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## **PERCEIVED ECONOMIC CRISIS, CONSUMER ETHNOCENTRISM AND WILLINGNESS TO BUY DOMESTICALLY PRODUCED PRODUCTS IN BRAZIL.**

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### **ABSTRACT**

This article analyzes the interrelationship among perceived economic crisis, consumer ethnocentrism, and willingness to purchase domestically produced products in the Brazilian market in the context of the recent economic crisis. Our survey data shows that more ethnocentric consumers tend to purchase more domestically produced goods, and that this effect is stronger for high-priced than for low-priced goods. However, strikingly, perceived economic crisis has a negative impact on ethnocentrism, which is opposite to common sense and existing literature.

**Keywords:** Perceived Economic Crisis, Consumer Ethnocentrism, Willingness to Buy Domestically Produced Products, Brazil

## 1. INTRODUCTION

The Brazilian economy has experienced one of the largest booms in its history during the last decade. Such an economic boom comes mainly from the increased demand on the commodities and mineral products Brazil exports (Gouvea & Montoya, 2013). Up to 2010, the global economy faced dramatically raising commodity prices and this brought great opportunities to Brazil, as it did to other primary material-exporting economies. However, this boom did not last long, due to and a downturn of commodity prices arose from the Chinese shift to a consumption-driven economy (Belke, Dreger, & Dubova, 2016). Now, Brazil is experiencing one of the harshest recessions in the global economy of recent years.

When a country goes through such crisis, people generally become more self-centered and “foreignness” comes to be understood as a negative aspect. Consequently, nationalism and ethnocentrism increase in intensity (Sharma, Shimp, & Shin, 1995). These perceived threats or fears, which result from political or economic situations, not only influence people’s values and views of broader issues, but also their consumption behaviors (Lee, Hong, & Lee, 2003).

This situation drives our academic interest in the relationship between Brazilian consumers’ perceived economic crisis (PEC), consumer ethnocentrism (CE), and willingness to buy domestically produced products (WBD). This has not yet been intensively researched in the Brazilian context, or even that of other emerging economies.

From the experience of the Asian financial crisis (Amine, Chao, & Arnold, 2005) and the American sub-prime mortgage crisis (Lee et al., 2003), we expect that Brazilians who perceive the current economic crisis as severe will show strong CE. While the relationship between CE and WBD appears to be rather straightforward, we further compare the case of high price (for products that last a relatively long time and reveal the socioeconomic level of the consumer) and low price products (those for daily use and that do not represent hedonic purchases in general sense) to identify the dynamics of CE’s influence over WBD according to the price of goods.

Considering Brazil’s rapidly increasing weight in the global economy, we believe that better understanding the dynamics of factors that affect Brazilian consumers’ purchasing decisions is crucial for understanding the Brazilian market, and will provide reasonable grounds for strategy-building within both domestic and foreign firms, especially in the context of the current crisis in Brazil.

This paper makes three major contributions to the study of CE and related fields, as it (a) shows the possible existence of a negative association between PEC and CE, which has been little studied to date, and thus opens new research question for future study; (b) reveals the detailed dynamics of CE’s influence on WBD according to the product category, which helps to better explain the association between CE and WBD; and (c) provides meaningful insights for current Brazilian consumers and markets through its unique empirical data and robust analysis.

## 1. THEORY

### *1.1. Consumer Ethnocentrism and Perceived Economic Crisis*

CE is a sub-category of ethnocentrism. According to Sumner (1907), all groups of people consider their own group as the “center of world,” and the others are evaluated according to measures the former group delineates. This phenomenon is known as ethnocentrism. In this vein, Shankarmahesh (2006) defined CE as “a general proclivity of buyers to shun all imported products irrespective of price or quality consideration due to nationalistic reasons.” This view is similar to the definition of (Shimp & Sharma, 1987), that CE is “a domain specific concept for the study of consumer behavior with marketing implications” and a “unique economic form of ethnocentrism that captures the beliefs held by consumers about the appropriateness and indeed morality of purchasing foreign-made products.” Cohen and Frazzini (2008) also defined CE as one of the results of consumers adapting to a globalized market situation, and stated that it is shown through consumers’ consistent and conscious use of domestically produced goods and simultaneous rejection of imported goods. Thus, CE refers to consumers’ tendencies to prefer domestically made products over imported products for nationalistic reasons.

Such ethnocentric behavior appears fairly irrational in this globalized world where the nationality of products is not very clear anymore; however, it is based on the consumer belief that buying imported goods is not moral, since it helps foreign firms and people other than domestic residents. Such consumers believe that people should buy domestically produced products to help and strengthen their own economy, and that buying foreign goods equates to letting their own money go abroad, which is bad for national interests. Ethnocentric consumers believe that consumption of imported good harms and breaks down their own economy, industry and even purchaser themselves (Smyczek & Glowik, 2011).

Studies on the influence of risk on people’s thoughts and behavior have been conducted for many decades. At a basic level, people look for stability and predictability, and prefer to avoid unexpected risk and volatility (Camerer & Weber, 1992; Lopes, 1987; Rabin, 2002). Among the various risks that exist in modern society (e.g., war, terrorism, disease, car accidents, etc.), economic recession is prominent, since it not only limits economic decisions and warfare of people, but can also control their lives as other risks do. This can be seen in examples such as the Asian financial crisis, the American mortgage crisis, and the Great Depression (Bernanke, 1983; Cerra & Saxena, 2008; Kotz, 2009).

Brazil has recently been subject to dramatic macroeconomic fluctuation. From the middle of the year 2000 through to the beginning of 2010, Brazil experienced one of its most significant economic booms ever due to high demand for its principal export goods, such as petroleum, soybeans, and sugar. However, the decreasing demand and price for such goods in international markets have brought Brazil back to the pre-boom period.

Considering the scale of the Brazilian economic recession, we believe that it is likely to have had a very serious negative influence on people’s perceptions of economic risk. Thus, we suggest that PEC is a principal variable associated with CE.

Various researches have shown the effect of PEC on people’s economic behavior. For example, Hoffmann, Post, and Pennings (2013) showed, using US recession data from 2008–2009, that PEC negatively influenced investors’ tendency to invest, while raising the expected return on investment. Smyczek and Glowik (2011) revealed through a study of Polish consumer data that consumers with very negative PEC

tend to have higher ethnocentric tendencies. However, to the best of our knowledge, there is a gap in the literature when it comes to the direct relationship between PEC and CE (Smyczek & Glowik, 2011).

PEC may affect various aspects of Brazilian consumers' preference systems. It seems likely that PEC is positively associated with CE, as can be seen from other studies. Bawa (2004) showed in the Indian case that macroeconomic crisis increases consumers' tendency to buy domestically produced goods, and Javalgi, Khare, Gross, and Scherer (2005) showed that immigrants have stronger preferences for products from their origin country over resident countries' national products when there is political turbulence, which naturally brings economic downturns. The logic behind such observations is that most people are self-centered even in when the beneficiary from their behavior is not directly themselves. Thus, people who understand current economic crisis as a serious threat to their national economy and their own economic activity aim to spend their money in ways that benefit themselves and their own economy over others (Balabanis, Diamantopoulos, Mueller, & Melewar, 2001; Clift & Woll, 2012; Grant, 2012).

Based on the above discussion, we provide the following hypothesis to test the relationship between PEC and CE.

*H1: PEC has a positive association with CE in the Brazilian context.*

#### *1.2. Consumer Ethnocentrism and Willingness to Buy Domestically Produced Products*

People who believe that consumption of imported goods means that economic profit and related benefit from payments for that good go to foreign interests rather than the consumer him-/herself, or his/her neighbor, avoid imported products as long as features of the products (other than origin) are comparable. The relationship between CE and WBD has been tested in various settings, including developed and developing economies, and in most cases has been found to be positive (Kaynak & Kara, 2002; Shimp & Sharma, 1987; Watson & Wright, 2000) Thus, we posit the following hypothesis to verify this relationship empirically in the context of Brazil.

*H2: CE has a positive association with WBD in the Brazilian context.*

We are also interested in comparing the impact of CE on WBD according to the price of products. Since higher-priced products have a greater impact on the national economy than lower-priced products do, CE may have a stronger impact on higher-priced (long-lasting) products, than on lower-priced products we consume daily. The following hypothesis is therefore posed.

*H3: CE has more influence on of higher-priced than on lower-priced products.*

## **1. DATA**

### *1.1. Survey*

We conducted a questionnaire comprising 66 questions, which were prepared according to existing literature and translated from English to Portuguese by one of authors, who is a native Portuguese speaker. The other author, who is also a native Portuguese speaker, then rechecked the translated questionnaire and discrepancies were carefully reexamined and corrected. Where a Portuguese version of the questions already existed (e.g., the CETSCALE), this was retained but adapted to follow the style of the other questions.

The questionnaire was pilot-tested with 33 college students from Sao Paulo and Rio Grande do Sul states prior to the actual survey. The questionnaire was then lightly edited for spelling and grammar, and this revised version was used for the main survey. The respondents were accessed through word-of-mouth and internet recruiting by the authors, and no economic reward was given for participation, in order to reduce the sample selection bias. The survey questionnaire was provided through the internet platform SurveyMonkey, and was open for one week. A total of 1,256 people responded to an internet advertisement for the questionnaire (i.e., clicked on the advertisement or reacted positively to the word-of-mouth by asking for the URL of the survey). Among them, 268 respondents participated in the survey (response rate of 21.33%), and 216 completed it. The demographic features of the respondents are shown in Table I.

Table 1. Demographic distribution among respondents completed survey (total number of participant is 216)

Variable Name	Definition	Frequency
AGE	Age of respondents	20-29: 52 obs. (9.70%)
		30-39: 61 obs. (28.24%)
		40-49: 58 obs. (26.85%)
		50-59: 37 obs. (17.13%)
		Over 60: 8 obs. (3.70%)
EDU	Education level	Under middle school: 1 obs. (0.46%)
		High school: 38 obs. (17.59%)
		College or university: 90 obs. (41.67%)
		Over graduate school: 87 obs. (40.28%)
GEN	Gender	Female: 82 obs. (37.96%)
		Male: 134 obs. (62.04%)
WORK	Working status	Working: 152 obs. (70.37%)
		Not-working: 64 obs. (29.63%)
MAR*	Marriage status	Single: 82 obs. (37.96%)
		Married: 101 obs. (46.75%)
		Divorced : 33 obs. (15.27%)
		Widowed: 0 obs. (0.00%)
INCOME1	Income of respondent	0-1,499R\$: 48 obs. (22.22%)
		1,500-2,999R\$: 45 obs. (20.83%)
		3,000-4,499R\$: 28 obs. (12.96%)
		4,500-6,000R\$: 25 obs. (11.57%)
		6,001-7,499R\$: 15 obs. (6.94%)
		7,500-9,000R\$: 15 obs. (6.94%)
		9,001-10,500R\$: 9 obs. (4.17%)
		10,501-12,000R\$ 9 obs. (4.17%)
		12,001-13,500R\$: 6 obs. (2.78%)
		13,501-15,000R\$: 16 obs. (7.41%)
INCOME2	Total income of family	0-1,499R\$: 12 obs. (5.56%)
		1,500-2,999R\$: 18 obs. (8.33%)
		3,000-4,499R\$: 29 obs. (13.43%)
		4,500-6,000R\$: 28 obs. (12.96%)
		6,001-7,499R\$: 17 obs. (7.87%)
		7,500-9,000R\$: 17 obs. (7.87%)
		9,001-10,500R\$: 18 obs. (8.33%)
		10,501-12,000R\$: 13 obs. (6.02%)
		12,001-13,500R\$: 8 obs. (3.70%)
		13,501-15,000R\$: 56 obs. (26.93%)
FAMNO	Number of family	1: 21 obs. (9.72%)
		2: 56 obs. (25.93%)
		3: 64 obs. (29.63%)
		4: 47 obs. (21.76%)
		5: 21 obs. (9.72%)
		6: 4 obs. (1.85%)
		7: 2 obs. (0.93%)
		8: 1 obs. (0.46%)
RACE*	Race (color of skin)	Black: 2 obs. (0.92%)
		Brown: 41 obs. (18.98%)
		White: 158 obs. (78.14%)
		Asian: 12 obs. (5.55%)
REGION*	Region resident	Indio: 3 obs. (1.38%)
		South east: 194 obs. (89.81%)
		South: 6 obs. (2.77%)
		Central west: 5 obs. (2.31%)
		North east: 5 obs. (2.31%)
		North: 6 obs. (2.77%)

\*For actual regression analysis, we used several dummy variable names rather than this name as shown in Table 2.

### 1.2. Variables

PEC was measured according to Erikson, MacKuen, and Stimson (2000) with some modifications. We used six questions to measure PEC, and used the mathematical average of these questions for the regression analysis. All questions were measured using a seven-point Likert scale to derive detailed insights into each respondent's personal ideas on the economic crisis in Brazil. (For the questions asked, see Appendix AT5).

CE was measured using the traditional CETSCALE (Shimp & Sharma, 1987) consisted of 17 questions intended to assess the individual level of CE. We again adopted a seven-point Likert scale for this.

WBD was measured using the method proposed by Darling and Arnold (1988) and Wood and Darling (1993). We selected four categories of products that represent low and high price (as well as daily/non-hedonic and long-lasting/luxury goods), namely stationery goods, processed food, fashion items, and electronic products, to test the detailed dynamics of WBD according to the relative price range of the product. We asked the same six questions for each category of product, and used a seven-point Likert scale.

Demographic data (age, gender, ethnicity, individual/family income, number of family members, marital status, working status, place of residence [region] and education) was also collected to be applied as control variables.

In terms of the validity, the Cronbach's alpha value of each variable was over 0.7, which means they were all acceptable proxies. (For detailed results on the Cronbach's alphas, see Appendix AT5.) Descriptive analysis and Pearson's correlation tables are shown in Tables 2 and 3.

Table 2. Descriptive analysis

Variable	Obs	Mean	Std. Dev.	Min	Max
CE	216	2.57	1.21	1	6.88
PEC	216	4.71	1.07	1.83	7
AGE	216	2.48	1.14	1	5
EDU	216	3.21	0.74	1	4
GEN	216	0.62	0.48	0	1
WORK	216	0.70	0.45	0	1
INCOME1	216	3.87	2.78	1	10
INCOME2	216	6	3.06	1	10
FAMNO	216	3.07	1.29	1	8
MAR_MARRIED	216	0.46	0.50	0	1
MAR_DIVOR	216	0.15	0.36	0	1
RACE_BLACK	216	0.009	0.09	0	1
RACE_BROWN	216	0.18	0.39	0	1
RACE_WHITE	216	0.73	0.44	0	1
RACE_ASIAN	216	0.05	0.22	0	1
REG_SOUTHEAST	216	0.89	0.30	0	1
REG_SOUTH	216	0.02	0.16	0	1
REG_CENTRALEAST	216	0.02	0.15	0	1
REG_NORTHEAST	216	0.02	0.15	0	1
WBD_FASHION	216	3.49	1.15	1	7
WBD_ELEC	216	3.30	1.39	1	7
WBD_FOOD	216	3.62	1.37	1	7
WBD_STAT	216	3.43	1.45	1	7

Table 3. Pearson's correlation matrix

	CE	PEC	AGE	EDU	GEN	WORK	INCOME1	INCOME2	FAMNO	MAR_MARRIED	MAR_DIVOR
CE	1										
PEC	-0.18*	1									
AGE	0.0008	-0.11	1								
EDU	-0.23*	0.03	0.09	1							
GEN	-0.20*	-0.13*	0.18*	-0.02	1						
WORK	-0.13*	-0.07	0.01	0.23*	0.03	1					
INCOME1	-0.27*	-0.01	0.35*	0.39*	0.25*	0.35*	1				
INCOME2	-0.28*	-0.06	0.11	0.37*	0.13*	0.24*	0.68*	1			
FAMNO	-0.005	-0.06	-0.13*	-0.09	0.0005	-0.03	-0.01	0.22*	1		
MAR_MARRIED	-0.10	-0.05	0.23*	0.06	0.14*	0.24*	0.29*	0.25*	0.08	1	
MAR_DIVOR	0.06	0.01	0.31*	0.03	0.09	-0.14*	0.09	-0.06	-0.02	-0.39*	1
RACE_BLACK	-0.04	-0.03	-0.08	-0.02	-0.02	-0.04	-0.06	-0.04	0.03	-0.09	-0.04
RACE_BROWN	0.05	0.002	-0.05	-0.17*	0.01	0.10	-0.10	-0.16*	-0.05	0.01	-0.04
RACE_WHITE	-0.04	0.006	0.10	0.16*	0.04	-0.05	0.11	0.16*	0.08	0.02	0.02
RACE_AISAN	-0.05	-0.01	-0.10	0.06	-0.06	-0.01	0.02	0.006	-0.12	-0.02	-0.04
REG_SOUTHEAST	-0.10	0.02	0.008	0.01	-0.01	-0.08	0.0008	0.07	0.09	-0.02	0.05
REG_SOUTH	0.04	0.005	-0.02	0.02	0.01	0.04	-0.03	-0.11	-0.14*	-0.04	-0.07
REG_CENTRALWEST	0.01	0.05	-0.06	0.03	-0.06	0.09	-0.003	0.05	0.03	-0.02	-0.06
REG_NORTHEAST	0.14*	-0.11	0.09	-0.16*	0.05	-0.10	-0.04	-0.09	0.01	0.10	0.02
WBD_FASHION	0.67*	-0.26*	0.08	-0.14*	-0.19*	-0.05	-0.10	-0.13*	0.01	0.007	0.01
WBD_ELEC	0.63*	-0.23*	0.04	-0.21*	-0.22*	-0.09	-0.16*	-0.21*	-0.02	-0.07	0.07
WBD_FOOD	0.63*	-0.29*	0.11	-0.11	-0.17*	-0.04	-0.07	-0.09	0.03	-0.03	0.04
WBD_STAT	0.68*	-0.23*	0.05	-0.15*	-0.21*	-0.02	-0.16*	-0.16*	0.04	-0.05	0.01



	RACE_BLACK	RACE_BROWN	RACE_WHITE	RACE_AISAN	REG_SOUTHEAST	REG_SOUTH	REG_CENTRALWEST
RACE_BLACK	1						
RACE_BROWN	-0.04	1					
RACE_WHITE	-0.15*	-0.79*	1				
RACE_AISAN	-0.02	-0.11	-0.40*	1			
REG_SOUTHEAST	0.03	0.04	0.03	-0.11	1		
REG_SOUTH	-0.01	-0.01	-0.02	0.08	-0.50*	1	
REG_CENTRALWEST	-0.01	-0.07	0.09	-0.03	-0.45*	-0.02	1
REG_NORTHEAST	-0.01	0.004	-0.04	-0.03	-0.45*	-0.02	-0.02
WBD_FASHION	-0.05	0.12	-0.09	-0.03	-0.08	0.07	0.05
WBD_ELEC	-0.02	0.11	-0.08	-0.07	-0.09	0.03	0.06
WBD_FOOD	-0.04	0.04	-0.01	-0.07	-0.11	0.05	0.03
WBD_STAT	-0.02	0.07	-0.01	-0.10	-0.04	-0.008	0.03
	REG_NORTHEAST	WBD_FASHION	WBD_ELEC	WBD_FOOD	WBD_STAT		
REG_NORTHEAST	1						
WBD_FASHION	0.08	1					
WBD_ELEC	0.12	0.75*	1				
WBD_FOOD	0.11	0.77*	0.75*	1			
WBD_STAT	0.10	0.77*	0.80*	0.81*	1		

Note: \* denotes  $p < 0.05$

## 1. EMPIRICAL STRATEGY

To assess the relationship among PEC, CE, and WBD in the four categories of products, we built two equations, *Equation 1* for *H1*, and *Equation 2* for *H2* and *H3*.

$$CE_i = F(PEC_i, Controls_i) \quad \text{Equation 1}$$

Where  $CE_i$  is individual  $i$ 's measured CE.  $PEC_i$  is individual  $i$ 's PEC and  $Controls_i$  is a vector of control variables of each individual  $i$ .

$$WBD_i^{PC} = F(CE_i, Controls_i) \quad \text{Equation 2}$$

Where  $WBD_i^{PC}$  is the individual  $i$ 's WBD on the product belong to category  $PC$  (product category).

To check the equations empirically, we used the Huber–White sandwich estimator. As is well known, deriving a perfect dataset that will fulfill all the conditions required by ordinary least square (OLS) estimation is difficult, and conducting OLS estimation without addressing this issue bring enlarged bias. However, using the robust regression method can lower this bias; furthermore, among the various types of robust regression methods, this approach produces relatively robust standard errors in a simple way, and thus is widely used among researchers (Freedman, 2012). To compare the difference in the magnitude of beta between the two groups of products in the case of *Equation 2*, a t-test was performed. Finally, to further confirm the robustness of the results, we ran the bootstrapping method.

## 2. RESULTS OF ANALYSIS & DISCUSSION

Table 4 shows the results of the estimation from Equation 1. According to *H1*, derived from our literature review, PEC was expected to have positive association with CE. However, in our regression results, it showed a negative sign, with statistical significance; thus, *H1* is not supported. This means that if Brazilian people consider the current economic crisis as severe, they will reduce their ethnocentric attitude, rather than increase it. This is striking since, in previous research (Amine et al., 2005; Lee et al., 2003), to the best of our knowledge, no such negative association has been found for any country.

Table 4. Regression results of *Equation. 1*

VARIABLES	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5
CE	-0.214*** (0.079)	-0.249*** (0.075)	-0.252*** (0.076)	-0.261*** (0.076)	-0.254*** (0.077)
AGE		0.072 (0.077)	0.052 (0.093)	0.034 (0.094)	0.034 (0.095)
EDU		-0.226* (0.119)	-0.232* (0.119)	-0.208* (0.122)	-0.201 (0.124)
GEN		-0.530*** (0.190)	-0.536*** (0.192)	-0.524*** (0.192)	-0.534*** (0.192)
WORK		-0.131 (0.176)	-0.104 (0.183)	-0.115 (0.179)	-0.129 (0.177)
INCOME1		-0.018 (0.043)	-0.023 (0.043)	-0.019 (0.043)	-0.021 (0.042)
INCOME2		-0.076* (0.039)	-0.070* (0.040)	-0.072* (0.041)	-0.067 (0.040)
FAMNO		0.016 (0.065)	0.011 (0.063)	0.001 (0.064)	0.007 (0.066)
MAR_MARRIED			0.014 (0.184)	-0.015 (0.181)	-0.022 (0.186)
MAR_DIVOR			0.221 (0.322)	0.150 (0.330)	0.172 (0.330)
RACE_BLACK				-1.741* (0.957)	-1.535* (0.870)
RACE_BROWN				-0.807 (0.940)	-0.623 (0.854)
RACE_WHITE				-0.824 (0.930)	-0.657 (0.835)
RACE_ASIAN				-1.103 (0.956)	-0.975 (0.872)
REG_SOUTHEAST					-0.302 (0.516)
REG_SOUTH					0.038 (0.709)
REG_CENTRALWEST					-0.003 (0.885)
REG_NORTHEAST					0.265 (0.856)
Constant	3.590*** (0.392)	5.202*** (0.548)	5.231*** (0.562)	6.124*** (1.061)	6.144*** (1.128)
Observations	216	216	216	216	216
R-squared	0.036	0.191	0.194	0.208	0.216

Note: \* denotes  $p > 0.1$ ; \*\* denotes  $p < 0.05$ ; \*\*\* denotes  $p < 0.01$ , robust standard errors in parenthesis.

Beside the principal variable, education partially showed a negative association in Models 2, 3, and 4 with the dependent variable. This means that if the respondent is highly educated, he or she will be less ethnocentric. This could be considered to be expected, since highly educated people could have more rational intelligence than others. We assume that highly educated people know that CE is not very rational and even that they cannot survive in this globalized era with a strongly ethnocentric attitude, where no product is 100% purely domestically produced. They may also understand that purely exporting countries, as well as a self-sufficient economy, would not survive due to a distorted exchange rate (Lane & Milesi-Ferretti, 2002) and the deepening globalization of trade and production in the current global context (Gourevitch, Bohn, & McKendrick, 2000; Hulme, 2009; MacKinnon, 2012; Maurer & Degain, 2012).

Male consumers were found to be significantly less ethnocentric ( $p = 0.001$ ) than females, and family income had a partially negative association with CE. Other than these variables, however, none of other control variables had statistically significant betas. People who indicated their ethnicity as black seemed to be less ethnocentric; however, only two such people were included in the study, so this result may not be very reliable.

To exhumate the underlying reason for the negative association between the dependent and independent variables, we compared the two subgroups of respondents according to individual income level. From the pair of subgroups with under 9,000 R\$ and over 9,001 R\$ of monthly income, we found interesting results (see Appendix AT1): specifically, the so-called low-to-medium-income group (under 9,000 R\$) had a negative association with CE, as shown in Table 4. However, the high-income group (over 9,001 R\$) showed a positive beta. Although this beta of the high-income group is not statistically significant, this result potentially provides interesting insights into our main result. We interpret that the low-to-medium-income group may not have psychic and economic space to think about others from a long-term economic perspective, since they have very limited income for daily spending; distinguishing the country of origin, while potentially good for their own country and their future, would be not be very economical for them. The high-income group is not in the same situation.

An alternative interpretation is also available. The current economic crisis in Brazil was not merely triggered by international economic trends or exterior factors, but also due to political corruption that has continued from, and was even worse during, the previous government. Under this circumstance and based on such an understanding of the current situation, the low-to-medium-income group may feel more impacted than the high-income group, since low-to-medium-income groups suffer more during economic recessions. People who feel they are victims of a current regime or country may not feel inclined to do something for that country. Since CE is a kind of economic patriotism (Balabanis et al., 2001; Klein & Ettensoe, 1999), this type of interpretation seems logical. An economic crisis triggered by political corruption can be understood as a kind of betrayal by the country, and this could reduce patriotism among victims of the crisis. In conclusion, although *H1* is not supported empirically, it does provide some grounding for further research.

Table 5 shows the regression analysis results for *H2*. We ran the regression analysis four times with WBD for four categories of goods as dependent variables—namely, fashion items, electronic goods, processed food, and stationery goods, *ceteris paribus*. According to our results, CE had a positive association with WBD. All four betas showed statistical significance ( $p = 0.001$ ). Among the control variables, age had a statistically significant positive association with WBD for electronic goods and males had a negative tendency towards WBD for all four categories of products. This result supports *H2*.

Table 5. Regression results for *Equation 2*

VARIABLES	Fashion Items	Electronic goods	Processed foods	Stationary goods
CE	0.646*** (0.047)	0.720*** (0.061)	0.673*** (0.070)	0.807*** (0.060)
AGE	0.100 (0.070)	0.167* (0.084)	0.050 (0.083)	0.132 (0.092)
EDU	-0.026 (0.091)	-0.029 (0.121)	-0.166 (0.119)	-0.026 (0.113)
GEN	-0.246* (0.129)	-0.253 (0.169)	-0.382** (0.178)	-0.300* (0.171)
WORK	-0.059 (0.148)	0.026 (0.174)	-0.078 (0.186)	0.238 (0.183)
INCOME1	0.036 (0.034)	0.032 (0.044)	0.044 (0.044)	-0.006 (0.045)
INCOME2	0.004 (0.032)	0.020 (0.040)	-0.017 (0.040)	0.011 (0.040)
FAMNO	0.038 (0.051)	0.066 (0.073)	-0.017 (0.058)	0.060 (0.079)
MAR_MARRIED	0.084 (0.160)	-0.125 (0.200)	0.036 (0.192)	-0.108 (0.211)
MAR_DIVOR	-0.081 (0.191)	-0.152 (0.256)	0.168 (0.230)	-0.154 (0.267)
RACE_BLACK	0.218 (0.856)	0.402 (0.887)	0.313 (0.945)	0.825 (0.712)
RACE_BROWN	0.616* (0.323)	0.569 (0.357)	0.375 (0.434)	0.879*** (0.250)
RACE_WHITE	0.295 (0.302)	0.459 (0.321)	0.105 (0.400)	0.762*** (0.221)
RACE_ASIAN	0.422 (0.368)	0.261 (0.432)	-0.046 (0.499)	0.474 (0.359)
REG_SOUTHEAST	0.333 (0.368)	-0.322 (0.300)	0.125 (0.413)	0.305 (0.359)
REG_SOUTH	0.721 (0.629)	0.042 (0.540)	0.301 (0.795)	0.056 (0.656)
REG_CENTRALWEST	0.774 (0.516)	-0.064 (0.451)	0.798 (0.686)	0.445 (0.634)
REG_NORTHEAST	0.208 (0.438)	-0.018 (0.397)	0.340 (0.538)	0.553 (0.453)
Constant	0.843 (0.642)	1.043 (0.734)	1.921** (0.791)	-0.081 (0.739)
Observations	216	216	216	216
R-squared	0.499	0.440	0.443	0.503

Note: \* denotes  $p > 0.1$ ; \*\* denotes  $p < 0.05$ ; \*\*\* denotes  $p < 0.01$ , robust standard errors in parenthesis.

Finally, we tested H3, the results of which are shown in Table 6. We grouped the four goods into two according to usual price: processed food and stationery goods were categorized as low-priced goods, while the others were considered high-priced goods. We assigned the mathematical average of WBD to the two product groups as principal independent variables for each regression model. According to the regression results, shown in Table 6, both beta values were positive and statistically significant ( $p = 0.001$ ). We then performed a t-test to assess whether the two betas differed. The results show that they statistically differed at the 0.1% level. This means that Brazilian people's CE has a different magnitude of effect on WBD according to the price of the product. They tend to have a stronger willingness to buy high-priced local-origin products than low-priced products, as H3 predicted.

Table 6. Comparison between low price and high price product category

VARIABLES	Low price goods	High price goods
CE	0.764*** (0.056)	1.319*** (0.104)
AGE	0.149* (0.082)	0.151 (0.134)
EUD	-0.028 (0.108)	-0.193 (0.186)
GEN	-0.277* (0.155)	-0.629** (0.271)
WORK	0.132 (0.163)	-0.139 (0.299)
INCOME1	0.012 (0.042)	0.080 (0.070)
INCOME2	0.015 (0.037)	-0.012 (0.065)
FAMNO	0.063 (0.073)	0.021 (0.100)
MAR_MARRIED	-0.117 (0.194)	0.121 (0.317)
MAR_DIVOR	-0.153 (0.243)	0.086 (0.356)
RACE_BLACK	0.613 (0.786)	0.531 (1.782)
RACE_BROWN	0.724*** (0.265)	0.991 (0.719)
RACE_WHITE	0.611*** (0.234)	0.400 (0.668)
RACE_ASIAN	0.367 (0.365)	0.376 (0.816)
REG_SOUTHEAST	-0.008 (0.303)	0.458 (0.699)
REG_SOUTH	0.049 (0.556)	1.022 (1.365)
REG_CENTRALWEST	0.190 (0.523)	1.572 (1.100)
REG_NORTHEAST	0.267 (0.347)	0.548 (0.840)
Constant	0.481 (0.689)	2.764** (1.283)
Observations	216	216
R-squared	0.514	0.523

Note: \* denotes  $p > 0.1$ ; \*\* denotes  $p < 0.05$ ; \*\*\* denotes  $p < 0.01$ , robust standard errors in parenthesis.

To reconfirm these results, we ran the same regression models using bootstrapping method (200 repetitions; see Appendix AT 2 to AT4 for results). The results of the robustness test confirmed the main results.

## 6. CONCLUSION

To date, authors have principally been interested in the association between PEC and CE, as well as CE and WBD in the Brazilian context. As can be seen in the case of the East Asian countries impacted by the financial crisis in 1997, economic crisis strengthens CE in general (Amine et al., 2005). We tried to identify this positive relationship between PEC and CE in the Brazilian context; however, our empirical results differed from those of other cases, including East Asia and the US (Amine et al., 2005; Lee et al., 2003) with a negative association between PEC and CE. This can be explained in various ways, but we found some clue for the striking results by comparing the income groups of our sample. According to our subgroup analysis (low-to-medium vs. high income), the high-income group tended to show similar results to those found in other countries, while the low-to-medium-income group had a negative association with CE.

This result leaves some room for further research into the logic behind the relationship between PEC and CE. We assume that the relationship could be differentiated according to income level, in that the higher-income group has psychological space to think about the country and long-term aspects of the economy, while the low-to-medium-income group prioritizes daily survival over other macroeconomic aspects. We can also infer that this kind of reverse relationship could exist only in Brazil, since Brazil has experienced severe political corruption, as well as economic crime by politicians, and people may have lost some of their patriotism, blaming their country rather than pitying it. It could also be suggested that the emerging Brazilian economy's low average income, distorted income distribution, and weak middle class compared to that of developed economies, makes the Brazilian case different from that of developed countries; however, this seems less feasible given the East Asian cases.

The difference in magnitude of the positive relationship between CE and WBD according to the price category of products is also very interesting. This result shows that ethnocentric consumers are not just showing off that they are good people through buying only cheap nationally made products, but are prone to sacrifice their own benefit for the country's economy by spending large amounts of money on high-priced-category goods too. This result is similar to that found in previous studies (Balabanis & Diamantopoulos, 2004)

Sharma et al. (1995) identified three tenets of CE: (a) fear of economically harming one's beloved country by buying foreign products; (b) the morality of buying imported products; and (c) a personal prejudice against imports. Consumers that share such tenets tend to prefer domestically made products over imported ones (Watson & Wright, 2000).

However, the contemporary economy is becoming increasingly globalized, and the incidence of purely domestically produced goods is decreasing rapidly (Kee, Neagu, & Nicita, 2013). For example, although a firm may have been founded by a domestic entrepreneur, it could still have an oligopolistic foreign stockholder. In this circumstance, can we still call the output from that company a domestically produced product? Conversely, a product could have been "made in a foreign country" due to being produced by a national firm operating in a foreign country through outward FDI. Considering such cases, CE loses its rationality. Nevertheless, it seems that consumers do not make purchase decisions based solely on rational logic (Hausman, 2000; Miljkovic, 2005), and CE is also unlikely to disappear from the market. Thus, ethnocentric consumers are a good target of domestic firms' concerns about foreign firms' entrance into the domestic market, and government fears of a trade account deficit (Lee et al., 2003; Zhou & Hui, 2003).

As described in the introduction section, the findings in this paper are of use not only to domestic firms and the Brazilian government, but also foreign firms planning to enter into the Brazilian market and foreign governments looking for a way to encourage economic patriotism among their peoples.

The principal limitation of this study pertains to the sample-population structure and representativeness of respondents in terms of a general picture of Brazilian consumers. We encountered difficulties in reaching people with very little education and very little or no income, although Brazil has severe problems with illiteracy and poverty. However, considering their overall purchasing power in market, this limitation can be considered minor.

Future studies could use a kind of experimental approach to assess the causal inferences in the same setting, as well as in other context. They could also consider the impact of individuals' political preferences on their CE in the Brazilian setting. Since the current economic issues are not merely due to the decreasing international demand for commodities, but also from the political parties' corruption and delay in structural reform, respondents' political stance may affect their patriotism, so this could impact results.



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Appendix.

AT 1. Comparison between low-to-middle and high income group for *Equation 1*.

VARIABLES	Low-medium income (Under 6)	High income (Over 7)
PEC	-0.270*** (0.084)	0.080 (0.237)
AGE	0.069 (0.100)	-0.445** (0.202)
EDU	-0.211 (0.155)	-0.374* (0.189)
GEN	-0.609*** (0.216)	0.288 (0.542)
WORK	-0.187 (0.192)	0.406 (0.439)
INCOME1	0.043 (0.084)	-0.292* (0.148)
INCOME2	-0.072* (0.043)	0.114 (0.208)
FAMNO	0.006 (0.073)	0.176 (0.158)
MAR_MARRIED	-0.132 (0.200)	-0.177 (0.698)
MAR_DIVOR	0.063 (0.380)	0.709 (0.919)
RACE_BLACK	-1.527* (0.896)	
RACE_BROWN	-0.558 (0.894)	
RACE_WHITE	-0.644 (0.867)	0.756 (0.578)
RACE_ASIAN	-0.789 (0.924)	-0.011 (0.390)
REG_SOUTHEAST	-0.394 (0.759)	-1.198 (0.783)
REG_SOUTH	0.166 (0.958)	-0.430 (0.413)
REG_CENTRALWEST	-0.474 (1.046)	1.232 (0.766)
REG_NORTHEAST	0.148 (1.027)	
Constant	6.239*** (1.266)	5.053 (3.038)
Observations	176	40
R-squared	0.202	0.376

Note: \* denotes  $p > 0.1$ ; \*\* denotes  $p < 0.05$ ; \*\*\* denotes  $p < 0.01$ , robust standard errors in parenthesis.

AT 2. Replica of Table 4 using bootstrapping approach (reps: 200)

VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 5
PEC	-0.214*** (0.079)	-0.249*** (0.073)	-0.252*** (0.075)	-0.261*** (0.074)	-0.254*** (0.075)
AGE		0.072 (0.073)	0.052 (0.092)	0.034 (0.084)	0.034 (0.101)
EDU		-0.226* (0.120)	-0.232** (0.114)	-0.208* (0.115)	-0.201 (0.124)
GEN		-0.530*** (0.184)	-0.536*** (0.208)	-0.524*** (0.203)	-0.534*** (0.185)
WORK		-0.131 (0.171)	-0.104 (0.187)	-0.115 (0.171)	-0.129 (0.162)
INCOME1		-0.018 (0.041)	-0.023 (0.039)	-0.019 (0.041)	-0.021 (0.042)
INCOME2		-0.076* (0.039)	-0.070* (0.039)	-0.072* (0.042)	-0.067 (0.042)
FAMNO		0.016 (0.058)	0.011 (0.068)	0.001 (0.070)	0.007 (0.064)
MAR_MARRIED			0.014 (0.182)	-0.015 (0.173)	-0.022 (0.187)
MAR_DIVOR			0.221 (0.347)	0.150 (0.299)	0.172 (0.321)
RACE_BLACK				-1.741 (1.217)	-1.535 (1.171)
RACE_BROWN				-0.807 (1.179)	-0.623 (1.128)
RACE_WHITE				-0.824 (1.171)	-0.657 (1.141)
RACE_ASIAN				-1.103 (1.219)	-0.975 (1.174)
REG_SOUTHEAST					-0.302 (0.589)
REG_SOUTH					0.038 (0.855)
REG_CENTRALWEST					-0.003 (1.011)
REG_NORTHEAST					0.265 (0.895)
Constant	3.590*** (0.400)	5.202*** (0.558)	5.231*** (0.577)	6.124*** (1.295)	6.144*** (1.433)
Observations	216	216	216	216	216
R-squared	0.036	0.191	0.194	0.208	0.216

Note: \* denotes  $p > 0.1$ ; \*\* denotes  $p < 0.05$ ; \*\*\* denotes  $p < 0.01$ , standard errors in parenthesis.

AT 3. Replica of Table 5 using bootstrapping approach (reps: 200)

VARIABLES	Eq1	Eq1	Eq1	Eq1
CE	0.646*** (0.051)	0.720*** (0.062)	0.673*** (0.070)	0.807*** (0.061)
AGE	0.100 (0.074)	0.167* (0.087)	0.050 (0.075)	0.132 (0.097)
EDU	-0.026 (0.087)	-0.029 (0.129)	-0.166 (0.121)	-0.026 (0.118)
GEN	-0.246* (0.138)	-0.253 (0.168)	-0.382** (0.179)	-0.300* (0.171)
WORK	-0.059 (0.154)	0.026 (0.198)	-0.078 (0.193)	0.238 (0.191)
INCOME1	0.036 (0.036)	0.032 (0.051)	0.044 (0.043)	-0.006 (0.041)
INCOME2	0.004 (0.031)	0.020 (0.042)	-0.017 (0.042)	0.011 (0.039)
FAMNO	0.038 (0.050)	0.066 (0.075)	-0.017 (0.060)	0.060 (0.087)
MAR_MARRIED	0.084 (0.160)	-0.125 (0.212)	0.036 (0.208)	-0.108 (0.201)
MAR_DIVOR	-0.081 (0.216)	-0.152 (0.259)	0.168 (0.266)	-0.154 (0.277)
RACE_BLACK	0.218 (0.989)	0.402 (0.942)	0.313 (1.012)	0.825 (0.820)
RACE_BROWN	0.616 (0.451)	0.569 (0.490)	0.375 (0.555)	0.879*** (0.327)
RACE_WHITE	0.295 (0.418)	0.459 (0.445)	0.105 (0.537)	0.762*** (0.294)
RACE_ASIAN	0.422 (0.474)	0.261 (0.544)	-0.046 (0.609)	0.474 (0.455)
REG_SOUTHEAST	0.333 (0.398)	-0.322 (0.352)	0.125 (0.459)	0.305 (0.385)
REG_SOUTH	0.721 (0.656)	0.042 (0.600)	0.301 (0.862)	0.056 (0.753)
REG_CENTRALWEST	0.774 (0.576)	-0.064 (0.575)	0.798 (0.758)	0.445 (0.808)
REG_NORTHEAST	0.208 (0.515)	-0.018 (0.481)	0.340 (0.640)	0.553 (0.498)
Constant	0.843 (0.746)	1.043 (0.759)	1.921** (0.878)	-0.081 (0.815)
Observations	216	216	216	216
R-squared	0.499	0.440	0.443	0.503

Note: \* denotes  $p > 0.1$ ; \*\* denotes  $p < 0.05$ ; \*\*\* denotes  $p < 0.01$ , standard errors in parenthesis.

AT 4. Replica of Table 6 using bootstrapping approach (reps: 200)

VARIABLES	Eq1	Eq1
CE	0.764*** (0.059)	1.319*** (0.111)
AGE	0.149 (0.095)	0.151 (0.128)
EDU	-0.028 (0.105)	-0.193 (0.194)
GEN	-0.277* (0.159)	-0.629** (0.271)
WORK	0.132 (0.154)	-0.139 (0.294)
INCOME1	0.012 (0.040)	0.080 (0.071)
INCOME2	0.015 (0.033)	-0.012 (0.067)
FAMNO	0.063 (0.070)	0.021 (0.086)
MAR_MARRIED	-0.117 (0.205)	0.121 (0.316)
MAR_DIVOR	-0.153 (0.264)	0.086 (0.362)
RACE_BLACK	0.613 (0.870)	0.531 (2.067)
RACE_BROWN	0.724** (0.328)	0.991 (0.939)
RACE_WHITE	0.611* (0.329)	0.400 (0.936)
RACE_ASIAN	0.367 (0.479)	0.376 (1.012)
REG_SOUTHEAST	-0.008 (0.353)	0.458 (0.729)
REG_SOUTH	0.049 (0.621)	1.022 (1.399)
REG_CENTRALWEST	0.190 (0.623)	1.572 (1.248)
REG_NORTHEAST	0.267 (0.402)	0.548 (0.916)
Constant	0.481 (0.775)	2.764* (1.540)
Observations	216	216
R-squared	0.514	0.523

Note: \* denotes  $p > 0.1$ ; \*\* denotes  $p < 0.05$ ; \*\*\* denotes  $p < 0.01$ , standard errors in parenthesis.

AT 5. Questionnaire in English

*Perceived Economic Crisis* (Cronbach's alpha: 0.71)

- Brazil's present economic situation is bad.
- Now a day, Brazil's economy is in the worst period in last decade.
- Brazil's economy will worse off for coming one year.
- Brazil's economy will never better off in near future.
- Brazil is economically powerful country.
- Brazil will be economically powerful country in near future.

*Consumer Ethnocentrism* (Cronbach's alpha: 0.94)

- Brazilian people should always buy Brazilian-made products instead of imports.
- Only those products that are unavailable in the Brazil should be imported.
- Buy Brazilian-made products. Keep Brazilian working.
- Brazilian products, first, last, and foremost.
- Purchasing foreign-made products is un-Brazilian.
- It is not right to purchase foreign products, because it puts Brazilians out of jobs.
- A real Brazilian should always buy Brazilian-made products.
- We should purchase products manufactured in Brazil instead of letting other countries get rich off us.
- It is always best to purchase Brazilian products.
- There should be very little trading or purchasing of goods from other countries unless out of necessity.
- Brazilians should not buy foreign products, because this hurts Brazilian business and causes unemployment.
- Curbs should be put on all imports.
- It may cost me in the long-run but I prefer to support Brazilian products.
- Foreigners should not be allowed to put their products on our markets.
- Foreign products should be taxed heavily to reduce their entry into the Brazil
- We should buy from foreign countries only those products that we cannot obtain within our own country.
- Brazilian consumers who purchase products made in other countries are responsible for putting their fellow Brazilians out of work.

*Willingness to Buy Domestically Produced Products*

(Cronbach's alpha: 0.76/fashion item, 0.86/electronic goods, 0.85/processed food, 0.88/stationary goods)

I would feel proud if I bought a Brazilian #####.

I would only buy a Brazilian #####.

Whenever possible, I would avoid to buy imported #####.

Whenever available, I would prefer to buy ##### made in Brazil.

I do not like the idea of owning imported #####.

If two products were equal in quality, but one was from foreign country and one was from Brazil, I would pay 10% more for the ##### made in Brazil.

*Demographic Characteristics*

Questions	Answers
How old are you?	10, 20, 30, 40, 50 ,60~
What is your race?	black, brown, white, asian, indian
What is your educational background?	under high school, high school, university, over master
How much you earn per month during the last one year including tax?	0-1499, 1500-2999, 3000-4499, 4500-6000, 6001-7499, ..... in 10 categories
How much your family earn per month during the last one year including tax?	0-1499, 1500-2999, 3000-4499, 4500-6000, 6001-7499, ..... in 10 categories
How many family members do you have?	0,1,2,3,4,5~
What is your current marital stage?	never married, married, divorced
Do you have work?	yes, no
What is your gender?	M, F