The effect of marketing expenditures during financial crisis: the case of Turkey

Aykan Candemir\textsuperscript{a}, Ali Erhan Zalluhoglu\textsuperscript{b}, \textsuperscript{a}\textsuperscript{*}

\textsuperscript{a}Ege University, Faculty of Business and Administrative Sciences, Bornova, Izmir, 35040, Turkey

Abstract

Today, all economies are related with others due to the acceleration of globalization process. Huge financial movements in a globalized world can be the reasons for fluctuations in many countries especially the emerging countries \cite{1}. The financial and economic crises have the potential to lead in a period of a global recession that may seriously destabilize all countries’ process of economic growth and transformation. In particular, the crisis may put a brake on and also reverse efforts in developing countries \cite{2}. In this study, “the effect of marketing expenditures on company performance during financial crises periods” has been the main question. Within this framework, a review of the literature and a statement of the research questions, followed by the methodology and the findings are evaluated. Assessment on the results and conclusions about the effect of marketing expenditures on company sales performance are presented. This paper has its originality for finding out the effects of marketing expenditures, R&D expenditures and macroeconomic data (growth, inflation and foreign currency) on company performance within specific periods i.e. 2001 and 2008 crises in Turkey.

Keywords: Marketing expenditures, crisis, financial crisis, Turkey, company sales

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1. Introduction

Globalization since the mid-1980s has been marked by the increase in global trade and a surge in capital flows among industrial countries and, more notably, between industrial and developing countries. Although capital inflows have been associated with high growth rates in some developing countries, a number of them have also experienced periodic collapses in growth rates and significant financial crises that have had substantial macroeconomic and social costs \cite{3}. Political and economic changes, changes in consumer demand, market structures, product and market life cycles, domestic and foreign competition and the degree of effects caused by these changes became more significant. Such changes force the companies to implement flexible strategies and action plans.

\textsuperscript{*} Corresponding author. Tel. +90-232-311-1915  fax. +90-232-373-4194
Email address: aykan.candemir@ege.edu.tr

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2. Literature Review

Crises are unexpected events that stop the ability of the management and affect its performance [4]. Financial crises are more complicated and affect all decision makers both economically and socially. The crisis has exposed fundamental weaknesses in financial systems worldwide, demonstrated how interconnected and interdependent economies are [5]. In fact, developing economies are more vulnerable to the factors that lead to crises, such as: banks and private agents exposure to currency and maturity mismatch, disruption in international capital markets, banks panic [6, 1, 2]. Financial crises affect also private agents’ behaviour, increasing uncertainty about future gains and decreasing the level of investment, consumption and export compositions [1].

For less developed countries and emerging markets, economic crisis is one of the most fundamental problems for the last 10-15 years, such as Turkey [7]. Since liberalization of the 1980s were not followed by necessary legal and institutional reforms, the countries became vulnerable to various crises through a series of short-term cycles of instability-crisis-(unsustained) growth- instability throughout the 1990’s, [8, 9, 10, 11]. In mid-February 2001, Turkey experienced one of the worst economic crises in its recent history and as a result, experienced a substantial fall in its Gross National Product from US$201.4 billion in 2000 to $148 billion in 2001 and the result was a huge cost on the Turkish economy in terms of lost monetary credibility, significant balance sheet deterioration and more importantly a very deep contraction. The daily average overnight interest rates shot up to (simple annual) 2000 percent on February 16, 20, and 4000 percent on February 21.8. The government could not resist and dropped its exchange rate controls early February 22 and the TRL/USD exchange rate went up 40% in one week. Monthly inflation was 10% and 14% in March and April of 2001 respectively [12, 13, 14]. Following the series of boom and busts between the late 1980s and the early 2000s, Turkey enjoyed strong and uninterrupted expansion until the 2007-2008 crisis started off in August 2007 [15]. Global financial crisis as a subprime mortgage crisis primarily concentrated in the United States but quickly metamorphosed into a global financial crisis where financial institutions teeter on the edge of bankruptcy in many countries [16]. Countries around the globe witnessed major declines in output, employment, and trade. GDP in industrial countries fell by 4.5 percent in 2008, and average real GDP growth in emerging economies dropped from 8.8 percent in 2007 to 0.4 at the beginning of 2009. The unemployment rate rose to 9 percent across OECD economies, and reached double digits in a mix of industrial and developing nations. World trade volume plummeted by more than 40 percent in the second half of 2008, collapsing at a rate that outpaced the fall of aggregate output [8]. This first global financial crisis of the twenty first century has made negative impacts on the economic and financial indicators of not only many developed and developing countries but also Turkey. In the scope of the stimulus packages introduced in Turkey to mitigate the effects of the crisis, subsidies and tax cuts have been offered for the companies and consumers [17, 18].
During a crisis, survival of the whole organization is in jeopardy. It imposes severe strain on the organization’s financial, physical, and emotional structures. Managers, when asked to define crises, suggest that they are composed of five dimensions: high magnitude, require immediate attention, an element of surprise, the need for taking action, and are outside the organization’s control [19]. Fewer purchases are made; purchases of selected products, especially luxuries, are postponed; price becomes a more critical consideration in decision-making; and purchases are driven more by specific benefits sought. Psychologically and financially, crisis-hit consumers behave differently from those enjoying economic prosperity [20]. Many strategies are suggested by researchers to survive the companies during the crises. To increase the marketing expenditures is one of the suggested ways. Especially, during and after recession period, the researches has been shown that those increasing or focusing marketing activities will increase sales, income and market share of companies [21,22]. In Turkey, companies felt obliged to apply necessary changes through the goals they’ve mostly taken into consideration as a result of being influenced by crisis. Among these, the most important ones has become; improving new marketing techniques, decreasing general expenses, economy and downsizing, performing quality control increasing productivity, improving new processes and healing them [23] According to a study based on the PIMS database, companies with bold strategies to invest aggressively in marketing, innovation and customer quality will thrive during the market upturn [24]. Furthermore, businesses that increased their marketing budgets during a recession gained market share more quickly as those that had cut them [21,25]. Marketing activities in the core business are clearly the major determinant of profitability in both good times and bad. A “market orientation” aids profitability. The return to marketing activities decreases during a contraction [26].
Companies simultaneously increase their marketing and R&D spending report the greatest growth in revenues and in net income and the greatest stock price drift, whereas companies cutting their spending in these areas report the lowest growth and the lowest drift [27]. Investors view R&D expenditures as investments that are expected to produce future benefits [28]. Studies have shown that a company that invests in R&D at a level greater than its competition can be expected to experience greater long-term sales growth [29, 30, 31]. Manufacturing companies benefit most from investment in R&D [32].

3. Methodology

In this study, the effects of marketing expenditures on company sales during the crisis periods are examined. Companies from Istanbul Stock Exchange are selected and the data of the companies are obtained from their annual financial reports and The Istanbul Stock Exchange database. The study covered the analyses for two important crisis periods (i.e. 2001 and 2008 crises) which had serious effects on Turkish economy in the last two decades. Data of fundamental financial indicators (i.e. sales revenues, research and development and sales expenditures) are analyzed via correlation and regression analysis. Also macroeconomic and other economic data and indicators (i.e. inflation, currency rates, and growth rate of Turkey) for the related periods were taken into account. Net sales are the dependent, research and development and sales expenditures, inflation, currency rates, and growth rate of Turkey are the independent variables in the models. US Dollar is taken as the currency rate and the values taken are based on 1995=100 as dollar, because of sensitivity of Turkish economy to dollar currency.

Production in the food and beverage sector reached TRY 8,852 million in 2009, which constitutes 18-20 percent of the country’s production as a whole. It is largely dependent on the agricultural sector in Turkey. A wide range of crops grow in Turkey helped by the generally benign climate. Significant sub-sectors within the Turkish food and beverage industry include meat and meat products, baked products, dairy products, fruits and vegetables, oils, confectionery, alcoholic and non-alcoholic drinks, soft drinks, ready-made food and baby food [33].

4. Findings

Companies are selected from food sector which offer products to final consumers. In order to determine the econometric model (fixed or random) hausman test was implemented and depending on the results of the test fixed model was chosen. For this purpose, out of the companies in food sector 9 companies with available data between 1997-2010 are chosen i.e. Banvit Inc., Kerevitas Food Industry and Trade Inc., Konfrut Food Industry and Trade Inc., Kristal Cola and Beverage Industry Trade Inc., Merko Food Industry, Penguen Food Inc., Pınar Mineral Water Inc. Co., Pınar Milk Inc. Co., Tukas Food Industry and Trade Inc., are analysed and cross sectional data are analyzed by using fixed effect panel data analysis for 1997-2010. Panel data analysis is a method of studying a particular subject within multiple sites, periodically observed over a defined time frame. Within the social sciences, panel analysis enables researchers to undertake longitudinal analyses in a wide variety of fields [34].The data of R&D expenditures since 1997 was available and continuous for only four companies i.e. Banvit Inc., Tukas Food Industry and Trade Inc., Kristal Cola and Beverage Industry Trade Inc. and Pınar Milk Inc. Co.

Graph 3. Marketing, Net Sales and R&D Expenditures of Four Companies
The effects of marketing expenditures on company sales during the crisis periods are examined and presented by E-views 5.0 statistical packages. The main constraints are the lack of long term data about the companies the unavailability of publicly shared data for a R&D number of companies and sectors. All the macroeconomic data are in percent values, so logarithmic values were used for financial indicators to find the efficient model. The abbreviations in the models were as;

\[ C = \text{constant} \]
\[ \text{NS} = \text{Net sales} \]
\[ \text{R&D} = \text{R&D Expenditures} \]
\[ \text{ME} = \text{Marketing Expenditures} \]
\[ \text{Inf} = \text{Inflation rate} \]
\[ \text{GROWTH} = \text{Growth rate of Turkey (to follow the effect of crisis)} \]
\[ \text{USD} = \text{Currency rate of dollar} \]

\textit{Model 1.}
Model 1 was constructed by using the data 1997-2010 to understand the effects of variables on net sales. To control the autocorrelation of model, DW value is 1.35 and it is an inconclusive, also R-squared is 0, 99 so we can accept that the model is fit. But the coefficients of the R&D has a problem, t value of R&D is higher than 0.05 so the coefficient of R&D is not significant. This is why the companies which analyzed in study have not R&D expenditures or only four of them have continuous R&D expenditures. However, marketing expenditures in model 1 are supported the previous researches about the effect on net sales [21,22]. The regression indicates that the 1% of increase in marketing expenditure affects the net sales nearly 0, 42%. Increasing of dollar currency has positive effects on net sales because of export oriented companies. Nevertheless, the coefficient of inflation rate is negative and this means any increasing in inflation can decrease the net sales as a result of consumer behavior related to saving. In literature, many studies noticed that the expected rate of inflation consistently show a negative impact on consumer spending [20,35]. Usually, growth rate of country has a positive relation [20]. With the sales of companies; on the contrary, in model 1 affects of growth rate on net sales is negatively.

Model 2.

\[
\text{LOG(NS)} = 1.165357 – 0.008 \text{LOG(R&D)} + 1.14 \text{LOG(ME)} + 0.01 \text{INF} -0.01 \text{GROWTH} - 0.01 \text{USD}
\]

<table>
<thead>
<tr>
<th>T statistic</th>
<th>P-value</th>
<th>R-squared= 0.99</th>
<th>DW stat= 1.16</th>
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<td>(0.89)</td>
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<td>(0.23)</td>
<td>(0.82)</td>
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<td>(9.90)</td>
<td>(0.00)</td>
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<td>(3.05)</td>
<td>(0.01)</td>
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<tr>
<td>(2.99)</td>
<td>(0.01)</td>
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<tr>
<td>(-3.58)</td>
<td>(0.00)</td>
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Model 2 is constructed by using the data 1997–2002 to understand the effects of variables on net sales during the 2001 crisis. To examine the autocorrelation of model, DW value is 1.16 but for N= 16; k=5 DW value is an inconclusive, also R-squared is 0, 99 so we can accept that the model is fit. Coefficient of R&D expenditure is not significant as Model 1, also constant’ coefficient is not significant. R&D expenditures for analyzed companies were not suitable for the model since the companies did not have stable data for R&D expenditures and many companies started and/or increased their R&D expenditures in the last decade. Marketing expenditure has an effect on net sales as model 1 but coefficient ME in Model 2 is higher than the coefficient ME of Model 2. As it seen in regression Model 2, marketing expenditure has greater effect on net sales during the crisis [21,25]. On the other side, changes in foreign currency have negative impact on net sales between 1997-2002 periods.

Model 3.

\[
\text{LOG(NS)} = 10.79072 + 0.1215 \text{LOG(R&D)} + 0.32 \text{LOG(ME)} + 0.002 \text{INF} -0.08 \text{GROWTH} + 0.007 \text{USD}
\]

<table>
<thead>
<tr>
<th>T statistic</th>
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<td>(6.86)</td>
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<td>(2.43)</td>
<td>(0.02)</td>
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<td>(5.4)</td>
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<tr>
<td>(0.23)</td>
<td>(0.81)</td>
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<tr>
<td>(1.42)</td>
<td>(0.16)</td>
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<tr>
<td>(3.12)</td>
<td>(0.00)</td>
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In Model 3, the data between 2003-2010 are used to evaluate the post-crisis developments and measure the period before and after the world financial crisis of 2007-2008 as well as aiming to minimize the effects of budget consolidation due to changes in regulations. The high R-squared value presents the
fitness of the model and 1.24 value of durbin-watson keeps the autocorrelation prediction as an inconclusive.

Within this context when model 3 is examined, growth rate and inflation are found as meaningful and fit to the model. 2003-2010 period highlights the importance and the increase of the R&D expenditures [27]. The R&D expenditures which seemed as meaningless and/or ineffective appears as an important and effective variable on sales as presented by the studies in the literature [29, 30, 31]. Marketing expenditures also acts as one of the major actors on company sales. US dollar also seems to have effects on net sales. The currency rates affected the export sales and thus the total sales positively.

**Model 4.**

\[
\text{LOG(NS)} = 6.7537 + 0.274 \text{LOG(R&D)} + 0.44 \text{LOG(ME)} + 0.007 \text{INF} - 0.007 \text{GROWTH} + 0.008 \text{USD}
\]

<table>
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<th>T statistic</th>
<th>P-value</th>
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<th>DW stat</th>
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<tr>
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<td>(0.00)</td>
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<tr>
<td>(5.35)</td>
<td>(0.00)</td>
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<td></td>
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<tr>
<td>(0.69)</td>
<td>(0.49)</td>
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<tr>
<td>(-1.07)</td>
<td>(0.29)</td>
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<tr>
<td>(3.47)</td>
<td>(0.00)</td>
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</tbody>
</table>

In the study since autocorrelation was found in the periods 1997-2010, 1997-2002 when the companies with regular R&D expenditures the analyses related with these periods and companies are not presented here. However in the model constructed to examine the 2003-2010 period, DW value is 1.54 and it is an inconclusive, also R-squared is 0.99 so we can accept that the model is fit. In model 4, findings note the important effect of R&D expenditures on sales. Research and developments and marketing expenditures have great positive effect on net sales in model 4, too. In model 4, inflation and growth rate can be seen as ineffective however, similar to Model 3, R&D expenditures, marketing expenditures and currency rate appears as explaining variables of the model.

4. Results and Suggestions

The analyses notice the importance of marketing expenditures on sales in Turkey like the other countries. Especially during the crises periods and after, marketing expenditures are found as having significant effects on sales. Besides the effects of marketing expenditures, R&D expenditures, despite being a relatively new but important concept for the many Turkish companies, have noteworthy effects. Parallel findings with the previous studies are found about the positive effects of the R&D expenditures. Macro data, on the other hand, seem to reveal inconsistencies in the models.

The companies, giving importance to marketing expenditures and even increasing them during the crises periods may not only achieve the opportunity to overcome the difficulties but also gain competitive power. Increasing the R&D budget, in spite of all the financial limitations imposed by a crisis, has an important impact on performance [21]. Cutting marketing expenditure could result in massive long-term damage to sales. R&D expenditures in recession, both in absolute terms and relative competition pay off handsomely. R&D expenditures is such a particularly “good cost” during recession [24]. Expenditures for R&D activities for new technology and product development and/or improvement may increase the competitive strength of the companies.

The obvious fact is that a well planned general marketing strategy supported by research and development activities, focusing on product development and/or product improvement, is effective in increasing company sales. Thus, to survive, stay competitive and even be successful during an economic crisis, strategy and decision makers should focus on well planned strategies, as well as monitoring the changes in the external environment of the company presented by the findings of this study.
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