Journal of Business Economics and Management
www.jbem.vgtu.lt
2010, 11(1): 146–171

WOMEN FEEL MORE PESSIMISTIC THAN MEN: EMPIRICAL EVIDENCE FROM TURKISH CONSUMER CONFIDENCE INDEX

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Received 3 February 2009; accepted 20 January 2010

Abstract. The leading role that is attributable to economic indicators like consumer confidence has been well documented in the literature for many developed nations. Moreover, the relationship between high frequency financial market data has been a common research topic for world economies. However, there is hardly any study that attempts to search for the possible functional relationship between consumer confidence and financial market variables. This paper is a simple attempt to link these two brands of literature by focusing on the relationship between financial market variables and consumer confidence index before the global crisis has started. We have two distinctive points. First, we derive separate consumer confidence indices for men and women by employing micro-level consumer confidence data from an emerging market (Turkish CNBC-e consumer confidence index) for the period of January 2003 – January 2008. Second, employing this data set, we do not only check for the existence of a relationship between consumer confidence and financial market variables (such as interest rates, exchange rates and stock exchange index) but also focus on the possibility of gender response. We find evidence of gender response difference as throughout the period women are more pessimistic than men-due probably to lower levels of wealth-and respond less to changes in exchange rates than men-due probably to lower purchasing power.

Keywords: consumer confidence; emerging market; financial market variables; gender response; co-integration.

Reference to this paper should be made as follows: Küçükaslan, A.; Çelik, S. 2010. Women feel more pessimistic than men: empirical evidence from Turkish consumer confidence index, *Journal of Business Economics and Management* 11(1): 146–171.

[1] Corresponding Author. An earlier version of this paper has been presented at the Annual Conference of the International Association for Feminist Economics held in Boston, MA, USA on 26–28 June, 2009.

[2] The authors would like to acknowledge research grant provided by Marmara University Scientific Research Projects Unit under SOS-D-300409-0129.

1. Introduction

Consumer confidence surveys try to extract information from responding agents on past, present and future economic conditions through categorical questions. In this respect, these indices have been one of the most widely used leading indicators of economic growth in many developed countries. Among them, the oldest one is University of Michigan Consumer Confidence Index which has been released regularly in the USA for the last sixty years. Recently, many emerging countries also realized the importance of leading economic indicators and have started the calculation and public announcement of such indices. In addition, the recent global financial crisis has underlined the leading role that is an inherent characteristic of economic indicators like consumer confidence. In many economies with different levels of development the responses of consumer confidence survey participants on economic outlook has been remarkably similar. This trend was even observable before the start of the global financial crisis in the post-2001 era.

On the other hand, the response of (especially emerging) financial markets to the ongoing crisis have also brought forward the need to examine the information content of financial market variables. In this mindset, one can argue that it has also become interesting to assess whether consumer confidence and financial market variables follow similar patterns during this shaky global environment.

However, this nicely built theoretical structure with the power of its elegant methodological tools has relied on conventional economic analysis lacking a fundamental part of natural order: the gender effect[3]. This paper is a simple attempt to bridge these two strands of literature by adding the possibility of a gender effect. Hence, we analyze the relationship between financial market variables and consumer confidence index not only by checking for the existence of a relationship but also focusing on the possibility of gender response difference. Our originality is furnished by using an emerging market, namely Turkey, in our empirical analysis. We focus on the period before the crisis started as we would like to observe whether there is any sort of relationship in a booming world economy.

The second section will include a short survey of the literature that serves as our motivation. In section three, we briefly describe the methodology and criteria for the Turkish consumer confidence index, namely the CNBC-e consumer confidence index. In section four, the methodology of our study will be introduced and the results of our empirical analysis will be presented. In conclusion, there will be a short assessment of our results and a few thoughts in this rather infant area which is a combination of psychological economics, financial economics, applied economics and feminist economics.

2. Literature Survey

The literature on consumer sentiment dates back to 1960s (Katona 1960, 1968). The main concern of many studies has been to validate the leading indicator characteristics of consumer sentiment as well as strengthening the link between expectations and

[3] In a recent paper, Güneş and Çelik (2009) consider the relationship between consumer confidence and financial market variables.

related economic variables like consumer expenditures and economic growth. Following Katona, we can cite Mishkin (1978), Throop (1991), Fuhrer (1993), Carroll *et al.* (1994), Nahuis (2000), Howrey (2001) and Ludvigson (2004) as some of the examples of this literature. The common finding of these studies is to show that there is some kind of a significant relationship between consumer confidence and consumption expenditures. Naturally, this finding is linked to economic growth through the important share of consumer expenditures in total output of an economy. Therefore, the theoretical framework builds on the idea that early understanding of trends in aggregate demand or business cycles provide valuable information both for policy makers and economic agents. Hence, consumer confidence has predictive ability (or extra information) for economic outlook. This proposition has been justified not only for developed countries but also for emerging markets at this stage of globalization.

However, some other studies have included different economic and financial variables in their analysis. For example, Huth *et al.* (1994) find that stock exchange indices of Dow Jones 30 and Standard and Poor's 500 and US consumer price index cause consumer confidence index. In a recent article, Jansen and Nahuis (2003) examine the relationship between stock exchange and consumer confidence for 11 European countries during 1986–2001. They obtain a strong positive correlation between stock returns and changes in consumer confidence and show that stock returns cause consumer confidence at very short horizons of 2 weeks to 1 month[4].

Besides these favorable studies, there are also some studies which have criticized the leading role that is attributed to consumer confidence index. Among others, Souleles (2001) offers an alternative analysis for testing the rationality of consumer expectations and evaluating their usefulness in forecasting expenditures by micro-level data. His results show that expectations seem to be biased as forecast errors by individuals do not average out even over a sample period of 20 years. Dominitz and Manski (2004) are critical about the methodology of confidence indices and propose addition of more specific questions. They believe that ordinary people cannot correctly predict the general economic conditions. Hence, survey respondents cannot provide any extra information. Likewise, Van Oest and Franses (2008) offer an alternative view for the interpretation of movements in consumer confidence and propose an applicable methodology when assessing the information content of consumer confidence.

On the other hand, there is a vast literature analyzing the relationship between probably the most widely used three variables in economic analysis, namely interest rates, stock exchange and exchange rates. The theoretical foundations for these studies can be classified in three categories as the goods market approach (flow oriented models), portfolio balance approach (stock oriented models) and omitted variable bias.

The goods market approach builds on the proposition that exchange rate changes affect the international competitiveness of an open economy and thus the profitability of its firms (Dornbusch and Fischer 1980). Therefore, exchange rate fluctuations could affect

[4] Jarrett and Schilling (2008) show that it is possible to predict changes in the returns to a stratified random sample of German firms listed on the stock exchange of Frankfurt as they exhibit unit roots.

share prices as positive or negative depending on whether the firms are net exporters/importers, own foreign subsidiaries and hedge against exchange rate fluctuations. The portfolio balance approach argues that rising stock market[5] would mean more capital inflows leading to increases in the demand for and appreciation of the home currency (Dornbusch 1975 and Frenkel 1976). Moreover, relatively higher interest rates could attract foreign capital and depress share prices. Finally, the omitted variable bias argument advocates the need to consider share prices, exchange rates and interest rates together to prevent variable misspecification due to complex interactions between financial markets due to financial globalization (Phylaktis and Ravazzolo 2005).

There are many studies which empirically analyze the bilateral relationship between the three variables. Some examples of the exchange rates-interest rates relationship include Campbell and Clarida (1987), Rogoff and Meese (1988) and MacDonald and Nagayasu (2000). Some of the studies which consider the relationship between exchange rates and stock exchange are Solnik (1987), Muhammad and Rasheed (2003) and Stavarek (2004). Among others, some of the articles which examine interest rates and stock exchange relationship are Thornton (1993) and Bernanke and Kuttner (2005). The relationship between the three variables has been investigated recently by studies like Kim (2003), Obben *et al.* (2006) and Çelik and Deniz (2008).

The final brand of literature that has motivated our study depends on one of the main themes of feminist economics: the gender response difference[6]. There have been a variety of studies questioning the importance of gender differences on several questions of interest. Among many others, one of these is the analysis of optimism vs. pessimism between genders using different instrumental scales (Dember *et al.* 1989 and Scheier *et al.* 2001). Another important concept covered by many studies focused on the possibility of gender difference in health related issues employing alternative data sets (Schraedley *et al.* 1999; Goldstein 2006). Furthermore, some articles have gone as far as examining the importance of gender difference in investing (Powell and Ansic 1997; Schubert *et al.* 1999; Charness and Gneezy 2007). However, except a few, studies in this literature have used cross section data sets ignoring the dynamic aspect of expectations. Moreover, there are hardly any studies which relate psychological aspects of decision making with economic variables on a gender based analysis.

In this mindset, the question of whether there is any difference between genders in terms of their responses to consumer confidence questions becomes our main point of interest. As consumer confidence surveys try to retrieve information content that is vital for economic outlook from economic agents, they serve several purposes by categorizing respondents in gender, age, location and other characteristics. Optimism is measured through a base scale (Usually 100) and it is easier to measure whether a gender is more optimistic or pessimistic than the other. Moreover, consumer confidence surveys pos-

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[5] Girdzijauskas *et al.* (2009) argue that rising stock market could lead to bubbles that are related to inflation and therefore the factors causing inflation could also be the same factors that cause bubbles.

[6] Dagytė (2008) shows the existence of main management problems in gender relations using the experience of the Lithuanian women scientists within the period of 1990–2005.

sess a time dimension as they are carried overtime in a certain interval. Differences in gender responses in different intervals could signal changes in patterns of behavior among genders.

For our purposes, previous studies somehow show the relation between consumer confidence, domestic demand and different variables of interest. Consumer confidence as measured by any index is an early announced and relatively inexpensive measure that operates as a proxy for consumer spending. However, it is vital to assess the specific characteristics of consumer sentiment by employing micro-level consumer survey data. This could probably help us to answer questions like whether there is a gender difference in terms of optimism/pessimism depending on economic and financial variables of interest over a certain period of time. The results will only be enhanced if this analysis uses an emerging market, namely Turkey, as our study does.

3. Consumer Confidence Indices in Turkey

In Turkey, there are two well-known consumer confidence indices that are announced on a monthly basis. One is the CNBC-e Consumer Confidence Index and the other one is the CBRT-TURKSTAT Consumer Confidence Index (Turkish Statistical Institute 2008). For our purposes, we employ the CNBC-e consumer confidence index as the micro-level data has been provided by the survey announcer, the CNBC-e television channel.

The methodology for the CNBC-e consumer confidence index (CCI) has been adopted from the Michigan University index of consumer sentiment with necessary changes made for Turkish households[7]. The base period of CCI is set as January 2002 and the value of the index at this period is 100. The index has a point of scale ranging from 0 to 200. The sample used to collect survey data is chosen from a database maintained by the survey provider. The database contains records of 15,000,000 individuals. The index is compiled of 704 completed surveys. The survey data is obtained from the respondents between the 27th day of the previous month and the 26th day of the current month. The distribution of the completed surveys meets seven criteria as:

1) 70 percent is selected from Istanbul, Ankara and Izmir, 30 percent selected from other cities and big districts in Turkey.
2) 60 percent is selected from 36–55 age group, 40 percent 18-35 age group.
3) 50 percent is male and 50 percent is female.
4) 50 percent of the total surveys are composed of new records.
5) A minimum of 30 percent of new records belongs to individuals who had been successfully surveyed in the previous month.
6) A maximum 20 percent of 704 completed surveys may be composed of additional respondents and these respondents are not called again in the next month.

[7] Consumer confidence in the Unites States has been measured nationally by two sources. The University of Michigan produces an index of consumer sentiment based on a telephone survey of 500 households. This survey has been conducted since the 1940s and became a monthly survey in 1978. The other, provided by the Conference Board, is a consumer confidence index that started in 1967 and became monthly in 1977. The Conference Board's index is based on a mail-out survey where approximately 2,500 responses are tabulated as they come in for a given month.

7) Last and one of the most important criteria is that respondents are not surveyed more than two times. This helps to minimize the biases in the answers of survey respondents.

The index is composed of the questions below:

1) We would like to learn your current economic situation. Can you compare your (and your family's) current financial situation with last year?

   Answer Choices: Better Worse Same No Idea

2) What do you think your (and your family's) future financial situation will be in a year?

   Answer Choices: Better Worse Same No Idea

3) Can you compare your current expectations about Turkish economy with the previous month?

   Answer Choices: Better Worse Same No Idea

4) What do you think Turkish economy's situation will be in a year?

   Answer Choices: Better Worse Same No Idea

5) Do you think that the current period is a good time to buy durable consumer goods such as a TV set, a refrigerator and furniture or vehicles or residence?

   Answer Choices: Good Time Bad Time No Idea

After the answers for all the surveys are compiled, CCI is calculated according to following formula:

$$\text{Index Value} = (\text{Current period value} / \text{Base period value}) * 100. \quad (1)$$

Current period's value for each question is being calculated as =
((Number of optimistic answers for the question –
Number of pessimistic answers for the question) / 704)*100) + 100. (2)

The current period values of each question are summed up to obtain current period's value for the overall CCI. The index values for each question are announced by CNBC-e as well as the announcement of sub-indices of consumer expectations index (which includes questions 2 and 4) and propensity to consumer index (which is made up of only question 5).

4. Methodology of the Study

This section is composed of two parts. In the first part, there is a short summary which explains the methodology of the analysis. In the second part, we present our empirical findings with short interpretations.

4.1. Unit Roots, Cointegration and Vector Error Correction Model (VECM)

The first part includes a brief summary of the three important empirical tools that are used for our analysis. As this is one of the first attempts to bridge the gap between different parts of economic analysis, we restrict ourselves to minimum requirements for the sake of simplicity.

4.1.1. Unit Roots

Since it became a necessity for economic theory to have the support of empirical findings, there have been remarkable developments in the area of econometrics. But none had the impact of unit root tests and the following literature. It is well known that the need to test the existence of unit roots depends on the inherent characteristics of economic variables. Real world data shows that it is a matter of time whether an economic variable reverts back to some long-run mean following a shock or exhibits random walk behavior. Hence, a random walk process without drift is written as

$$x_t = x_{t-1} + u_t , \tag{3}$$

with $E(u_t) = 0$, $E(u_t u_s) = 0$ for, $t \neq s$ and $E(u_t u_s) = \sigma^2$ for $t = s$. Therefore, a random walk is a special case of the autoregressive process (AR), $x_t = \alpha_0 + \alpha_1 x_{t-1} + u_t$, where $\alpha_0 = 0$ and $\alpha_1 = 1$. A time series with no deterministic component which has a stationary, invertible, autoregressive moving average (ARMA) representation after differencing d times is said to be integrated of order d, denoted $x_t \sim \mathrm{I}(\mathrm{d})$. Thus, for $d = 0$, x_t will be stationary (and x_t has no unit root) and for $d = 1$, the change in x_t is stationary (and x_t has a unit root).

The common procedure in economics is to test for the presence of a unit root to detect non-stationary behavior in a time series. There are several unit root tests like the Dickey-Fuller test (ADF) (Dickey and Fuller 1979, 1981; Said and Dickey 1984), and the Kwiatkowski *et al.* (1992) test (KPSS). This study uses both ADF and KPSS tests so that there is no a priori belief on the behavior of the time series.

4.1.2. Cointegration

Granger (1981) has laid the foundations for the concept of cointegration and the theoretical part was more fully developed in Engle and Granger (1987). The cointegration of two variables is at least a necessary condition for them to have a stable long-run (linear) relationship. Johansen (1988) and Johansen and Juselius (1990) proposed a procedure for estimating cointegrating relationships in a system of equations framework. This method allows for the testing of more than one cointegrating vector in the data and for the calculation of maximum-likelihood estimates of these vectors. The Johansen-Juselius (JJ) methodology employs a statistical model of the following form:

$$\Delta X_t = \Gamma_1 \Delta X_{t-1} + ... + \Gamma_{k-1} \Delta X_{t-k+1} + \Pi X_{t-k} + \mu + \Psi D_t + \varepsilon_t , \tag{4}$$

where $\Gamma_i = -(I - \Pi_1 - ... - \Pi_i)$ and $\Pi = -(I - \Pi_1 - ... - \Pi_k)$.

The JJ technique decomposes the matrix $\Pi(pxp)$ to find information about the long-run relationships between the variables in X_t. In particular, if Π has a rank of r where $0 < r < p$, then we can show that $\Pi = \alpha\beta'$ where β' is an (*rxp*) matrix of r cointegrating vectors (so that the r linear combinations, $\beta_i' X_t$, are stationary) and α is $a(pxr)$ matrix of adjustment speeds. Thus, the hypothesis of at most r cointegrating vectors is formulated as the restriction $H_0 : \Pi = \alpha\beta'$ where $\mathrm{rank}(\Pi) = r$. Equation (4) can be simplified as

$$Z_{0t} = \Phi Z_{1t} + \prod Z_{kt} + \varepsilon_t \,, \tag{5}$$

where $Z_{0t} = \Delta X_t$, Z_{1t} denotes the stacked variables ΔX_{t-1} ,….., ΔX_{t-k+1}, D_t and 1, $Z_{kt} = X_{t-k}$, and Φ is the matrix of parameters corresponding to Z_{1t}. JJ define several product moment matrices as

$$\underset{t=1}{\overset{T}{M}} = T^{-1} \sum Z_{it} Z_{jt} \text{ with } i, j = 0,1,k \,. \tag{6}$$

These matrices are combined to form

$$S_{ij} = M_{ij} - M_{i1} M_{11}^{-1} - M_{ij} \text{ with } i, j = 0,....,k \,. \tag{7}$$

Under the null hypothesis of $H_0 : \Pi = \alpha\beta'$, the maximum likelihood estimator of β is the set of eigenvectors associated with the eigenvalues (λ) solved from the following equation:

$$\left| \lambda S_{kk} - S_{k0} S_{00}^{-1} S_{0k} \right| = 0 \,. \tag{8}$$

To determine the value of r, Johansen (1988) constructed two likelihood ratio (LR) statistics. One statistic is called the maximal eigenvalue test $(\lambda - \max)$ and compares the null of $H_0(r)$ with an alternative of $H_1(r+1)$. It is calculated as

$$\underset{\wedge}{\lambda - \max}(r) = -T \ln\left(1 + \hat{\lambda}_{r+1}\right), \tag{9}$$

where λ_{r+1} is the $(r+1)$ largest estimated eigenvalue. The second statistic, i.e., trace statistic, tests a sequence of null hypotheses $r = 0$, $r \le 1,...,r \le p-1$, and is calculated as

$$\underset{\wedge}{\text{Trace}}(r) = -T \sum_{i=r+1}^{p} \left(1 - \hat{\lambda}_i\right), \tag{10}$$

where λ_i are the $(p-r-1)$ smallest estimated eigenvalues and p is the number of variables. We use only the trace test in our empirical analysis as it has powerful properties compared to the maximal eigenvalue test.

4.1.3. VECM

As Granger (1981) and Engle and Granger (1987) demonstrate, the existence of cointegration removes the possibility of the estimated regression being spurious due to problems such as omitted variable bias, autocorrelation and endogeneity. The direction of causality among the cointegrated variables could be solved by using the vector error correction models.

The VECM augments a vector autoregressive process in first differences of the variables with their cointegrating relationship. In this sense, it has several attractive characteristics. First, the structure of the VECM explicitly designates a role for the difference between the consumer confidence and financial market variables used in this study. Ceteris paribus, if the error-correction term equaled zero, there would be no need for either consumer confidence or any financial market variable(s) to adjust from its (their) current level(s). Second, the estimation of the error-correction term leads to a direct examination into the behavior of the gap between consumer confidence and financial market variables over the data span. Finally, it is possible to examine the sign and

magnitude of the error correction coefficients and analyze the characteristics of the adjustment process by which long-run equilibrium between the series is restored. This means that VECM helps us to understand the dynamics of the short run relationship between the variables of interest.

We can write a typical four-variable VECM for the consumer confidence index (*CCI*), stock exchange index (*SE*), exchange rate variable (*EXC*), and interest rate variable (*INT*) as follows:

$$\Delta CCI_t = \alpha_1 + \sum^{j} \beta_1(i)\Delta CCI_{t-i} + \sum^{j} \delta_1(i)\Delta SE_{t-i} + \sum^{j} \zeta_1(i)\Delta INT_{t-i} + \sum^{j} \theta_1(i)\Delta EXC^a_{t-i} + \lambda_1 ECT_{t-1} + \varepsilon_{1t}; \quad (11)$$

$$\Delta SE_t = \alpha_2 + \sum^{k} \beta_2(i)\Delta CCI_{t-i} + \sum^{k} \delta_2(i)\Delta SE_{t-i} + \sum^{k} \zeta_2(i)\Delta INT_{t-i} + \sum^{k} \theta_2(i)\Delta EXC^a_{t-i} + \lambda_2 ECT_{t-1} + \varepsilon_{2t}; \quad (12)$$

$$\Delta EXC^a_t = \alpha_3 + \sum^{l} \beta_3(i)\Delta CCI_{t-i} + \sum^{l} \delta_3(i)\Delta SE_{t-i} + \sum^{l} \zeta_3(i)\Delta INT_{t-i} + \sum^{l} \theta_3(i)\Delta EXC^a_{t-i} + \lambda_3 ECT_{t-1} + \varepsilon_{3t}; \quad (13)$$

$$\Delta INT_t = \alpha_4 + \sum^{m} \beta_4(i)\Delta CCI_{t-i} + \sum^{m} \delta_4(i)\Delta SE_{t-i} + \sum^{m} \zeta_4(i)\Delta INT_{t-i} + \sum^{m} \theta_4(i)\Delta EXC^a_{t-i} + \lambda_4 ECT_{t-1} + \varepsilon_{4t}, \quad (14)$$

where Δ shows the first-difference operator, *ECT* denotes the error correction term, the terms j, k, l and m stand for the lag lengths determined according to the Akaike Information Criteria, and a is for alternative specifications of the variable. The coefficients of ECT_{t-1}, λ_1, λ_2, λ_3, and, λ_4 show the adjustments of ΔCCI_t, ΔSE_t, ΔEXC_t, and ΔINT_t towards long-run equilibrium.

4.2. Empirical Findings

The empirical analysis starts with the conventional unit root tests, followed by cointegration analysis and the normalized coefficient estimates from cointegration, and finally the VECM analysis.

The study employs a four-variable setup while searching for the long-run relationship between consumer confidence, stock exchange index, exchange rate and interest rate. The consumer confidence variable (CCI) is the CNBC-e consumer confidence index, for the stock exchange index, we use the Istanbul Stock Exchange 100 Index (ISE100). There are two alternative variables employed for the exchange rate as the average of (1 $ + 1 €) exchange rate (BASKET), and only the dollar exchange rate (DOLLAR). Finally, the interest rate variable is the simple annual interest rate (INTSIM) for the bond/bill with the highest volume in the bond market for the corresponding period. The data span is 1st January 2003 – 23rd January 2008[8]. All variables except INTSIM are in their natural logarithms.

[8] The original computerized daily data for CCI starts in July 2002. However, there is a highly volatile economic and political environment in Turkey during July–December 2002. Hence, we prefer to start our empirical analysis at the beginning of the year 2003.

The CCI is calculated[9] using the data obtained from CNBC-e/NTV Consumer Confidence Index Survey Provider (NTVMSNBC 2008). A quick glance at the plot of CCI for men and CCI for women demonstrate that women are more pessimistic than men throughout the period of analysis. Figure 1 in Appendix shows that the pink line hardly stays over the blue line, clearly a sign of economic impotence for women in an emerging market where jobs are hard to get and female labor force participation goes down over time. ISE100 is obtained from ISE website (Istanbul Stock Exchange 2008), DOLLAR and EURO exchange rates are obtained from CBRT website (Central Bank of Republic of Turkey 2008) and INTSIM is obtained also by using the ISE website (Istanbul Stock Exchange 2008).

4.2.1. Unit Root Test Results

Table 1 in Appendix shows the ADF unit root tests for levels and differences including only an intercept and both an intercept and a trend. The results for all the variables in levels are similar as we are unable to reject the null of unit root at 5% significance level except for BASKET and INTSIM in case of a drift and CCI_WOMEN in case of a drift and a trend. Moreover, the results for all the variables in differences are identical as we reject the null of unit root at 5% significance level regardless of the case considered. On the other hand, the KPSS test results are in Table 2 in Appendix. The only variables in levels which seem stationary are BASKET in both cases of a constant and a constant and a trend and DOLLAR in case of a constant and a trend. This signals that we should be careful in dealing with BASKET in our equations as we get no unit root for 3 cases out of 4. Nevertheless, it appears that all our variables except the BASKET could be classified as non-stationary, having a unit root.

4.2.2. Cointegration Test Results

Once we detect the presence of unit root, we move on to check whether our I(1) series are cointegrated. The results of Johansen-Juselius trace cointegration test statistics are shown in Table 3 in Appendix for men and Table 4 in Appendix for women employing the cases of a constant and a constant and a trend. Different combinations of variables show the existence of a cointegrating vector for 7 cases when CCI for men is used and for 11 cases when CCI for women is used. Hence, we could argue that there is a long-run co-movement between the variables of interest, regardless of a gender difference.

Therefore, it becomes important to analyze the coefficient estimates of the cointegration relationship to derive inferences about the long-run relationship. The normalized cointegrating coefficients from Johansen-Juselius estimation are in Table 5 in Appendix for men and Table 6 in Appendix for women. Here, we deal with not only the significance

[9] The CCI values are calculated daily with reference to the starting base value of January 2002. The daily values for the starting days of the new survey for each month (Between 26th and the end of the previous month) is set equal to the announced value of the previous month so that a large number of survey responses will be gathered that can be used to calculate the new month's daily values when the new month actually starts on the 1st. The daily averages constitute the weekly data that we use. We also check for serial correlation and reject the null of serial correlation for all our series. The results are not reported here to save space and available from the authors upon request.

of the coefficient estimates but also their size and magnitude. We could summarize the results as follows:

a) The coefficient estimates for the stock exchange show drastic difference between men and women in Turkey[10]. Male CCI survey respondents end up with a positive and mostly significant coefficient for stock exchange index. This is in accordance with the theoretical framework that an increase in stock exchange leads to an increase in consumer sentiment due to expectations of future economic growth. However, the picture is reversed for female CCI respondents. We observe mostly insignificant and negative coefficients.

   During the period 2003–2007, the share of foreign investors in Istanbul Stock Exchange has increased significantly. It is rather interesting to observe that this development has affected the attitude of women rather than men. In this sense, the adverse reaction of private female households to a rise in the stock exchange index shows the sensitivity of women.

b) Considering the alternative definitions of the exchange rate, we observe negative and statistically significant coefficients for men. This is in line with our a priori expectations and leads us to believe that male households in Turkey lose confidence as the purchasing power declines. On the other hand, there is a mixed response from the female side. We obtain 4 positive and significant coefficients as well as 1 negative and significant coefficient. Nevertheless, the dominance of positive and significant coefficients depicts the lower levels of wealth in terms of domestic currency for Turkish female households. Moreover, it is a clear sign for the lack of motivation to participate in labor force. The income and wealth level of female survey respondents hardly suffers when domestic purchasing power declines.

c) The last variable we include in our analysis is the interest rate and the empirical findings for men and women are rather surprisingly very similar. Moreover, the coefficients are all significant and positive in magnitude. This clearly is against the theoretical framework and leads us to believe that the interest rate measure used here is probably not the one that the households observe every day. However, given the high levels of correlation between all interest rates, it is reasonable to argue that survey respondents should have some sense of the prevailing interest rate in the market. Nonetheless, this is not the result for our study, probably due to lower levels of bond holding by households.

4.2.3. VECM Results

Table 7 and Table 8 in Appendix report the results from estimation of the VECM in equations 11, 12, 13, and 14 with the choice of lag length for the first differences of the series again determined using the AIC. The error-correction term is statistically significant in each equation for CCI and the coefficients for the error-correction term are of the opposite sign, supporting the adjustment process for each series. Specifically, a value of CCI above (below) its long-run equilibrium in one period will produce upward (downward) pressure on the variables in the subsequent period.

[10] Teresienė (2009) argues that investor's psychology acts as the factor that causes price volatility in stock markets.

5. Conclusion

Many studies have examined the relationship between consumer confidence indices and economic growth. They have focused on the forecasting ability of consumer confidence indices believing that it contains information content which most of the other variables lack. However, there has been no general consensus on whether consumer confidence indices can be used as congruent indicators of economic activity. The main flaw of this literature has been the improper micro-level analysis of the data set at hand.

This study is an attempt to enhance the consumer confidence literature by shifting the focus from the information content of consumer confidence to the criteria content of consumer confidence. Among others, the foremost criterion for any consumer confidence index is the equal number of respondents from the two genders. Hence, we choose to examine whether there is a gender difference in consumer confidence data. Moreover, this is done for an emerging economy, Turkey.

Turkey is a dynamic developing country, and we believe that it serves our purpose well as our empirical analysis demonstrates gender response difference. Over the recent period of 2003-2007, women feel more pessimistic than men in Turkey. This can be attributed to several reasons. First and foremost, women lack purchasing power and hence they can hardly make any decisions on the future of themselves (and their family). Second, women hardly hold any wealth which could be channeled into assets that will generate a prosperous future for them. Finally, women respond rather different than men to changes in financial market variables. This is related to low levels of foreign exchange and stock holdings by women.

Consequently, our study shows that there is a difference between the attitudes of women and men in Turkey. This is important as it emphasizes the lack of necessary precautions by authorities to bring women into the labor force. Any developing country should build its future sustainable growth pattern on a strong labor force which forms the middle class. Without women, this middle class can hardly survive rather than help the economy develop. Hence, this study shows that women should be given a major role in the development process of a nation. This role needs to be as important as the role of men. Otherwise, a developing country will continue to be a middle to low income country for a long period of time.

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MOTERŲ PESIMIZMAS DIDESNIS NEI VYRŲ: EMPIRINIS PAGRINDIMAS REMIANTIS TURKIJOS PIRKĖJŲ PASITIKĖJIMO INDEKSU

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Santrauka

Ekonominių rodiklių kaip pirkėjo pasitikėjimo vaidmens svarba yra išsamiai pagrįsta daugelio išsivysčiusių šalių literatūroje. Be to, ryšys tarp aukšto finansų rinkos svyravimo duomenų yra dažna tyrimų tema daugelyje pasaulio šalių. Tačiau vargu ar galima būtų rasti tyrimų, kuriuose būtų bandoma surasti funkcinį ryšį tarp pirkėjo pasitikėjimo ir finansų rinkų rodiklių. Šis straipsnis – tai mėginimas susieti šias dvi rūšis, orientuojantis į ryšį tarp finansų rinkų rodiklių ir pirkėjo pasitikėjimo indekso prieš prasidedant pasaulinei krizei. Šiame straipsnyje pabrėžti du išskirtiniai bruožai. Pirma, nustatomi atskiri moterų ir vyrų pasitikėjimo indeksai naudojantis 2003 m. sausio mėn. – 2008 m. sausio mėn. laikotarpio augančių rinkų mikrolygmens pirkėjo pasitikėjimo duomenimis (Turkų CNBC-e pirkėjo pasitikėjimo indeksas). Antra, naudojantis šia informacija tikrinamas ne tik esamas ryšys tarp pirkėjo pasitikėjimo ir finansų rinkų rodiklių (pavyzdžiui, palūkanų normos, valiutų kurso, akcijų biržos indekso). Buvo rasta akivaizdžių skirtumų tarp atsakymų, gautų iš skirtingų lyčių atstovų. Visą laikotarpį moterys buvo pesimistiškesnės nei vyrai, tikriausiai dėl žemo gerovės lygio. Jos mažiau reagavo į valiutų kurso pokyčius nei vyrai dėl mažesnės perkamosios galios.

Reikšminiai žodžiai: vartotojų pasitikėjimas, augančios rinkos, finansų rinkos rodikliai, lyčių atsakymai, kointegracija.

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APPENDIX

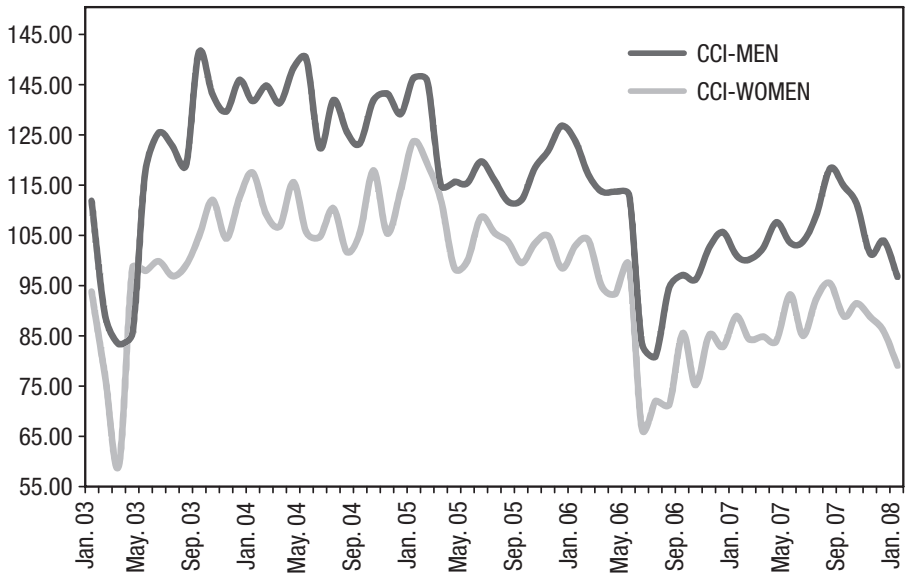

Fig. 1. CNBC-e Turkish consumer confidence index for women and men

Table 1. ADF unit root tests

ADF UNIT ROOT TESTS 08/01/2003 – 23/01/2008	Level with constant	Level with trend	Difference with constant	Difference with trend
VARIABLE	**ADF**	**ADF**	**ADF**	**ADF**
CCI_WOMEN	–2.4969	–3.6697*	–16.667**	------
CCI_MEN	–2.6550	–3.1287	–17.768**	–17.745**
ISE100	–1.6631	–1.4234	–8.1503**	–8.2243**
BASKET	–2.8884*	–2.9020	-----	–5.8775**
DOLLAR	–2.5057	–2.8323	–5.9027**	–5.8908**
INTSIM	–3.1746*	–2.2602	-----	–7.1117**

Notes: The critical values for the case with Constant are –3.455193 for 1% and –2.872370 for 5% significance levels and for the case with Trend are –3.993746 for 1% and –3.427203 for 5% significance levels. (*) denotes significance at 5% level and (**) denotes significance at 1 % level. The lag selection is done using the Modified HQ Information Criteria with the maximum lag length set to 8.

Table 2. KPSS unit root tests

KPSS UNIT ROOT TESTS 08/01/2003 – 23/01/2008	Level with constant	Level with trend	Difference with constant	Difference with trend
VARIABLE	**KPSS**	**KPSS**	**KPSS**	**KPSS**
CCI_WOMEN	0.8858**	0.2799*	0.0438	0.0261
CCI_MEN	0.7540**	0.1928*	0.0376	0.0220

End of Table 2

ISE100	2.0109**	0.3162*	0.2391	0.0397
BASKET	0.1647	0.0999	----	----
DOLLAR	0.7115*	0.1365	0.0688	----
INTSIM	1.2338**	0.3999**	0.5292*	0.0857

Notes: The critical values for the case with Constant are 0.739 for 1% and 0.463 5% significance levels, and for the case with Trend are 0.216 for 1% and 0.146 for 5% significance levels. (*) denotes significance at 5% level, and (**) denotes significance at 1% level. The KPSS test is computed using the Bartlett kernel to account for the potential correlation of the residuals with a bandwidth automatically selected using the Newey-West Bandwidth.

Table 3. Johansen-Juselius cointegration tests-MEN

PERIOD: 08/01/2003 – 23/01/2008		**Constant**	**Trend**
VARIABLES	**Null**	**Trace**	**Trace**
CCI_MEN **BASKET** **INTSIM**	r = 0 r ≤ 1 r ≤ 2	43.82674* 17.61441 5.495332 (k = 4)	47.46984* 21.20816 9.904916 (k = 4)
CCI_MEN **DOLLAR** **INTSIM**	r = 0 r ≤ 1 r ≤ 2	42.12201* 15.46622 3.110453 (k = 4)	47.04079* 21.53780 10.45515 (k = 4)
CCI_MEN **ISE100** **INTSIM**	r = 0 r ≤ 1 r ≤ 2	39.66143* 16.64905 6.318626 (k = 2)	
CCI_MEN **ISE100** **INTSIM** **DOLLAR**	r = 0 r ≤ 1 r ≤ 2 r ≤ 3	57.48590* 34.65324 19.46998 7.502043 (k = 2)	
CCI_MEN **ISE100** **INTSIM** **BASKET**	r = 0 r ≤ 1 r ≤ 2 r ≤ 3	54.15347* 31.34416 18.63268 7.409448 (k = 2)	

Notes: The 5% critical values for the Trace test with 3 variables are 35.19275, 20.26184, 9.164546 for the Constant case, and 42.91525, 25.87211, 12.51798 for the Trend case. The 5% critical values for the Trace test are with 4 variables are 54.07904, 35.19275, 20.26184, 9.164546 for the Constant case, and 63.87610, 42.91525, 25.87211, 12.51798 for the Trend case. (*) denotes significance at 5% level. k shows the lag length used in the estimation of the cointegration equation.

Table 4. Johansen-Juselius cointegration tests-WOMEN

PERIOD: 08/01/2003 – 23/01/2008		Constant	Trend
VARIABLES	**Null**	**Trace**	**Trace**
CCI_WOMEN	r = 0	42.18055*	59.16353*
INTSIM	r ≤ 1	19.95789	19.27082
BASKET	r ≤ 2	8.267627	7.268864
		(k = 4)	(k = 2)
CCI_WOMEN	r = 0	36.75201*	63.57303*
INTSIM	r ≤ 1	15.88778	19.06899
DOLLAR	r ≤ 2	4.501858	7.244298
		(k = 4)	(k = 2)
CCI_WOMEN	r = 0	38.34600*	45.02259*
ISE100	r ≤ 1	14.20158	16.12970
DOLLAR	r ≤ 2	4.576222	2.951213
		(k = 6)	(k = 4)
PERIOD: 08/01/2003 – 23/01/2008		**Constant**	**Trend**
VARIABLES	**Null**	**Trace**	**Trace**
CCI_WOMEN	r = 0	53.30167*	58.32170*
ISE100	r ≤ 1	17.46381	19.41004
INTSIM	r ≤ 2	8.148066	7.871585
		(k = 2)	(k = 2)
CCI-WOMEN	r = 0	70.86858*	75.07910*
ISE100	r ≤ 1	33.13444	34.13917
BASKET	r ≤ 2	19.08453	21.33875
INTSIM	r ≤ 3	7.500432	9.542042
		(k = 2)	(k = 2)
CCI-WOMEN	r = 0		81.77118*
ISE100	r ≤ 1		37.05647
DOLLAR	r ≤ 2		23.13989
INTSIM	r ≤ 3		11.07141
			(k = 2)

Notes: The 5% critical values for the Trace test with 3 variables are 35.19275, 20.26184, 9.164546 for the Constant case, and 42.91525, 25.87211, 12.51798 for the Trend case. The 5% critical values for the Trace test are with 4 variables are 54.07904, 35.19275, 20.26184, 9.164546 for the Constant case, and 63.87610, 42.91525, 25.87211, 12.51798 for the Trend case. (*) denotes significance at 5 % level. k shows the lag length used in the estimation of the cointegration equation.

Table 5. Normalized cointegrating coefficients from Johansen-Juselius estimation-MEN

PERIOD: 08/01/2003 – 23/01/2008			NORMALIZED VARIABLE: CCI-MEN	
ISE100	**BASKET**	**DOLLAR**	**INTSIM**	**TREND**
	–7.032780*		1.400414*	
	(2.37967)		(0.49862)	
	–2.559867*		1.234282*	0.001449*
	(1.18347)		(0.34004)	(0.00049)

End of Table 4

		–4.674550* (1.69339)	1.392227* (0.46010)	
		–1.895658 (1.06949)	1.181490* (0.34026)	0.001164* (0.00049)
0.642361 (0.19656)			1.432490* (0.36391)	
0.705719* (0.19721)		0.304797 (0.96956)	1.450265* (0.38426)	
0.608469* (0.21479)	–0.558120* (1.15171)		1.404319* (0.41977)	

Notes: The values in brackets under the coefficient estimates are the standard errors. (*) denotes significance at 5% level.

Table 6. Normalized cointegrating coefficients from Johansen-Juselius estimation-WOMEN

PERIOD: 08/01/2003 – 23/01/2008		**NORMALIZED VARIABLE: CCI-WOMEN**		
ISE100	**BASKET**	**DOLLAR**	**INTSIM**	**TREND**
	–10.56117* (4.07263)		3.204079* (0.85964)	
	1.212625* (0.58782)		1.098703* (0.17351)	0.001808* (0.00025)
		–4.236252 (2.30723)	2.232325* (0.63152)	
		1.697506* (0.47840)	0.996630* (0.15635)	0.002064* (0.00023)
–0.870516* (0.29727)		3.055017* (0.60973)		0.003924* (0.00084)
0.343699* (0.13123)		1.340928 (0.96263)		
0.789739* (0.13053)			1.689895* (0.24190)	
–0.142649 (0.42929)			1.265871* (0.28812)	0.002216* (0.00100)
0.789959* (0.11693)	1.197151 (0.62623)		1.525828* (0.22862)	
–0.016744 (0.38542)	1.116621 (0.60078)		1.190450* (0.26259)	0.001945* (0.00090)
–0.094918 (0.33967)		1.593921* (0.49020)	1.011497* (0.24315)	0.002311* (0.00079)

See Notes of Table 5 in Appendix.

Table 7. Vector error correction models – MEN

	Right–Hand–Side Variables								
Equation	**Coint. eq**	$\beta^{11}{}_1$	$\beta^{12}{}_1$	$\delta^{11}{}_1$	$\delta^{12}{}_1$	$\zeta^{11}{}_1$	$\zeta^{12}{}_1$	$\theta^{11}{}_1$	$\theta^{12}{}_1$
ΔCCI_t	–0.022559	–0.173735	–0.070877			–0.686793	–0.206769	−1.794766	−0.909469
$R^2 = 0.116295$	(0.01323)	(0.06291)	(0.06121)			(0.31419)	(0.31569)	(0.63133)	(0.64195)
	[–1.70554]	[–2.76179]	[–1.15794]			[–2.18593]	[−0.65498]	[−2.84281]	[−1.41674]
$\Delta INTSIM_t$	–0.006871	0.015902	–0.004504			–0.013002	0.071796	0.150984	0.072048
$R^2 = 0.051346$	(0.00286)	(0.01362)	(0.01326)			(0.06804)	(0.06837)	(0.13672)	(0.13902)
	[−2.39870]	[1.16725]	[–0.33975]			[–0.19108]	[1.05017]	[1.10430]	[0.51825]
	0.001667	0.002413	0.003775			0.023046	−0.022607	0.326260	0.016801
$\Delta BASKET_t$	(0.00143)	(0.00682)	(0.00663)			(0.03404)	(0.03421)	(0.06841)	(0.06956)
$R^2 = 0.120039$	[1.16340]	[0.35397]	[0.56920]			[0.67693]	[−0.66088]	[4.76917]	[0.24154]
ΔCCI_t	–0.034254	–0.155700	–0.058645			–1.761809	−0.638179	−0.631744	−0.223336
$R^2 = 0.117412$	(0.01653)	(0.06305)	(0.06102)			(0.59944)	(0.60789)	(0.32401)	(0.32346)
	[–2.07166]	[–2.46949]	[–0.96114]			[–2.93911]	[−1.04983]	[−1.94978]	[−0.69046]
$\Delta INTSIM_t$	–0.008456	0.015770	–0.004626			0.089538	0.069441	−0.002184	0.073752
$R^2 = 0.047411$	(0.00359)	(0.01369)	(0.01325)			(0.13017)	(0.13200)	(0.07036)	(0.07024)
	[–2.35519]	[1.15183]	[–0.34912]			[0.68787]	[0.52606]	[−0.03104]	[1.05002]
$\Delta DOLLAR_t$	0.001248	0.001548	0.002788			0.301636	–0.005064	0.018323	−0.016216
$R^2 = 0.095724$	(0.00197)	(0.00750)	(0.00726)			(0.07132)	(0.07232)	(0.03855)	(0.03848)
	[0.63434]	[0.20634]	[0.38409]			[4.22957]	[–0.07002]	[0.47533]	[−0.42139]

Continue of Table 7

	Right–Hand–Side Variables								
Equation	**Coint. eq**	$\beta^{11}{}_1$	$\beta^{12}{}_1$	$\delta^{11}{}_1$	$\delta^{12}{}_1$	$\zeta^{11}{}_1$	$\zeta^{12}{}_1$	$\theta^{11}{}_1$	$\theta^{12}{}_1$
ΔCCI_t	–0.116995	–0.089018	–0.013455	0.486718	0.151493	–0.719259	–0.371673		
R^2 = 0.117920	(0.03168)	(0.06373)	(0.06201)	(0.25324)	(0.25916)	(0.32541)	(0.32792)		
	[–3.69284]	[–1.39691]	[–0.21698]	[1.92199]	[0.58455]	[–2.21029]	[–1.13342]		
$\Delta ISE100_t$	0.008907	–0.005596	0.002135	0.178259	–0.039593	0.026871	0.046012		
R^2 = 0.034079	(0.00900)	(0.01810)	(0.01761)	(0.07193)	(0.07361)	(0.09243)	(0.09314)		
	[0.98981]	[–0.30918]	[0.12122]	[2.47826]	[–0.53786]	[0.29072]	[0.49400]		
$\Delta INTSIM_t$	–0.012551	0.015373	–0.005330	–0.137679	–0.060372	–0.055572	0.069587		
R^2 = 0.067510	(0.00681)	(0.01369)	(0.01333)	(0.05442)	(0.05570)	(0.06993)	(0.07047)		
	[–1.84340]	[1.12252]	[–0.39994]	[–2.52983]	–1.08395]	[–0.79465]	[0.98744]		
ΔCCI_t	–0.107698	–0.115037	–0.029817	0.263521	–0.117582	–0.484770	–0.203437	–1.573787	–0.913217
R^2 = 0.147572	(0.03039)	(0.06364)	(0.06134)	(0.27608)	(0.27696)	(0.33230)	(0.33310)	(0.65167)	(0.65342)
	[–3.54412]	[–1.80757]	[–0.48610]	[0.95449]	[–0.42455]	[–1.45883]	[–0.61073]	[–2.41499]	[–1.39759]
$\Delta ISE100_t$	0.005863	–0.004088	0.003623	0.233310	–0.027025	–0.015365	0.044241	0.313116	–0.063022
R^2 = 0.043031	(0.00874)	(0.01830)	(0.01764)	(0.07940)	(0.07965)	(0.09557)	(0.09580)	(0.18742)	(0.18792)
	[0.67091]	[–0.22336]	[0.20537]	[2.93840]	[–0.33928]	[–0.16078]	[0.46181]	[1.67068]	[–0.33537]
$\Delta INTSIM_t$	–0.013165	0.017206	–0.004297	–0.155951	–0.049393	–0.044260	0.059331	–0.087444	0.099731
R^2 =0.072998	(0.00662)	(0.01387)	(0.01337)	(0.06018)	(0.06037)	(0.07243)	(0.07261)	(0.14204)	(0.14243)
	[–1.98755]	[1.24031]	[–0.32137]	[–2.59151]	[–0.81819]	[–0.61106]	[0.81717]	[–0.61561]	[0.70023]

End of Table 7

	Right–Hand–Side Variables								
Equation	**Coint. eq**	$\beta^{11}{}_1$	$\beta^{12}{}_1$	$\delta^{11}{}_1$	$\delta^{12}{}_1$	$\zeta^{11}{}_1$	$\zeta^{12}{}_1$	$\theta^{11}{}_1$	$\theta^{12}{}_1$
$\Delta DOLLAR_t$	–0.002515	0.002311	0.004050	–0.087034	–0.003880	–0.019683	–0.031157	0.216899	0.022487
$R^2 = 0.121800$	(0.00363)	(0.00759)	(0.00732)	(0.03294)	(0.03304)	(0.03964)	(0.03974)	(0.07774)	(0.07795)
	[–0.69368]	[0.30440]	[0.55340]	[–2.64244]	[–0.11743]	[–0.49649]	[–0.78403]	[2.78989]	[0.28846]
ΔCCI_t	–0.099971	–0.129926	–0.041635	0.282525	–0.151750	–0.581300	–0.262638	–1.475964	–1.206604
$R^2 = 0.148676$	(0.02939)	(0.06360)	(0.06166)	(0.28014)	(0.27901)	(0.32602)	(0.32800)	(0.69599)	(0.69586)
	[–3.40201]	[–2.04284]	[–0.67527]	[1.00852]	[–0.54388]	[–1.78301]	[–0.80074]	[–2.12068]	[–1.73397]
$\Delta ISE100_t$	0.005832	–0.001880	0.004300	0.224675	–0.021872	0.004853	0.041368	0.270921	–0.006266
$R^2 = 0.040246$	(0.00847)	(0.01833)	(0.01777)	(0.08074)	(0.08041)	(0.09396)	(0.09453)	(0.20058)	(0.20055)
	[0.68866]	[–0.10257]	[0.24200]	[2.78285]	[–0.27200]	[0.05165]	[0.43763]	[1.35067]	[–0.03125]
$\Delta INTSIM_t$	–0.012392	0.016975	–0.003809	–0.146571	–0.042111	–0.058962	0.058220	–0.023271	0.115733
$R^2 = 0.071400$	(0.00641)	(0.01388)	(0.01346)	(0.06115)	(0.06091)	(0.07117)	(0.07160)	(0.15193)	(0.15190)
	[–1.93183]	[1.22263]	[–0.28300]	[–2.39677]	[–0.69139]	[–0.82847]	[0.81312]	[–0.15317]	[0.76188]
$\Delta BASKET_t$	0.001122	0.001411	0.004008	–0.072768	0.003078	–0.012190	–0.033255	0.248886	0.050787
$R^2 = 0.134846$	(0.00322)	(0.00696)	(0.00675)	(0.03067)	(0.03054)	(0.03569)	(0.03590)	(0.07619)	(0.07617)
	[0.34885]	[0.20273]	[0.59389]	[–2.37292]	[0.10079]	[–0.34157]	[–0.92621]	[3.26676]	[0.66673]

Notes: The values in brackets in each column are the respective standart errors and t-values of the coefficient estimates.

Table 8. Vector error correction models – WOMEN

	Right-Hand-Side Variables								
Equation	**Coint. eq**	$\beta^{11}{}_1$	$\beta^{12}{}_1$	$\delta^{11}{}_1$	$\delta^{12}{}_1$	$\zeta^{11}{}_1$	$\zeta^{12}{}_1$	$\theta^{11}{}_1$	$\theta^{12}{}_1$
ΔCCI_t	–0.044023	–0.006327	–0.004737			0.524668	–0.164643	–1.112827	–0.571035
R^2 = 0.042980	(0.02365)	(0.06424)	(0.06303)			(0.34774)	(0.34839)	(0.69598)	(0.69440)
	[–1.86105]	[–0.09848]	[–0.07516]			[1.50879]	[–0.47258]	[–1.59893]	[–0.82234]
$\Delta INTSIM_t$	–0.016571	–0.014173	0.008465			–0.053729	0.065202	0.180301	0.059739
R^2 = 0.086741	(0.00457)	(0.01242)	(0.01218)			(0.06721)	(0.06733)	(0.13451)	(0.13421)
	[–3.62465]	[–1.14149]	[0.69487]			[–0.79943]	[0.96834]	[1.34038]	[0.44512]
	–0.000252	–0.003488	–0.003647			0.010116	–0.033737	0.331886	–0.003463
$\Delta BASKET_t$	(0.00234)	(0.00635)	(0.00623)			(0.03436)	(0.03442)	(0.06877)	(0.06861)
R^2 = 0.115700	[–0.10801]	[–0.54946]	[–0.58560]			[0.29442]	[–0.98010]	[4.82634]	[–0.05047]
ΔCCI_t	–0.044471	–0.005443	–0.002660			0.510507	–0.107821	–0.854567	–0.769617
R^2 = 0.041977	(0.02371)	(0.06417)	(0.06308)			(0.35923)	(0.35889)	(0.66162)	(0.65731)
	[–1.87548]	[–0.08483]	[–0.04217]			[1.42111]	[–0.30043]	[–1.29162]	[–1.17085]
$\Delta INTSIM_t$	–0.016350	–0.014761	0.008277			–0.049144	0.066723	0.128172	0.049607
R^2 = 0.082692	(0.00459)	(0.01242)	(0.01221)			(0.06955)	(0.06948)	(0.12809)	(0.12726)
	[–3.56160]	[–1.18828]	[0.67778]			[–0.70663]	[0.96032]	[1.00064]	[0.38982]
$\Delta DOLLAR_t$	–0.000151	–0.005353	–0.002111			0.008838	–0.020769	0.307067	–0.020192
R^2 = 0.096015	(0.00256)	(0.00693)	(0.00682)			(0.03882)	(0.03879)	(0.07150)	(0.07104)
	[–0.05907]	[–0.77192]	[–0.30966]			[0.22764]	[–0.53547]	[4.29443]	[–0.28424]

Continue of Table 8

	Right-Hand-Side Variables								
Equation	**Coint. eq**	$\beta^{11}{}_1$	$\beta^{12}{}_1$	$\delta^{11}{}_1$	$\delta^{12}{}_1$	$\zeta^{11}{}_1$	$\zeta^{12}{}_1$	$\theta^{11}{}_1$	$\theta^{12}{}_1$
ΔCCI_t	–0.123794	0.036410	0.019065	–0.300821	0.240891			–0.521701	–0.207891
$R^2 = 0.077713$	(0.03292)	(0.06393)	(0.06237)	(0.29494)	(0.29471)			(0.70341)	(0.68785)
	–3.76079]	[0.56953]	[0.30567]	[–1.01993]	[0.81737]			[–0.74167]	[–0.30223]
$\Delta ISE100_t$	0.012845	0.001915	0.004640	0.212829	–0.054180			0.249507	–0.080641
$R^2 = 0.051009$	(0.00858)	(0.01666)	(0.01626)	(0.07687)	(0.07681)			(0.18332)	(0.17927)
	[1.49734]	[0.11491]	[0.28545]	[2.76875]	[–0.70538]			[1.36101]	[–0.44983]
$\Delta DOLLAR_t$	–4.66E–05	–0.003796	–0.001549	–0.080249	0.002153			0.210045	0.000121
$R^2 = 0.117563$	(0.00358)	(0.00696)	(0.00679)	(0.03210)	(0.03207)			(0.07655)	(0.07486)
	[–0.01300]	[–0.54559]	[–0.22814]	[–2.50016]	[0.06712]			[2.74390]	[0.00162]
ΔCCI_t	–0.135818	0.063333	0.037402	–0.130923	0.292085	0.220045	–0.255136		
$R^2 = 0.064188$	(0.03734)	(0.06548)	(0.06416)	(0.27562)	(0.28087)	(0.35274)	(0.35092)		
	[–3.63778]	[0.96726]	[0.58293]	[–0.47502]	[1.03994]	[0.62381]	[–0.72705]		
$\Delta ISE100_t$	0.006926	0.005379	0.007123	0.176552	–0.038026	0.040584	0.042491		
$R^2 = 0.034630$	(0.00974)	(0.01709)	(0.01674)	(0.07192)	(0.07329)	(0.09205)	(0.09157)		
	[0.71088]	[0.31483]	[0.42541]	[2.45472]	[–0.51882]	[0.44089]	[0.46400]		
$\Delta INTSIM_t$	–0.029530	–0.005992	0.016130	–0.125224	–0.065194	–0.091460	0.053520		
$R^2 = 0.123344$	(0.00715)	(0.01254)	(0.01229)	(0.05278)	(0.05378)	(0.06755)	(0.06720)		
	[–4.13039]	[–0.47792]	[1.31285]	[–2.37262]	[–1.21214]	[–1.35401]	[0.79644]		
ΔCCI_t	–0.168211	0.076870	0.055230	–0.340707	0.149773	–1.503458	–0.202687	0.414628	–0.150166
$R^2 = 0.098378$	(0.04095)	(0.06618)	(0.06381)	(0.30626)	(0.30432)	(0.75700)	(0.75441)	(0.35305)	(0.35274)
	[–4.10781]	[1.16159]	[0.86550]	[–1.11247]	[0.49216]	[–1.98606]	[–0.26867]	[1.17440]	[–0.42571]

End of Table 8

Right-Hand-Side Variables									
Equation	**Coint. eq**	$\beta^{11}{}_1$	$\beta^{12}{}_1$	$\delta^{11}{}_1$	$\delta^{12}{}_1$	$\zeta^{11}{}_1$	$\zeta^{12}{}_1$	$\theta^{11}{}_1$	$\theta^{12}{}_1$
$\Delta ISE100_t$	0.009897	0.003563	0.005392	0.217740	–0.021571	0.262428	–0.008657	0.014852	0.035702
$R^2 = 0.043721$	(0.01084)	(0.01751)	(0.01689)	(0.08104)	(0.08052)	(0.20030)	(0.19962)	(0.09342)	(0.09334)
	[0.91340]	[0.20346]	[0.31935]	[2.68690]	[–0.26789]	[1.31015]	[–0.04337]	[0.15898]	[0.38252]
$\Delta INTSIM_t$	–0.031508	–0.004214	0.016880	–0.126407	–0.051614	0.002369	0.082552	–0.081992	0.058666
$R^2 = 0.119410$	(0.00801)	(0.01294)	(0.01248)	(0.05988)	(0.05950)	(0.14802)	(0.14751)	(0.06903)	(0.06897)
	[–3.93522]	[–0.32564]	[1.35285]	–2.11090]	[–0.86744]	[0.01601]	[0.55964]	[–1.18773]	[0.85060]
$\Delta BASKET_t$	–0.006099	0.001586	–0.000842	–0.067633	0.002571	0.259269	0.039148	–0.019781	–0.043520
$R^2 = 0.141885$	(0.00411)	(0.00664)	(0.00640)	(0.03071)	(0.03052)	(0.07591)	(0.07565)	(0.03540)	(0.03537)
	[–1.48535]	[0.23907]	[–0.13157]	[–2.20225]	[0.08427]	[3.41552]	[0.51750]	[–0.55874]	[–1.23037]
ΔCCI_t	–0.181371	0.081735	0.063034	–0.232001	0.140908	–1.112132	−0.499360	0.464864	–0.079658
$R^2 = 0.101123$	(0.04194)	(0.06605)	(0.06389)	(0.30250)	(0.30212)	(0.71006)	(0.70559)	(0.35868)	(0.35867)
	–4.32418]	[1.23739]	[0.98664]	[–0.76695]	[0.46640]	[–1.56626]	[–0.70772]	[1.29606]	[–0.22210]
$\Delta ISE100_t$	0.011303	0.001347	0.004804	0.224563	–0.030213	0.297442	–0.067094	–0.002220	0.042355
$R^2 = 0.047095$	(0.01110)	(0.01747)	(0.01690)	(0.08002)	(0.07992)	(0.18784)	(0.18665)	(0.09488)	(0.09488)
	[1.01869]	[0.07711]	[0.28426]	[2.80627]	[–0.37803]	[1.58352]	[–0.35946]	[–0.02339]	[0.44640]
$\Delta INTSIM_t$	–0.031466	–0.004512	0.016762	–0.128798	–0.052985	–0.041017	0.069781	–0.069299	0.063387
$R^2 = 0.117100$	(0.00822)	(0.01295)	(0.01253)	(0.05931)	(0.05924)	(0.13923)	(0.13835)	(0.07033)	(0.07033)
	[–3.82597]	[–0.34838]	[1.33807]	[–2.17144]	[–0.89441]	[–0.29460]	[0.50437]	[–0.98533]	[0.90130]
$\Delta DOLLAR_t$	–0.008988	0.001673	0.002180	–0.080175	–0.004465	0.228334	0.018291	–0.025709	–0.037096
$R^2 = 0.134044$	(0.00458)	(0.00721)	(0.00698)	(0.03303)	(0.03299)	(0.07754)	(0.07705)	(0.03917)	(0.03917)
	[–1.96236]	[0.23196]	[0.31250]	[–2.42716]	[–0.13533]	[2.94480]	[0.23739]	[–0.65639]	[–0.94715]

Notes: See Notes of Table 7 in Appendix.