence trend. EM firms should aim to benefit from this trend, and target entering or expanding in AM markets to increase their market shares. Also, internationalization is very important in increasing market shares in the face of convergence. Companies should also benefit from the convergence trend by internationalizing more. Our results show that race to become an international brand is well justified. CEOs should be investing more to create international brands. However, it should be noted that high degree of internationalization, along with convergence, may not be as efficient as moderate degree of internationalization.

Scholarly Implications

The global convergence hypothesis and its implications, although widely discussed, have not been empirically tested in the literature. Although global convergence has major implications for

companies, its effects on company performance are not yet explored. Our analysis enriches the scholarly literature by investigating the effects of convergence of consumer spending on companies in terms of their market shares, and leads the way for developing new theories on the consequences of convergence in world markets. Furthermore, the effect of convergence on market shares proves to be significant. These new insights make it imperative for scholars to examine the impact of convergence on other major marketing topics such as global marketing strategies, product development, market entry decisions and advertising.

9. Future Research

Our study represents a pioneer study on examining the consequences of convergence for companies. Additionally, it induces new research questions in terms of implications of global convergence on companies, consumers, and societies.

First, we have looked at the effect of global convergence on market shares of firms. However, global convergence may have an effect on other major marketing mix variables such as global marketing strategy, new product development, foreign market entry, advertising, and communication decisions. For example, a future study can develop a market selection method for companies to choose new markets for entry taking into account the convergence patterns of markets. Another future study can examine whether integrated marketing strategies or standardized advertising programs in converging markets result in superior company performance. There are many future research avenues for scholars to investigate in terms of consequences of convergence.

One of our findings shows that local firms lose market shares as convergence increases. This finding shows a potential for new studies linking global convergence with liability of

foreignness. A future study can investigate the impact of global convergence on liability of foreignness. Global convergence trend has been increasing and local firms are losing market shares. As ethnocentric consumers favor local brands, the rise of global convergence may indicate that ethnocentricity is in decline globally. A future study can examine if this insight means that the significance of liability of foreignness for firms is decreasing over time.

In sum, the global convergence debate and its implications for businesses, societies, and consumers raise a wide range questions for future research. Scholars can develop many impactful research avenues based on the convergence debate that are likely to have major implications for all parties involved both scholarly and managerially.

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Figure 1. Conceptual Framework of the Global Convergence of Consumer Spending
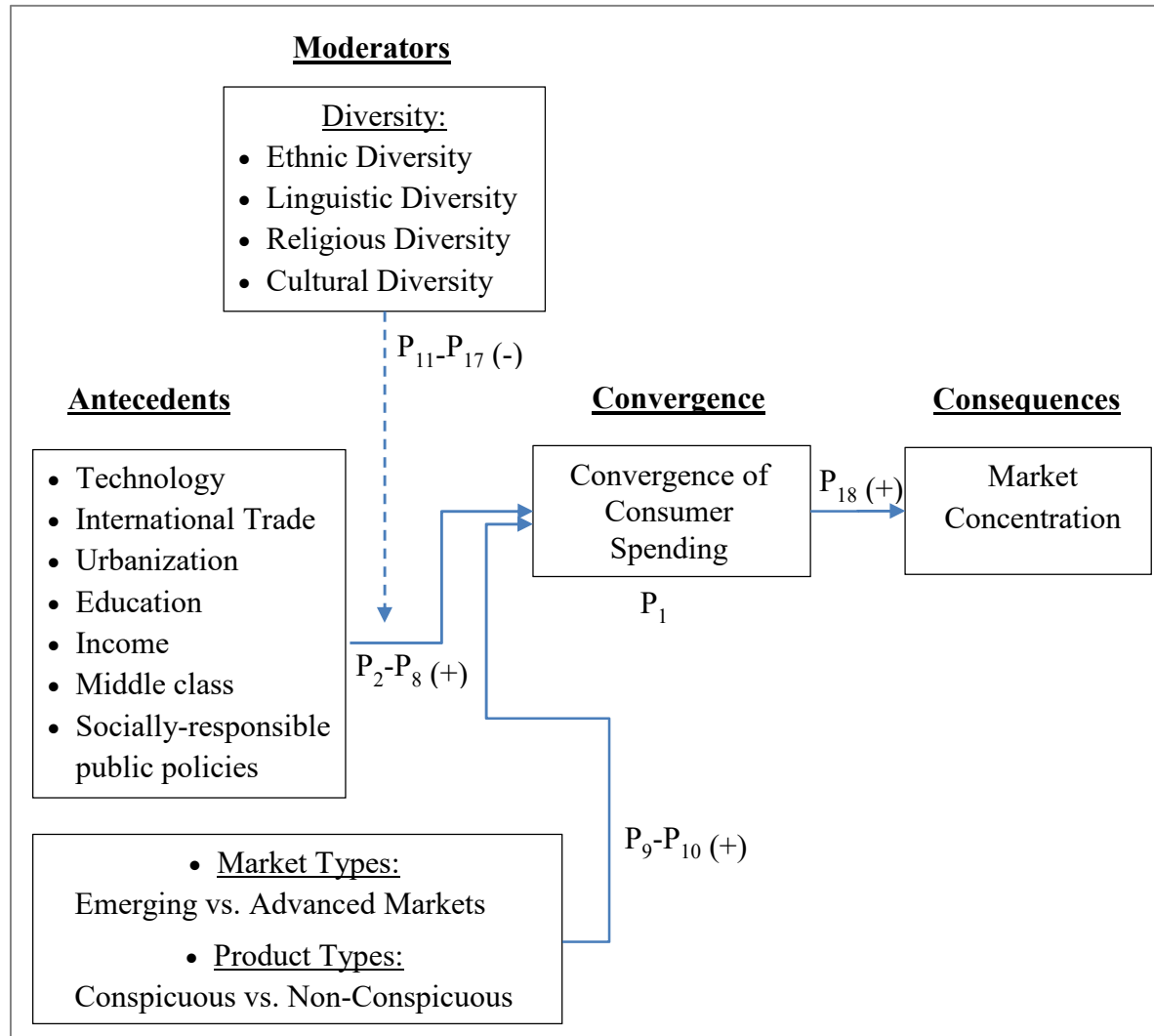
Figure 2. Mean Convergence Rates across Product Categories from 1990 to 2014
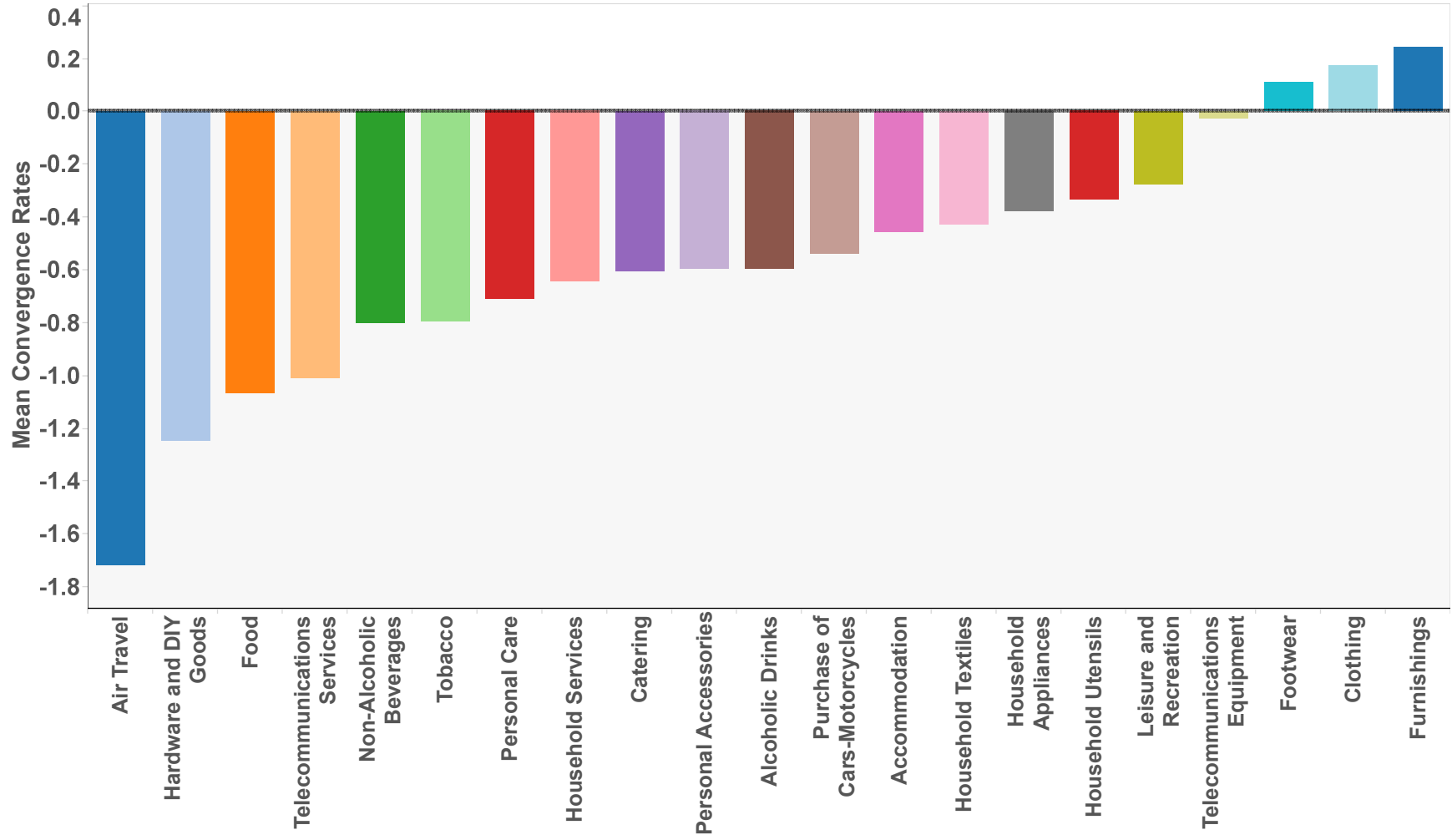
Figure 3. Coefficient of Variation of Expenditure (US$) over Time from 1990 to 2014[13]

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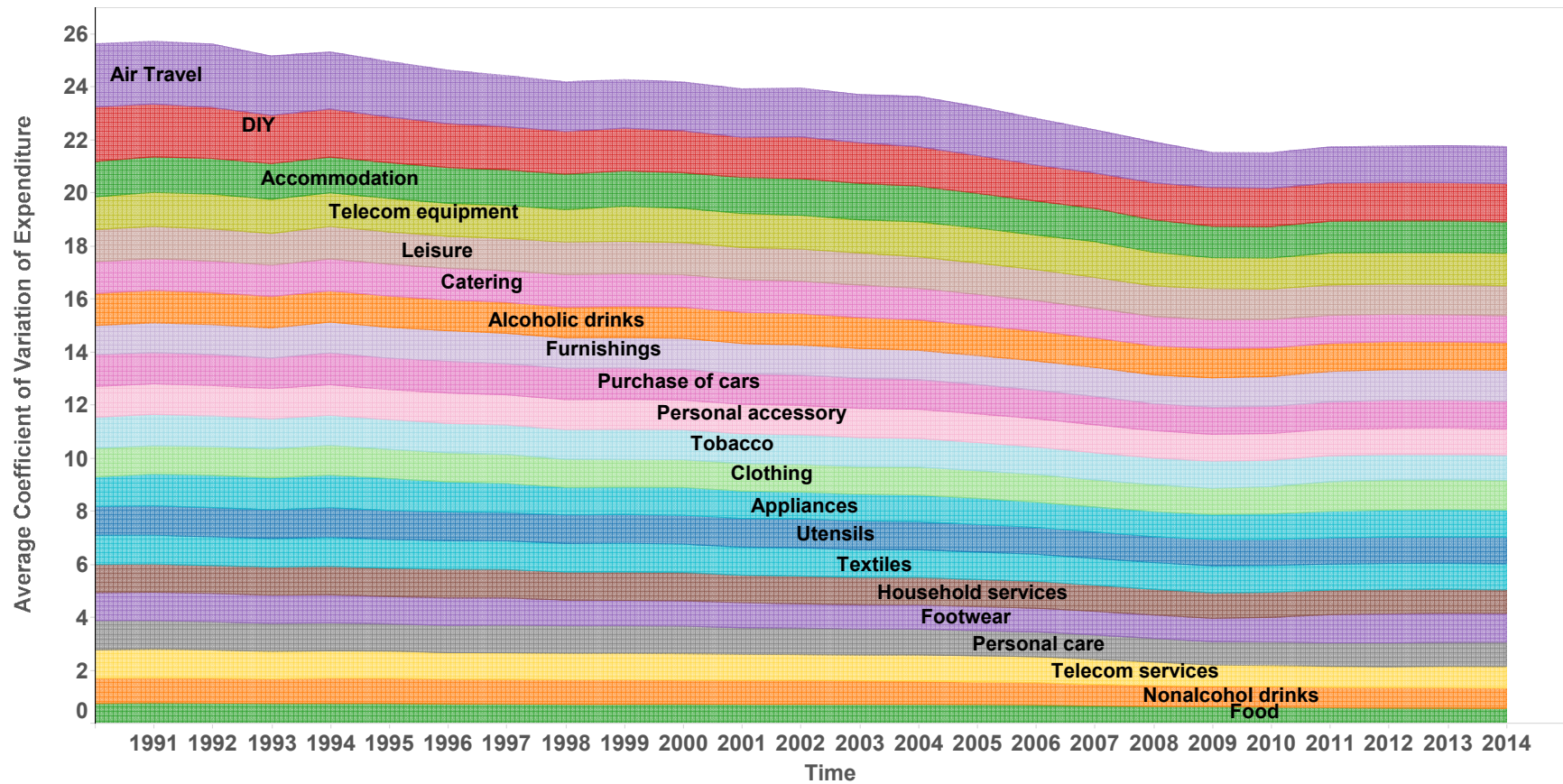
[13] The data points represent coefficient of variation (CV) of expenditure (US$) across 71 countries for a given product category in a given year: e.g. CV of expenditure (US$) on food in 1990. There are 21 product categories, thus 21 data points for each year.

Figure 4. Budget Allocation Gap over Time from 1990 to 2014[14]

_____
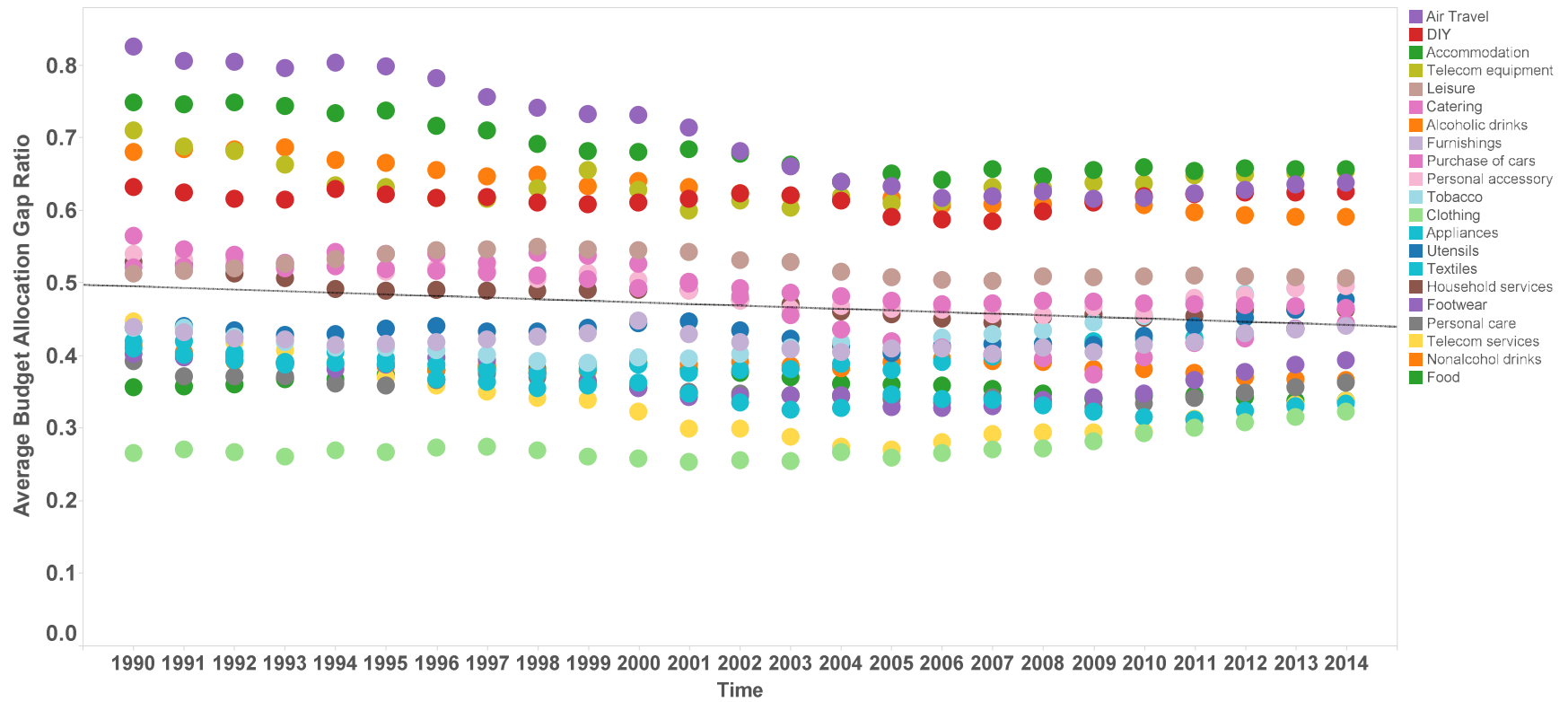
[14] The data points represent average budget allocation gap for 21 product categories over time.

Figure 5. Average Budget Allocation Gap in 1990 versus 2014 across Countries[15]

Budget Allocation Gap by Country - 1990

Budget Allocation Gap by Country - 2014

Budget Allocation Gap

0.20   0.80

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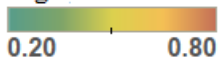
[15] The data points represent average budget allocation gap for all product categories across 71 countries.

Figure 6. Change in the Budget Allocation Gap from 1990 to 2014 across Countries[16]

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[16] The data points represent change in budget allocation gap from 1990 to 2014 (i.e. $BAG_{2014} - BAG_{1990}$) for all product categories across 71 countries.

Figure 7. Convergence Trend Coefficients by Country from 1990 to 2014

Figure 8. Initial Budget Allocation Gap in 1990 and Convergence Trend by Country

Figure 9. Expenditure Growth Rates versus Initial Expenditure Levels of Countries

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Figure 10. A Detailed Examination of Divergence in China in Diverging Product Categories

Personal Accessories, 1990

Sweden 0.147
Russia 0.471
Czech Republic 0.221
Kazakhstan 0.777
Greece 0.132
China 0.676
South Korea 0.622
Morocco 0.467
Saudi Arabia 0.158
India 0.082
Hong Kong 0.424
Nigeria 0.623
Kenya 0.370
Singapore 1.574
Australia 0.302
South Africa 0.663
New Zeala 0.721

Personal Accessories, 2014

Sweden 0.258
Russia 0.334
Denmark 0.275
Bosnia-Herzegovina 0.152
Kazakhstan 0.457
Morocco 0.644
China 2.859
South Korea 0.307
Saudi Arabia 2.651
India 1.191
Hong Kong 0.201
Nigeria 0.699
Kenya 0.620
Singapore 1.625
Australia 0.182
South Africa 0.593
New Zealar 0.016

Clothing, 1990

Sweden 0.081
Russia 0.423
Czech Republic 0.284
Kazakhstan 0.123
Greece 0.163
China 0.102
South Korea 0.008
Morocco 0.133
Saudi Arabia 0.270
India 0.111
Hong Kong 1.790
Nigeria 0.219
Kenya 0.562
Singapore 0.118
Australia 0.126
South Africa 0.354
New Zea 0.24

Clothing, 2014

Sweden 0.130
Russia 0.445
Denmark 0.163
Bosnia-Herzegovina 0.391
Kazakhstan 0.488
China 0.655
South Korea 0.631
Morocco 0.417
Saudi Arabia 0.141
India 0.745
Hong Kong 1.959
Nigeria 0.045
Kenya 0.660
Singapore 0.483
Australia 0.214
South Africa 0.065
New Zea 0.10

Budget Allocation Gap

0.20   0.80

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Figure 10. A Detailed Examination of Divergence in China in Diverging Product Categories
(Continued)

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Figure 11. Budget Allocation Gap for Personal Care in 1990 versus 2014 across Countries[17]

Budget Allocation Gap

0.20   0.80

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Figure 12: GDP Per Capita and Convergence Trend by Country

Figure 13. Market-Level Consequences of Global Convergence of Consumer Spending

| Convergence of Consumer Spending | H₁ (+) → | Market Concentration |

Figure 14. Firm-Level Consequences of Global Convergence of Consumer Spending

| **Firm's Country of Origin** Emerging Markets (vs. Advanced Markets) | **Firm's Country of Operation** Emerging Markets (vs. Advanced Markets) | **Firm's Degree of Internationalization** Local (vs. High) Moderate (vs. High) |

H_3 (+) H_4 (+) H_{5a} (-) H_{5b} (+)

| Convergence of Consumer Spending | H_2 (+) → | Market Shares of Leading Firms |

Note: The firm-level model is defined for the largest firms in terms of market shares and operationalized as the top four firms in a market.

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Figure 15. Histogram of Sum of Market Shares of Top One (CR1) to Four (CR4) Firms
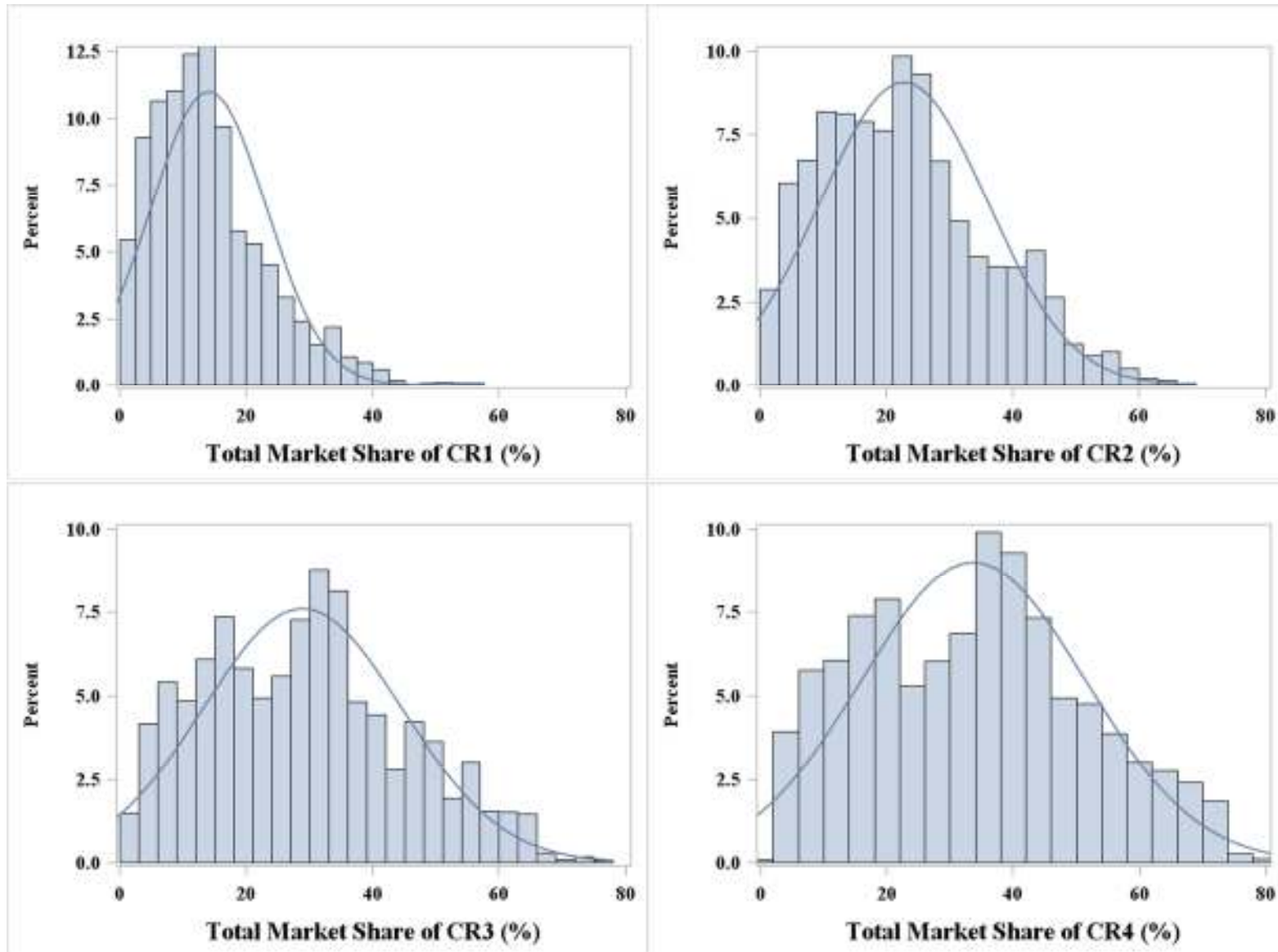
Figure 16. Average Marginal Effect of Convergence on Market Shares at Each Moderating Point
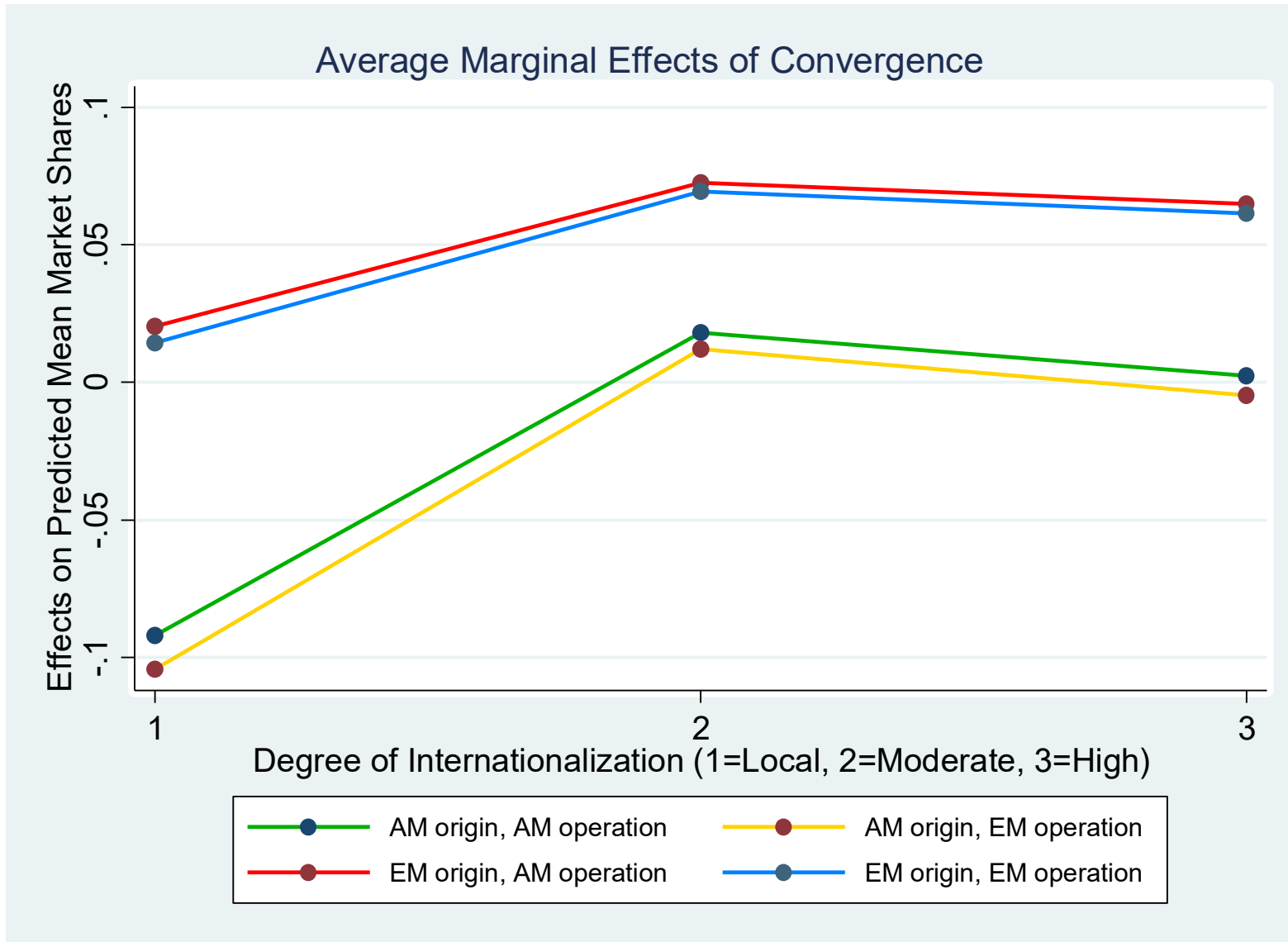
Table 1. Summary of the Literature on Convergence from Multiple Disciplines

Field	Specific topics in convergence	Theory	Assumptions	Studies
Economics	Convergence of per capita income	Neoclassical growth theory Kuznets Curve	Diminishing returns to capital	J. G. Williamson (1996) Solow (1956) Swan (1956) Kuznets (1955)
Economic Psychology	Convergence of consumption	Bandwagon effect	The more demand of a product, the more others use it	Leibenstein (1950)
Sociology	Convergence of societies and institutions (e.g., education systems, family patterns)	Modernization theory	Urbanization, industrialization, education, technology cause transition from traditional to modern	Inkeles (1998)
		McDonaldization thesis; Weberian theory of rationalization	Characteristics of fast-food restaurants dominate the societies	Ritzer (1998, 2008)
Political Science	Convergence of political and economic values	Convergence theory	Industrialization	Kerr, Dunlop, Harbison, & Myers (1960) Seita (1997)
Management	Convergence of cultural values	Crossvergence hypothesis	Convergence is economic ideology-driven; Divergence is culture-driven	Ralston, Holt, Terpstra, & Kai-Cheng (1997)
Marketing	Convergence of consumer tastes, needs and wants	Convergence theory; Global citizenship; Global consumer culture; The diffusion of innovation theory	Globalization, converging incomes, media and technology lead to homogenization of consumer behavior	Levitt (1983); Jain (1989) Steenkamp & De Jong (2010) Strizhakova, Coulter, & Price (2008) Yoo, Donthu, and Lenartowicz (2011) Leeflang and Van Raaij (1995) Sheth (2011); Ganesh (1998)

Table 2. Summary of the Literature on Divergence from Multiple Disciplines

Field	Specific topics in divergence	Theory	Assumptions	Studies
Economics	Divergence of per capita income across countries	New endogenous growth theories	Spillover effects, positive externalities	Capolupo (1998) Piketty (2014)
Economic Psychology	Divergence of consumption	Snob effect	The less demand of a product, the more others use it	Leibenstein (1950)
Sociology	Divergence of societies and institutions	Modernization theory	Different forms of modernity	De Mooij (2010)
Political Science	Divergence of political and economic values	Great Divergence	Emphasized civilizational identities Increasing income inequality	Huntington (1987, 1993) Piketty (2014)
Management	Divergence of cultural values	Crossvergence hypothesis	Convergence is economic ideology-driven; Divergence is culture-driven	Ralston, Holt, Terpstra, & Kai-Cheng (1997)
Marketing	Divergence of consumer tastes, needs and wants	Convergence theory; The diffusion of innovation theory	Culture becomes more prevalent as incomes converge; Differences in international growth of new products	De Mooij (2010); Stremersch and Tellis (2004) Johansson (2002, 2009)

Table 3. List of Product Categories in the Data Set

	Product Categories in the Dataset
1	Consumer Expenditure on Food
2	Consumer Expenditure on Non-Alcoholic Beverages
3	Consumer Expenditure on Alcoholic Drinks
4	Consumer Expenditure on Tobacco
5	Consumer Expenditure on Clothing
6	Consumer Expenditure on Footwear
7	Consumer Expenditure on Furniture and Furnishings, Carpets and Other Floor Coverings
8	Consumer Expenditure on Household Textiles
9	Consumer Expenditure on Household Appliances
10	Consumer Expenditure on Glassware, Tableware and Household Utensils
11	Consumer Expenditure on Hardware and DIY Goods
12	Consumer Expenditure on Household and Domestic Services
13	Consumer Expenditure on Purchase of Cars, Motorcycles and Other Vehicles
14	Consumer Expenditure on Air Travel
15	Consumer Expenditure on Telecommunications Equipment
16	Consumer Expenditure on Telecommunications Services
17	Consumer Expenditure on Leisure and Recreation
18	Consumer Expenditure on Catering
19	Consumer Expenditure on Accommodation
20	Consumer Expenditure on Personal Care
21	Consumer Expenditure on Personal Accessories (Jewellery, Silverware, Watches and Clocks, Travel Goods)

Table 4. Descriptive Statistics on Key Variables

Variable	N	Mean	Std Dev	Minimum	Maximum
Expenditure (per capita, US$)	37,015	297.09	553.00	0.00	6,412.90
Growth in Expenditure (%)	35,491	2.87	11.27	-100.00	236.36
Coefficient of Variation of Expenditure	37,275	1.12	0.25	0.55	2.40
Budget Allocation Gap	37,015	0.47	0.43	0.00	8.05

Table 5. Mean Convergence Rates from 1990 to 2014

Product Categories	Mean Convergence Rates of Consumer Expenditure from 1990 to 2014
Air Travel	**-1.72**
Hardware and DIY Goods	**-1.25**
Food	**-1.07**
Telecommunications Services	**-1.01**
Non-Alcoholic Beverages	**-0.80**
Tobacco	**-0.79**
Personal Care	**-0.71**
Household and Domestic Services	**-0.64**
Catering	**-0.60**
Personal Accessories	**-0.60**
Alcoholic Drinks	**-0.59**
Purchase of Cars	**-0.54**
Accommodation/Hotels	**-0.46**
Household Textiles	**-0.43**
Household Appliances	**-0.38**
Glassware, Tableware, and Household Utensils	**-0.33**
Leisure and Recreation	**-0.28**
Telecommunications Equipment	**-0.03**
Footwear	0.11
Clothing	0.17
Furniture and Furnishings, and Carpets	0.24
Mean Convergence Rate	**-0.56**

Table 6. Regression Results for the Coefficient of Variation Trend across Product Categories

Regression Model for the Trend Lines			
Dependent Variable: Coefficient of Variation of Expenditure			
Product Category	Variable	Coefficient	p-value
Air Tavel	Year	-0.044	< 0.0001
DIY	Year	-0.024	< 0.0001
Telecom services	Year	-0.012	< 0.0001
Appliances	Year	-0.010	< 0.0001
Nonalcohol drinks	Year	-0.009	< 0.0001
Personal care	Year	-0.009	< 0.0001
Tobacco	Year	-0.009	< 0.0001
Food	Year	-0.008	< 0.0001
Purchase of cars	Year	-0.008	< 0.0001
Accommodation	Year	-0.008	< 0.0001
Personal accessory	Year	-0.008	< 0.0001
Catering	Year	-0.008	< 0.0001
Household services	Year	-0.007	< 0.0001
Alcoholic drinks	Year	-0.007	< 0.0001
Utensils	Year	-0.006	< 0.0001
Textiles	Year	-0.005	< 0.0001
Leisure	Year	-0.004	< 0.0001
Telecom equipment	Year	-0.002	0.074
Footwear	Year	-0.003	0.210
Clothing	Year	-0.001	0.532
Furnishings	Year	0.000	0.885
R-Squared		0.972	
F		386.892	
p-value		< 0.0001	

Note: The regression model used to test the significance of time trends for product categories is:
$Coefficient\ of\ variation_{pt} = [α + β_1\ (Year_t)] * Product\ category\ dummy_p$

Table 7. Regression Results for the Budget Allocation Gap Trend across Product Categories

Regression Model for the Trend Lines
Dependent Variable: Budget Allocation Gap

Product Category	Variable	Coefficient	p-value
Air Tavel	Year	-0.0099	< 0.0001
Purchase of cars	Year	-0.0074	< 0.0001
Telecom services	Year	-0.0052	< 0.0001
Accommodation	Year	-0.0046	< 0.0001
Alcoholic drinks	Year	-0.0042	< 0.0001
Appliances	Year	-0.0039	< 0.0001
Personal accessory	Year	-0.0030	< 0.0001
Catering	Year	-0.1649	< 0.0001
Household services	Year	-0.0029	< 0.0001
Footwear	Year	-0.0017	0.0128
Personal care	Year	-0.0016	< 0.0001
Food	Year	-0.0014	0.0008
Nonalcohol drinks	Year	-0.0009	0.0005
Leisure	Year	-0.0013	0.0027
Telecom equipment	Year	-0.0012	0.1180
DIY	Year	-0.0003	0.3251
Furnishings	Year	-0.0003	0.4364
Utensils	Year	0.0005	0.6118
Clothing	Year	0.0017	0.0004
Textiles	Year	0.0016	0.0019
Tobacco	Year	0.0028	0.0004
R-Squared		0.979	
F		567.093	
p-value		< 0.0001	

Note: The regression model used to test the significance of time trends for product categories is:
$Budget\ Allocation\ Gap_{pt} = [\alpha + \beta_1\ (Year_t)]\ *\ Product\ category\ dummy_p$

Table 8. Regression Results for the Budget Allocation Gap Trend across Countries

Country	Variable	Coefficient	p-value	Country	Variable	Coefficient	p-value
Belarus	Year	-0.0163	< 0.0001	Japan	Year	-0.0017	< 0.0001
Kuwait	Year	-0.0146	< 0.0001	Venezuela	Year	-0.0016	0.027
Hong Kong, China	Year	-0.0108	< 0.0001	Iran	Year	-0.0014	0.014
Russia	Year	-0.0106	< 0.0001	Egypt	Year	-0.0014	< 0.0001
New Zealand	Year	-0.0103	< 0.0001	Malaysia	Year	-0.0012	0.036
South Africa	Year	-0.0086	< 0.0001	France	Year	-0.0011	0.008
Poland	Year	-0.0070	< 0.0001	Germany	Year	-0.0011	0.055
Serbia	Year	-0.0068	< 0.0001	United Arab Emirates	Year	-0.0009	0.058
Georgia	Year	-0.0067	< 0.0001	Hungary	Year	-0.0009	0.089
Ukraine	Year	-0.0066	< 0.0001	Austria	Year	-0.0006	0.072
Romania	Year	-0.0062	< 0.0001	South Korea	Year	-0.0016	0.378
Argentina	Year	-0.0060	< 0.0001	Belgium	Year	-0.0004	0.293
Costa Rica	Year	-0.0058	0.001	United Kingdom	Year	-0.0002	0.708
Ecuador	Year	-0.0057	< 0.0001	Chile	Year	0.0001	0.922
Portugal	Year	-0.0057	< 0.0001	Bulgaria	Year	0.0001	0.927
Greece	Year	-0.0054	< 0.0001	Finland	Year	0.0005	0.274
Kazakhstan	Year	-0.0054	< 0.0001	Sweden	Year	0.0006	0.156
Switzerland	Year	-0.0053	< 0.0001	Tunisia	Year	0.0007	0.101
Peru	Year	-0.0049	< 0.0001	Mexico	Year	0.0011	0.020
Uzbekistan	Year	-0.0048	0.008	Singapore	Year	0.0012	0.033
Israel	Year	-0.0041	0.002	Denmark	Year	0.0016	< 0.0001
Morocco	Year	-0.0040	< 0.0001	Italy	Year	0.0018	< 0.0001
Netherlands	Year	-0.0039	< 0.0001	Croatia	Year	0.0021	0.002
Algeria	Year	-0.0037	0.001	Philippines	Year	0.0023	< 0.0001
Turkey	Year	-0.0037	0.001	Australia	Year	0.0023	< 0.0001
Colombia	Year	-0.0036	< 0.0001	Thailand	Year	0.0026	0.005
Brazil	Year	-0.0034	0.008	Nigeria	Year	0.0027	< 0.0001
Kenya	Year	-0.0032	< 0.0001	Norway	Year	0.0032	< 0.0001
USA	Year	-0.0032	< 0.0001	Saudi Arabia	Year	0.0032	< 0.0001
Indonesia	Year	-0.0031	0.005	Guatemala	Year	0.0047	< 0.0001
Spain	Year	-0.0026	< 0.0001	Jordan	Year	0.0050	< 0.0001
Uruguay	Year	-0.0026	< 0.0001	Czech Republic	Year	0.0052	< 0.0001
Bosnia-Herzegovina	Year	-0.0024	< 0.0001	India	Year	0.0059	< 0.0001
Ireland	Year	-0.0022	0.003	Pakistan	Year	0.0061	< 0.0001
Canada	Year	-0.0019	< 0.0001	China	Year	0.0087	< 0.0001
Taiwan	Year	-0.0018	0.003				
R-Squared: 0.950		F: 214.489		p-value: <0.0001			

Note: The regression model used to test the significance of time trends for countries is:

$$Budget\ Allocation\ Gap_{ct} = [\alpha + \beta_1\ (Year_t)] * Country\ dummy_c$$

Table 9. Polynomial Regression of Expenditure Growth Rates on Initial Expenditure Levels

Parameter Estimates			
Variable	**Coefficient**	**t-value**	**p-value**
Intercept	-1.646	-0.690	0.491
Initial Expenditure$_{t-1}$	**-0.015**	-15.510	**<.0001**
Initial Expenditure-squared $_{t-1}$	**0.000002**	11.440	**<.0001**
Country fixed-effects		Yes	
Product category fixed-effects		Yes	
Year fixed-effects		Yes	
R-Square		0.60	
F-value		13.31	
p-value		<.0001	
N		35,491	

Table 10. A Product Category Level Examination of the Most Converging Markets

Converging Product Categories	Year	Budget Allocation in the Country	Mean Budget Allocation in the World	Budget Allocation Gap	Gap Decrease from 1990 to 2014
BELARUS					
Alcoholic Drinks	1990	13.1%	3.2%	3.12	-1.71
	2014	6.9%	2.9%	1.40	
Telecom services	1990	0.2%	2.2%	0.89	-0.84
	2014	5.7%	5.4%	0.05	
Telecom equipment	1990	0.1%	0.3%	0.78	-0.73
	2014	0.7%	0.7%	0.05	
KUWAIT					
Furnishings	1990	7.0%	2.8%	1.51	-0.64
	2014	4.3%	2.3%	0.87	
Air Travel	1990	3.2%	0.8%	3.13	-2.77
	2014	1.3%	1.0%	0.36	
Textiles	1990	2.5%	0.9%	1.88	-0.83
	2014	1.4%	0.7%	1.06	
HONG KONG					
Appliances	1990	6.5%	1.8%	2.58	-0.97
	2014	4.8%	1.8%	1.61	
Utensils	1990	2.3%	1.0%	1.36	-1.03
	2014	1.1%	0.8%	0.33	
Textiles	1990	0.3%	0.9%	0.69	-0.49
	2014	0.6%	0.7%	0.20	
RUSSIA					
Alcoholic Drinks	1990	12.3%	3.2%	2.85	-1.00
	2014	8.2%	2.9%	1.85	
Tobacco	1990	4.7%	3.0%	0.59	-0.59
	2014	3.2%	3.2%	0.00	
Nonalcoholic Drinks	1990	0.8%	2.7%	0.69	-0.52
	2014	3.3%	2.8%	0.16	
NEW ZEALAND					
Purchase of cars	1990	12.7%	4.9%	1.62	-1.37
	2014	6.7%	5.4%	0.25	
Air Travel	1990	2.9%	0.8%	2.72	-1.08
	2014	2.6%	1.0%	1.64	
Personal accessory	1990	2.2%	1.3%	0.72	-0.70
	2014	1.5%	1.5%	0.02	

Table 11. A Product Category Level Examination of the Most Diverging Markets

Diverging Product Categories	Year	Budget Allocation in the Country	Mean Budget Allocation in the World	Budget Allocation Gap	Gap Increase from 1990 to 2014
CHINA					
Clothing	1990	10.4%	9.4%	0.10	0.55
	2014	10.7%	6.5%	0.65	
Footwear	1990	2.6%	2.5%	0.02	0.49
	2014	3.0%	2.0%	0.51	
Personal accessory	1990	2.1%	1.3%	0.68	2.18
	2014	5.8%	1.5%	2.86	
Telecom equipment	1990	0.2%	0.3%	0.19	0.85
	2014	1.3%	0.7%	1.04	
PAKISTAN					
Household services	1990	5.0%	2.6%	0.89	0.61
	2014	7.1%	2.8%	1.50	
Textiles	1990	1.6%	0.9%	0.83	1.39
	2014	2.2%	0.7%	2.22	
Telecom equipment	1990	0.2%	0.3%	0.16	0.69
	2014	1.2%	0.7%	0.84	
INDIA					
Clothing	1990	8.4%	9.4%	0.11	0.63
	2014	11.3%	6.5%	0.75	
Personal care	1990	3.6%	3.5%	0.05	0.50
	2014	7.1%	4.6%	0.55	
Personal accessory	1990	1.4%	1.3%	0.08	1.11
	2014	3.3%	1.5%	1.19	

Table 12. Descriptive Statistics on Key Variables

Variable	N	Mean	Std Dev	Minimum	Maximum
Budget Allocation Gap	14,230	0.42	0.40	0.00	2.79
Market Shares	14,230	0.08	0.07	0.00	0.57
Country of Origin (AM=0, EM=1)	14,230	0.17	0.38	0.00	1.00
Country of Operation (AM=0, EM=1)	14,230	0.52	0.50	0.00	1.00
Degree of Internationalization (Local=1, Moderate=2, High=3)	14,230	2.04	0.81	1.00	3.00

Table 13. List of Product Categories in the Data Set

	Product Categories in the Dataset
1	Consumer Expenditure on Food
2	Consumer Expenditure on Clothing
3	Consumer Expenditure on Footwear
4	Consumer Expenditure on Furniture and Furnishings, Carpets and Other Floor Coverings
5	Consumer Expenditure on Household Appliances
6	Consumer Expenditure on Household and Domestic Services
7	Consumer Expenditure on Telecommunications Equipment
8	Consumer Expenditure on Accommodation
9	Consumer Expenditure on Personal Care
10	Consumer Expenditure on Personal Accessories (Jewellery, Silverware, Watches and Clocks, Travel Goods)

Table 14. Classification of Countries

Emerging Markets	Advanced Markets
Argentina	Australia
Brazil	Austria
Chile	Canada
China	Denmark
Colombia	France
Czech Republic	Germany
Egypt	Greece
India	Hong Kong, China
Indonesia	Israel
Malaysia	Italy
Mexico	Japan
Morocco	Netherlands
Philippines	Norway
Poland	Portugal
Romania	Singapore
Russia	South Korea
Saudi Arabia	Spain
South Africa	Sweden
Taiwan	USA
Thailand	United Arab Emirates
Turkey	United Kingdom
Ukraine	
Venezuela	

Table 15. Descriptive Statistics on CR1, CR2, CR3, and CR4

Variable	N	Mean	Std Dev	Minimum	Maximum
CR1 Shares	3562	14.13	9.10	0.60	57.30
CR2 Shares	3562	22.84	13.22	1.00	66.70
CR3 Shares	3562	28.95	15.76	1.40	76.00
CR4 Shares	3562	33.72	17.76	1.70	84.20

Table 16. Fractional Logit Model Results for Market Concentration

Parameter Estimates					
Variable	**Hypothesis**	**CR1 Model**	**CR2 Model**	**CR3 Model**	**CR4 Model**
Convergence	**H1**	0.0182	**0.0670*****	**0.0857*****	**0.0990*****
		(0.0262)	(0.0246)	(0.0239)	(0.0242)
Intercept		**-1.4118*****	**-0.6367*****	**-0.2065*****	**0.0900*****
		(0.0623)	(0.0507)	(0.0461)	(0.0458)
Country fixed-effects		Yes	Yes	Yes	Yes
Product category fixed-effects		Yes	Yes	Yes	Yes
Year fixed-effects		Yes	Yes	Yes	Yes
Log-Likelihood		-989.77	-1,246.42	-1,361.38	-1,420.60
N		3,562	3,562	3,562	3,562

Note: Robust standard errors in parentheses; *** p<0.01

Table 17. Marginal Effect of Convergence on Market Concentration

Variable	CR1 Model	CR2 Model	CR3 Model	CR4 Model
Convergence	0.0021	**0.0110*****	**0 .0161*****	**0.0198*****
	(0.0031)	(0.0041)	(0.0045)	(0.0048)

Note: n=3,562; Robust standard errors in parentheses; *** p<0.01

Table 18. Fractional Logit Model Results for Market Shares

GLM Parameter Estimates					
Variable	**Hypotheses**	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Convergence	**H2**	**0.0369***	**0.6117*****	**0.5943*****	**1.1583*****
		(0.0189)	(0.0828)	(0.0836)	(0.1462)
Convergence * Country of origin (AM)	**H3**		**-0.5912*****	**-0.6096*****	**-1.2199*****
			(0.0844)	(0.0842)	(0.1432)
Convergence * Country of operation (AM)	**H4**			**0.0868****	**0.0961****
				(0.0347)	(0.0330)
Convergence * DOI (1. Local)	**H5a**				**-0.9530*****
					(0.1285)
Convergence * DOI (2. Moderately-internationalized)	**H5b**				**0.2309*****
					(0.0327)
Intercept		**-2.3942*****	**-2.4026*****	**-2.4151*****	**-2.4430*****
		(0.0932)	(0.0927)	(0.0929)	(0.0938)
Country fixed-effects		Yes	Yes	Yes	Yes
Product category fixed-effects		Yes	Yes	Yes	Yes
Year fixed-effects		Yes	Yes	Yes	Yes
Company fixed-effects		Yes	Yes	Yes	Yes
Log-Likelihood		-2,873.00	-2,872.30	-2,872.21	-2,869.78
N		14,230	14,230	14,230	14,230

Note: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Reference groups are: Emerging Markets (for H3 and H4) and Highly-Internationalized Firms (for H5a and H5b)

Table 19. Marginal Effect of Convergence on Market Shares at Each Moderating Set

Moderating Points	Moderator 1: Country of Origin	Moderator 2: Country of Operation	Moderator 3: Degree of Internationalization	Marginal Effect of Convergence	Robust Standard Errors
1	AM	AM	Local	**-0.0919*****	(0.0159)
2	AM	AM	Moderate	**0.0182*****	(0.0021)
3	AM	AM	High	0.0026	(0.0021)
4	AM	EM	Local	**-0.1042*****	(0.0162)
5	AM	EM	Moderate	**0.0120*****	(0.0021)
6	AM	EM	High	**-0.0047****	(0.0021)
7	EM	AM	Local	**0.0205*****	(0.0067)
8	EM	AM	Moderate	**0.0725*****	(0.0047)
9	EM	AM	High	**0.0649*****	(0.0052)
10	EM	EM	Local	**0.0144****	(0.0070)
11	EM	EM	Moderate	**0.0695*****	(0.0049)
12	EM	EM	High	**0.0615*****	(0.0055)

Note: n=14,230; *** $p<0.01$, ** $p<0.05$, * $p<0.1$

AM: Advanced Markets; EM: Emerging Markets

Table 20. Robustness Checks: Fractional Logit Model Results of Market Concentration for Two Random Subsamples

Parameter Estimates - Random Subsample 1					
Variable	Hypotheses	CR1 Model	CR2 Model	CR3 Model	CR4 Model
Convergence	**H1**	**.0663***	**.0765****	**.0715****	**.0726****
		(0.0371)	(0.0003)	(0.0316)	(0.0312)
Intercept		-1.4030***	-.6457***	-.2240***	0.0759
		(0.0747)	(0.0624)	(0.0579)	(0.0575)
Country fixed-effects		Yes	Yes	Yes	Yes
Product category fixed-effects		Yes	Yes	Yes	Yes
Year fixed-effects		Yes	Yes	Yes	Yes
Log-Likelihood		-487.36	-613.85	-672.08	-702.08
N		1,779	1,779	1,779	1,779

Note: Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Parameter Estimates - Random Subsample 2					
Variable	Hypotheses	CR1 Model	CR2 Model	CR3 Model	CR4 Model
Convergence	**H1**	-0.0249	0.0522	**.0963*****	**.1254*****
		(0.0373)	(0.0362)	(0.0357)	(0.0369)
Intercept		-1.1273***	-.4284***	-0.0579	.2005**
		(0.0889)	(0.0843)	(0.0849)	(0.0883)
Country fixed-effects		Yes	Yes	Yes	Yes
Product category fixed-effects		Yes	Yes	Yes	Yes
Year fixed-effects		Yes	Yes	Yes	Yes
Log-Likelihood		-501.35	-631.55	-688.33	-717.54
N		1,783	1,783	1,783	1,783

Note: Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 21. Robustness Checks: Fractional Logit Model Results of Market Shares for Two Random Subsamples

GLM Parameter Estimates			
Variable	Hypotheses	Random Subsample 1	Random Subsample 2
Convergence	**H2**	**1.3095*****	**1.2114*****
		(0.1921)	(0.2235)
Convergence * Country of origin (AM)	**H3**	**-1.5076*****	**-1.2093*****
		(0.1872)	(0.2199)
Convergence * Country of operation (AM)	**H4**	**0.2797*****	-0.0169
		(0.0477)	(0.0495)
Convergence * DOI (1. Local)	**H5a**	**-1.0342*****	**-0.9790*****
		(0.1534)	(0.2001)
Convergence * DOI (2. Moderately-internationalized)	**H5b**	**0.3288*****	**0.1089****
		(0.0511)	(0.0463)
Intercept		**-2.2754*****	**-2.7886*****
		(0.1259)	(0.1300)
Country fixed-effects		Yes	Yes
Product category fixed-effects		Yes	Yes
Year fixed-effects		Yes	Yes
Company fixed-effects		Yes	Yes
Log-Likelihood		-1,445.66	-1,415.54
N		7,114	7,116

Notes: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Reference groups are: Emerging Markets (for H3 and H4) and Highly-Internationalized Firms (for H5a and H5b)

APPENDICES

Appendix 1. Mean Budget Allocation versus Median Budget Allocation as Reference Points in Calculating the Budget Allocation Gap
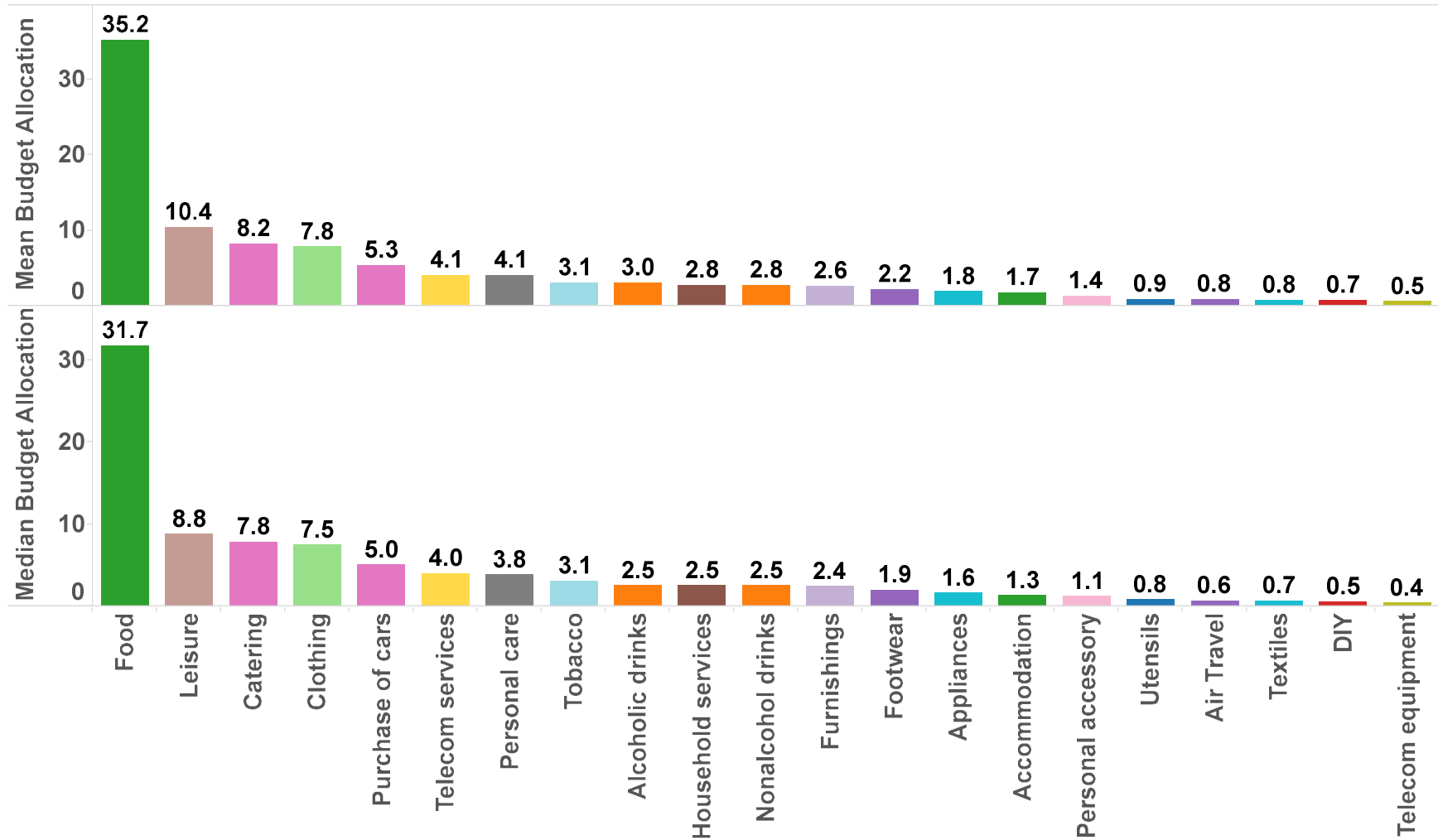
Appendix 2. Fractional Logit Model Results of Market Concentration

(Using Herfindahl-Hirschman Index - HHI)

Parameter Estimates					
Variable	Hypothesis	HHI1 Model	HHI2 Model	HHI3 Model	HHI4 Model
Convergence	**H1**	-0.0001	**0.0773***	**0.071***	**0.0836***
		(0.0133)	(0.0115)	(0.0108)	(0.0105)
Intercept		**-62.819***	**-52.3714***	**-51.0585***	**-55.0972***
		(8.1641)	(6.8343)	(6.3107)	(6.0576)
Country fixed-effects		Yes	Yes	Yes	Yes
Product category fixed-effects		Yes	Yes	Yes	Yes
Year fixed-effects		Yes	Yes	Yes	Yes
Log-Likelihood		-35,056.68	-36,340.81	-34,917.97	-34,113.34
N		3,562	3,562	3,562	3,562

Note: Robust standard errors in parentheses; *** p<0.01