Islam, Tanweer Ul

Article

Consumer Confidence Index and economic growth

EE
E u r o E c o n o m i c a
Issue 2(35)/2016 *ISSN: 1582-8859*

Consumer Confidence Index and Economic Growth: An Empirical Analysis of EU Countries

Tanweer Ul Islam[1], Muhammad Naeem Mumtaz[2]

Abstract: Consumer Confidence Index (CCI) plays an important role through providing decision makers and economic forecasters with required information about present and future economic condition. These indices play a unique role in determining public policies as well as business decisions. Consumer confidence index defines the degree of optimism on the current state of the economy that consumers are expressing through their activities of saving and spending which lead to economic growth of the country. Positive changes in consumer confidence should lead to the economic growth while negative changes impede the economic growth of the countries. This study is an attempt to empirically evaluate the link between the CCI and economic growth of the selected European countries: United Kingdom, Germany, France, Denmark and Netherland. Panel co-integration procedures are applied to establish the long run relationship between the CCI and economic growth for the period of 1996 (1)-2012 (4). Empirical results show the existence of the long run relationship between consumer confidence and economic growth.

Keywords: Consumer Sentiments; Consumption; Growth

JEL Classification: C23; D12; E21

1. Introduction

Consumption behavior plays a key role in macroeconomic modeling, it is crucial to analyze how consumer confidence stimulates the economic behavior. Many researchers have tried to explore the link between macroeconomic variables and consumer confidence indices (CCI). Consumer confidence indices are mainly based on consumer's responses to precise questions about current and future economic conditions, both personal and national. The present condition component can be associated with the economic activity while the expectation component can be related to the growth rate (Ludvigson, 2004). By contrasting the consumer sentiment survey against the recessions, Matsusaka & Sbordone, (1995) found that decline in consumer sentiments are inducing decline in output. Li, (2011) established the causal relationship between consumer expectations and industrial output growth in China. For the emerging economies, a long-run relationship between the consumer confidence, industrial production and stock exchange has been found by Çelik, Aslanoglu, & Uzun, (2010).

Consumer expenditures depend on power to purchase as well as willingness to purchase (Katona 1971). Ability to buy refers to the objective factors that determine the expenditures of the consumer and includes financial assets and access to credit and willingness to purchase captures the subjective factor and depends mainly on behavior and hopes about personal finances and the economy as a

[1] Assistant Professor, PhD, National University of Sciences and Technology, Pakistan, tanweer@s3h.nust.edu.pk.
[2] OG-III, Credit Policy Department, ZTBL, Pakistan, naeem.mumtaz@ztbl.com.pk.

whole. Positive changes in consumer confidence enhance the economic growth of the country and vice versa.

In literature, CCI has been used in predicting the consumer expenditure, asset pricing, stock market and oil price etc. (Praet & Vuchelen, 1988; Jansen & Nahuis, 2003; Ludvigson, 2004; Lemmon & Portniaguina, 2006). However, very few studies have explored the relationship between the CCI and economic growth (Matsusaka & Sbordone, 1995; Utaka, 2003; Sergeant, 2011). This study is an attempt to analyze the link between the consumer sentiments and the economic growth empirically for the selected European countries namely United Kingdom, Germany, France, Denmark, Italy and Netherland for the period of 1996(1)-2012(4).

2. Literature Review

A consumer confidence survey is based on the respondent's opinion about the (1) current business conditions (2) business conditions for the next six month (3) current employment conditions (4) employment conditions for the next six month (5) total family income for the next six month. Survey participants are asked to answer each question as "positive", "negative", or "neutral". These indicators determine the actions of the people about the present and future economic condition of the economy. Consumer confidence indices play a very important role in determining the growth of the country through consumer's spending. It is a useful indicator for policy makers, investors and business owners of a country.

Çelik, Aslanoglu, & Uzun, (2010) studied the link between economic growth and consumer confidence in six emerging economies and the result showed that consumer confidence, stock exchange and industrial production have a long run association in emerging economies. Consumer confidence has significant effect on economic growth of Japan for monthly and quarterly data, Utaka, (2003). A long run relationship has been established in the literature between consumer confidence, and consumption expenditures (Çelik & Özerkek, 2009; Adrangi & Macri, 2011).

Li, (2010) assessed the predictive power of consumer confidence indicators for macroeconomic variations. Consumer expectations individually or combination with other macroeconomic variables Granger cause the growth rates of industrial output. Abaidoo, (2012) established the causal connection between consumer sentiments and fixed private investment growth for US economy. After controlling for economic fundamentals, Matsusaka & Sbordone, (1995) found that consumer sentiments cause GNP using vector autoregressive models. Consumer sentiments accounts for between 13-26% of the innovation variance of GNP.

Kwan & Cotsomitis, (2006) examined the effectiveness of index of consumer attitude (ICA) in predicting household expenditures in Canada both at national and regional level. At the national level, ICA predicted the total personal consumption expenditure and various subcategories of consumer expenditure well. However, the predictability of ICA at the regional level was relatively weaker. On balance, consumer confidence is a reliable predictor of household spending in Canada.

3. Data & Methodology

The variables that are used in this study are Real Gross Domestic Product (RGDP) as a dependent variable and the explanatory variables are Consumer Confidence Index (CCI), Real Effective Exchange Rate (REER), Real Interest Rate (RIR), Gross Fixed Capital Formation (GFCF) and Employment Rate (ER) for the six European countries namely United Kingdom, Germany, France, Denmark, and Netherland. The data for the aforementioned variables are taken from (i) Trading Economics, (ii) Euro Stat, and (iii) IFS for the time period of 1996(1)-2012(4).

The purpose of this study is to explore the long-run relationship between consumer sentiments and economic growth. Fully Modified Ordinary Least Squares (FMOLS)[1] has been applied to estimate the following model for the long-run parameters. This method produces asymptotically unbiased estimators under endogeneity and serial correlation.

$$LRGDP_{it} = \propto_i + \gamma_{1i} CCI_{it} + \gamma_{2i} RIR_{it} + \gamma_{3i} LGFCF_{it} + \gamma_{4i} LLF_{it} + \varepsilon_{it}$$

where, $i = 1,2, \dots, N$ & $t = 1,2, \dots, T$.

Prior to the estimation of FMOLS, Im, Pesaran & Shin, (2003)[2] and Pedroni, (1999, 2004) tests are applied to determine the order of integration and existence of long-run relationship among the variables respectively.

4. Results

The panel unit root test Im, Pesaran, & Shin, (2003) divulges the acceptance of null hypothesis- all cross-sections have unit root, at levels, for all the variables. However, the null is rejected at first difference concluding that all variables are integrated of order one (Table 1). The panel cointegration tests proposed by Pedroni (1999, 2004) have been applied and results are summarized in table 2. Majority of the test statistics have proven the existence of cointegration among the variables.

Table 1. Panel Unit Test (IPS)

Variables	Level	First Difference
LRGDP	2.011	-8.832
	(0.978)	(0.000)
CCI	-1.211	-18.129
	(0.113)	(0.000)
RIR	0.274	-9.274
	(0.608)	(0.000)
LGFCF	0.554	-10.088
	(0.710)	(0.000)
LLF	-0.609	-14.849
	(0.271)	(0.000)

P-values are given in the parenthesis

[1] Bidirectional causality is found between the CCI and RGDP (see table 4) which leads us to the use of FMOLS.
[2] The Levin, Lin and Chu (2002) test is restrictive in the sense that it requires each time series to be stationary under null or unit root under the alternative hypothesis. Im, Pesaran & Shin (IPS) (2003) allow for a heterogeneous coefficient of $y_{i,t-1}$ and propose an alternative testing procedure based on averaging individual unit root test statistics.

Table 2. Panel Cointegration Test

	Statistic	P-value
Alternative Hypothesis: Common AR Coefficients (Within Dimension)		
Panel v-Statistic	-1.127699	0.8703
Panel rho(ρ)-Statistic	-0.667277	0.2523
Panel PP-Statistic	-1.744352	0.0405*
Panel ADF-Statistic	-1.656742	0.0401*
Alternative Hypothesis: Individual AR Coefficients (Between Dimension)		
Group rho(ρ)-Statistic	-0.401523	0.3440
Group PP-Statistic	-2.054476	0.0200*
Group ADF-Statistic	-1.797452	0.0361*

Table 3. The FMOLS Results

Variable	Denmark	France	Germany	Netherland	UK
CCI	0.00016 (0.9746)	0.00016 (2.2435)**	0.00014 (3.2682)***	0.00011 (1.6028)	0.00045 (1.7618)*
RIR	-0.00432 (-5.6103)***	-0.00204 (-2.9228)***	-0.00383 (-3.2682)***	-0.00329 (-2.5669)**	-0.00448 (-3.0512)***
Ln GFCF	0.30731 (10.029)***	0.38691 (12.678)***	0.16259 (3.2338)***	0.15874 (3.8887)***	0.71529 (18.720)***
Ln LF	0.96324 (2.6968)***	0.57201 (3.4836)***	1.17217 (3.1904)***	1.11665 (8.3167)***	0.95180 (3.2327)***
Deuro	0.02556 (9.8723)***	0.01037 (5.0993)***	0.03224 (9.9173)***	0.01439 (2.9858)***	0.01324 (2.1199)**
DFC	-0.00715 (-2.0901)**	-0.00653 (-3.5585)***	-0.00338 (0.6523)	-0.01226 (-3.7882)***	-0.01277 (-1.9507)**

***, **, & * indicate the level of significance at 1%, 5% & 10% respectively.

If the consumers show more confidence on the economic conditions, their demand for products increases in result economic growth of the country increases. Positive and significant long-run relationship is found between economic growth and consumer confidence index for the three key countries of Europe- France, Germany & UK. Our results are in line with Lemmens, Croux, & Dekimpe, (2007). One standard deviation increase in consumer confidence induce economic growth between 0.011- 0.016% across the selected countries.

Real interest rate (RIR) is one of the important determinants of growth. A rise in interest rate increases the cost of borrowing and provides incentive to save more money resulting in a reduction of the expenditures which in turn decreases the aggregate demand. Hence, it affects the economy adversely. One percentage increase in RIR decreases the growth by 0.20-0.45% across the selected group of countries.

The gross fixed capital formation (GFCF) and economic growth has positive and highly significant relationship. One percentage point increase in capital enhances growth by 0.16-0.72% across the

selected group of countries. The most positive affect is on the growth of UK and the least positive affect is on the growth of Germany.

The estimated coefficient on labour is slightly larger than one would expect to predict from neoclassical theory for Germany and Netherland, although it is with in one standard deviation of this value. The possible explanation could be the rise in labour reduces the rate in technological progress.

Two possible structural changes; introduction of Euro currency and the global financial crises, are taken care by introducing the dummy variables in our model specification. Both the dummy variables are significant and carry the expected signs. Introduction of the Euro currency is growth promoting whereas the global financial crisis are growth impeding.

5. Conclusion

Consumer confidence indices play an important role through providing decision makers and economic forecasters with required information about present and future economic condition. These indices play a unique role in determining public policies as well as business decisions. It also plays an important role for the economy because consumer spending increases the economic growth of the country. Positive changes in consumer confidence will lead to the economic growth of the countries and vice versa. In prior research studies relationship between consumer confidence and economic growth has not been much examined. This study establishes the long run relationship between CCI and economic growth for the selected group of European countries by exploiting the cointegration and fully modified ordinary least square (FMOLS) techniques.

6. Reference

Rexford, Abaidoo (2012). Macroeconomic Uncertainty, Consumer Sentiments, Consumption Expenditures And US Fixed Private Investment Growth. *The Journal of Applied Business Research* 28, no. 1, pp. 133-144.

Bahram, Adrangi & Macri, Joseph (2011). Consumer Confidence and Aggregate Consumption Expenditures in the United States. *Review of Economics & Finance 1*, 1-18.

Sadullah, Çelik & Özerkek, Yasemin (2009). Panel Cointegration Analysis of Consumer Confidence and Personal Consumption in the European Union. *Journal of Business Economics and Management* 10, no. 2, pp. 161-168.

Sadullah, Çelik; Aslanoglu, Erhan & Uzun, Seda (2010). Determinants of Consumer Confidence in Emerging Economies: A Panel Cointegration Analysis. *30th Annual Meeting of the Middle East Economic Association*. Atlanta, GA: Allied Social Science Associations.

Kyung So, Im; Pesaran, M Hashem & Heol, Shin Yongc (2003). Testing for unit roots in heterogeneous panels. *Journal of Econometrics* 115, no. 1, pp. 53–74.

Jansen, W Jos & Niek, J Nahuis (2003). The stock market and consumer confidence: European evidence. *Economics Letters* 79, no. 1, pp. 89–98.

Katona, George (1971). A Communication: Consumer Durable Spending. *Brookings Papers on Economic Activity* 1 (1971): 234-239.

Kwan, Andy C.C. & Cotsomitis, John A. (2006). The Usefulness of Consumer Confidence In Forecasting Household Spending In Canada: A National and Regional Analysis. *Economic Inquiry 44*, no. 1, pp. 185–197.

Lemmens, Aurélie; Croux, Christophe & Dekimpe, Marnik G. (2007). Consumer confidence in Europe: United in diversity?. *International Journal of Research in Marketing*, 24113–127.

Lemmon, Michael & Portniaguina, Evgenia (2006). Consumer Confidence and Asset Prices: Some Empirical Evidence. *The Review of Financial Studies* 19, no. 4, 1499-1529.

Ludvigson, Sydney C. (2004). Consumer Confidence and Consumer Spending. *The Journal of Economic Perspectives* 18, no. 2, pp. 29-50.

Li, Cheng (2011). Consumer expectation and output growth: The case of China. *Economics Letters 113*, no. 3, pp. 298-300.

Matsusaka, John G. & Argia, M Sbordone (1995). Consumer Confidence and Economic Fluctuations. *Economic Inquiry* 33, no. 2, pp. 296-318.

Pedroni, P. (1999). Critical values for Cointegration Tests in Heterogeneous Panels with Multiple Regressors. *Oxford Bulletin of Economics and Statistics*, Special Issue, pp. 653-670.

Pedroni, P. (2004). Panel Cointegration: Asymptotic and Finite Sample Properties of Pooled Time Series Tests with an Application to the PPP Hypothesis. *Econometric theory*, pp. 597-625.

Praet, Peter & Vuchelen, Jef (1988). Exogenous shocks and consumer confidence in four major European countries. *Applied Economics* 20, no. 4, pp. 561-567.

Sergeant, Kelvin (2011). Consumer Confidence and Economic Growth- A Case Study of Trinidad & Tobago. *4th International Conference on Business, Banking & Finance*. Trinidad: Halton Trinidad & Conference Center Port of Spain.

Utaka, A. (2003). Confidence and the real economy- the Japanese case. *Applied Economics*, pp. 337-342.