Hacettepe University Graduate School of Social Sciences

Department of Economics

THREE ESSAYS ON BEHAVIORAL ECONOMICS

Feyza ÖZDİNÇ

Ph.D. Thesis

Ankara, 2023

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ACCEPTANCE AND APPROVAL

The jury finds that Feyza Özdinç has on the date of 15/06/2023 successfully passed the defense examination and approves her Ph.D. Thesis titled "Three Essays on Behavioral Economics".

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ABSTRACT

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This dissertation consists of three essays about Behavioral Economics. The first essay discusses the behavioral patterns of economically disadvantaged Turkish people for the years 2006 and 2019. The second essay investigates what kind of behavioral economics principles applies to the Central Bank of the Republic of Turkey's monetary policy behavior. Lastly, the third essay examines if the Status Quo Bias, one of the Behavioral Economics concepts, is valid for Turkey during the recent economic crisis. Hence, this dissertation contributes to the growing literature on Behavioral Economics by examining Turkey using Behavioral Economics methods on individual, institutional, and macro levels.

Keywords

Behavioral Economics, ARDL, Poverty, Monetary Policy, Status Quo Bias, Anchoring.

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ABBREVIATIONS

ACPI	:	Annual Consumer Price Index
ARDL	:	Autoregressive Distributed Lag Bounds
BE	:	Behavioral Economics
CBOE	:	The Chicago Board Options Exchange
CBRT	:	The Central Bank of the Republic of Turkey
CE	:	Conventional Economics
CPI	:	Consumer Price Index
CUSUM	:	Cumulative Sum
CUSUM SQ	:	Cumulative Sum Squares
eACPI	:	Expectation of Annual CPI by the End of Current Year
eMCPI	:	Expectation of Monthly CPI for the Current Month
MPCI	:	Monthly Consumer Price Index
OECD	:	The Organization of Economic Cooperation and Development
PPI	:	Producer Price Index
RSCI	:	Real Sector Confidence Index
SMT	:	Save More Tomorrow
TURKSTAT	:	Turkish Statistical Institute
UN	:	United Nations
VIX	:	Volatility Index
WWI	:	World War I

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PREFACE

INTRODUCTION

Neo-classical Economics/Conventional Economics (CE) is founded on reason; meaning that it accepts economic agents as rational beings and these rational beings are called 'Homo-economicus'. Thus, the axioms of CE build on this assumption. However, it is a well-known fact that human beings are not rational beings, in fact, they are irrational most of the time.

On the other hand, Behavioral Economics accepts the fact that human beings are irrational beings and try to analyze how cognitive, psychological, emotional, cultural, and social aspects affect individual or institutional decisions by using Behavioral Science concepts and/or principles as tools. Although Adam Smith and other economists from the 18th century first considered how preferences can affect people's economic behavior, it can be said that behavioral economics actually predates the 1970s when it first emerged as a separate subject of study.

For example, in The Theory of Moral Sentiments, Adam Smith wrote on a large range of ideas involving concepts like loss aversion, willpower, and fairness that have been the focus of behavioral economics (Ashraf et. al., 2005). Jeremy Bentham with utility concept, Francis Edgeworth with social utility, Irving Fisher and Vilfredo Paretto's speculations on people's feelings and thoughts about economic choices, and John Maynard Keynes's insights all had psychological underpinnings. Researchers such as George Katona, Harvey Leibenstein, Tibor Scitovsky, and Herbert Simon argued the importance of psychology and bounded rationality (Camerer, et al., 2004, pp-4-7).

In particular, works on behavioral economics were greatly appreciated and had big recognition by The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel. In 1978, Herbert Simon was awarded for his work on bounded

rationality; in 2001, George Akerlof, Michael Spence, and Joseph Stiglitz were awarded for their analysis of asymmetric information; in 2002 psychologist Danial Kahneman was awarded for integrating psychological insights into economic science and economist Vernan L. Smith was awarded for establishing laboratory experiments as a tool in empirical economic analysis; in 2013 Robert J. Shiller was rewarded for his work on behavioral finance; in 2017 Richard H. Thaler awarded his contributions to behavioral economics; and in 2019 Abijhit Banerjee, Esther Duflo, and Michael Kremer awarded for their experimental approach on poverty the Nobel Memorial Prize in Economic Sciences.

In Conventional Economics, there is a rational person/agent presupposition. This rational individual determines his preferences according to an optimization (utility maximization) and economists can formulate them as an equality (equilibrium). However, there is a fact that we need a lot of information (big data) to formulate life, and people often cannot or do not make decisions by "thinking" in a way that maximizes their choices. Even if we have a big amount of information, there is one element that we cannot predict, which is human behavior. Behavioral Economics tries to explain Economics by including human behaviors. In other words, it can be said that Behavioral Economics is the Economics that includes "humans" not the "homo-economicus" or "Econs" as Richard Thaler, who was awarded the Nobel Prize in Economics in 2017, classifies (Thaler & Sunstein, 2008).

Homo-economicus, that is, the individual who can make rational decisions endlessly and seamlessly, created and used in Conventional Economics is actually a myth. Richard Thaler, considers Homo-economicus as "Econs", and we, the ordinary people, who do not have superior decision-making abilities like Econs, as "Humans". Because "Humans" are not hedonistic beings with well-defined preferences such as "Econs" and constantly chasing money to maximize their own utility.

I mentioned that the fact that individuals cannot make the "best" decision by thinking, that is, they cannot make choices that will maximize their utility by solving an optimization problem, as is assumed in Conventional Economics. Daniel Kahneman, who won the Nobel Prize in 2002, explains the reason for these "imperfect choices" in his book Thinking, Fast and Slow as System I and System II. In other words, he says that humans are not "Homo-economicus", that is, living things that make the right decision for themselves by making rational decisions, as assumed in Neoclassical Economics, but that they are actually creatures that cannot make rational decisions most of the time. On the contrary, we make intuitive decisions 98% (System I) of the time in total. He says that only 2% (System II) of the decisions we make are made with consideration.

With System I, our minds make instinctive decisions quickly, easily, and unconsciously, in the blink of an eye as Malcolm Gladwell (2006) says. Although using System I a lot is often life-saving and time-saving, the decisions we make unconsciously, without thinking, stem from using System I 98% of the time.

System II, on the other hand, is related to the part of our brain that makes decisions by thinking. In other words, the part of the brain where we make logical and conscious decisions by thinking, planning, and negotiating as if we were sitting down and solving a mathematical question considers the System II part of the brain. Therefore, decisions taken with System II are slower and take more time compared to decisions made with System I. After learning about such a distinction, we can observe these differences when we review our own daily life easily and clearly. Because most of the decisions we make in our daily lives are taken without thinking meaning that we have a routine. For example, when we wake up in the morning, we brush our teeth and take the same route to work/school. However, when we encounter events that we need to think about, we use System II, which according to Danial Kahneman corresponds to 2% of our time.

We now have a better understanding of why people engage in irrational behavior after discussing System I and System II and realizing that we act without thinking 98% of the time. Behavioral economics offers methods to explain this behavior in the context of economics by admitting the irrationality of economic actors. The irrational behavior patterns exhibited by people in this way are classified by Behavioral Science. Some of them are as follows: Confirmation Bias, Endowment Effect, Loss Aversion, Default Option, Anchoring Bias, Availability Bias, the IKEA Effect, Herding Behavior, etc.

These explanations show that even though human actions and behaviors are frequently illogical, they may be predicted and guided in advance. Naturally, this prompts us to consider the issue of how to influence individuals to make more logical decisions leading us to the concepts, methods, and theories such as Choice Architecture, Choice Architect, Prospect Theory, and Liberal Orientation/Liberal Paternalism.

Despite the growth of the field of Behavioral Economics, there is still much to be learned about Turkey from a behavioral economics standpoint. The purpose of this dissertation is to contribute to the literature by using a Behavioral Economics approach to analyze Turkey.

To investigate how Behavioral Economics fits Turkey and Turkish people and Turkish institutions, both microeconomic and macroeconomic perspectives are going to be used. For this purpose, first of all, the behavioral patterns of economically disadvantaged people are going to be examined. Then, the Central Bank of the Republic of Turkey (CBRT)'s inflation-targeting policy is going to be analyzed. After approaching with a microeconomic perspective with the first two papers, the third paper exhibits a macroeconomic perspective by using macroeconomic data and investigating the status quo bias during the last Global Crisis.

In conclusion, this dissertation contributes to the literature using both microeconomic and macroeconomic perspectives with a Behavioral Economics approach. Since poverty is an increasing problem both around the world and in Turkey it starts with inspecting behavioral patterns of poor people in Turkey with a cross-section analysis. Then moves on to an institution and investigates the CBRT's inflation-targeting policy with an OLS Regression Analysis. Lastly, it introduces a macroeconomic analysis by analyzing the recent global economic crisis for Turkey with Autoregressive Distributed Lag (ARDL) Bounds test.

CHAPTER 1

A BEHAVIORAL ECONOMICS INSIGHT TO ECONOMIC LIVES OF THE POOR IN TURKEY: A CROSS SECTION ANALYSIS FOR 2006 AND 2019

ABSTRACT

The purpose of this paper is to investigate economic behavior patterns of low-income group of people in Turkey. In order to investigate how economically disadvantaged people live in Turkey, a cross section analysis will be conducted for 2006 and 2019 from Household Budget Survey, a survey conducted by Turkish Statistical Institute (TURKSTAT).

Demographics, how the poor earn their money, how the poor spend their money and their economic and infrastructural environment are going to be explained by sorting data from the three different data sets that are included in the Household Budget Survey.

The need to study the poor in Turkey rose, because like it is around the world poverty is an unsolved issue in our country. Since the Neo-classical Economics could not resolve the problem, it has become necessary and inevitable to look from a new perspective. Thus, in this study a Behavioral Economics perspective is going to be used to explain the lives of poor people and some policy suggestion will be made.

Keywords: Poverty, behavioral patterns, cross section analysis.

1.1. INTRODUCTION

Poverty is a famous topic around economists; there are plenty of poverty reports; and institutions and organizations such as World Bank and UN are working on poverty. Despite the fact that this being the case, still there are millions of people who are suffering from consequences of poverty such as lack of necessary nutrition, lack of clean water and lack of education, etc.

Since it has been worked on so much and there is still no acceptable level of solution, it can only be concluded as one of the short-comings of neoclassical economics. Instead of resolving the poverty issue, it is quite the contrary, the situation even worsens every day. Considering the Covid-19 pandemic, rising energy and food prices and therefore, the economic crisis we are in at the moment poverty can only be expected to increase even more than foreseen before and even in the 2020, when crisis was not as deep as right now the anticipated numbers were horrifying.

According to World Bank's recent report, in 2020 alone, over 70 million more people now live in extreme poverty, which is the biggest one-year increase since the global poverty monitoring program started in 1990. While the number of people who live below the $2.15/per day poverty line is 659 million in 2019, it is projected that 574 million people, 7% of the world's population, will still be living in extreme poverty in 2030 (World Bank 2020).

Since we do not have a sound solution to the poverty issue yet it can only mean that we-as economists-should have a new perspective. Therefore, respectable amount of economists started to look into this issue from a behavioral perspective such as Bertrand, Marianne; Mullainathan, Sendhil; Shafir, Eldar (2004), Beaulier, S; Caplan, B. (2007), Banerjee and Duflo (2009) Anand and Stephen 2011, Markus, Kanbur and Jukka 2014, Leuker (2014). (Anand, Paul; Lea, Stephen 2011, Banerjee, Abhijit V.; Duflo, Esther 2009, Beaulier, S.; Caplan, B.

2007, Bertrand, Marianne; Mullainathan, Sendhil; Shafir, Eldar 2004, Jäntti, Markus; Kanbur, Ravi; Pirttilä, Jukka 2014, Luebker, M. 2014).

In the light of this behavioral economics perspective to the poverty, the general aim of this paper is to exhibit the behavioral patterns of poor people in Turkey and introduce how they live in terms of health, education, money making, how they spend it and their infrastructural resources; and consequently to offer new behaviorally adjusted policies in the light of these findings.

Thus, in this paper, I am going to look into poverty in Turkey with a behavioral economics insight and try to explain behavioral patterns of economically disadvantaged people in Turkey and instead of only counting the poor I will also capture and describe what economically disadvantaged people's lives look like. In other words, the primary goal of this paper is to take a snapshot of poor people's lives economically and structurally by using cross-section analysis.

My discussion on this issue will be built on the Household Budget Survey data conducted by the Turkish Statistical Institute (TURKSTAT) for years 2006 and 2019. The purpose of using these two years is twofold. First of all, it will allow us to compare and contrast the differences between these two years; and secondly, it will show us how long a road we have come as a country -if any- in terms of poor people's life quality and opportunities.

1.2.   MOTIVATION AND LITERATURE REVIEW

Poverty is defined in or measured as either absolute or relative poverty. Absolute poverty is also known as extreme poverty and absolute poverty is defined as lack of basic life necessities such as clean drinking water, food, and sanitation.

The World Bank Organization defines absolute poverty by using a poverty line (poverty threshold). People under the poverty line are considered as poor. The

extreme poverty line was set at $1/day by World Bank for World Development Report 1990: Poverty (World Bank 1990). The World Bank revised the extreme poverty line to $1.25 in 2005 (Ravallion, Martin; Chen, Shaohua; Sangraula, Prem 2009), to $1.90 (which is a roundup of $1.88) in 2011 and $2.15 in 2017 (World Bank 2020). The principle behind this international poverty line value change is because it is according to Purchasing Power Parity (PPP). Since PPP is changing overtime proper adjustments were made to the international poverty line.

It is important to have a behavioral economics view of poverty because even though it is a very well-studied topic, unfortunately, one still cannot say that we have overcome the poverty issue and people around the world live in prosperity. According to World Bank's recent report, it is expected that the number of people in poverty in 2030 will be 574 million while the current estimate is 659 million (World Bank, 2020). Since this is the case, putting these two together, one being that it is a well-studied issue and the second being that it is not resolved yet on the contrary it is expected to increase in the future more; it can only be concluded as one of the shortcomings of neoclassical economics. Instead of resolving the poverty issue, it is quite the contrary, the situation even expands as long as we do not change our perspective. Changing perspective not only force us to take a different theoretical stand point but also to change the mindset of the policy maker. Maybe instead of trying to reduce to poverty we should try to increase the wellbeing and wellness of the poor people. Therefore, in order to produce policies to overcome the poverty issue and increase the wellbeing and wellness of poor people what needed first is to know the lives of the poor in other words conditions of economically disadvantaged people. Because any policy we will suggest or made by the policy makers without having this kind of information and insight would be lacking of ability to resolve the issue and unreasonable since to make policies over-the-counter and/or not-knowingly does not work.

It can be said that there are two ways to look to poverty from a behavioral point of view. The first one is how the poverty affects human behavior; and the second one is whether behavior of poor people can be changed by using behavioral

incentives which are called "nudges" by behavioral economists. It is safe to say that the answer to the both questions is affirmative.

Poverty means that economically disadvantaged people are short of food, clean water, sanitation; it, also, means that people in poverty have to deal with the consequences of these deficiencies. Having financial problems cause them to have sleeping problems (Mani, Anandi; Mullainathan, Sendhil; Shafir, Eldar; Zhao, Jiaying 2013) and they cannot reach sufficient nutrition levels, therefore it affects their brain functions and causes other health problems.

In their study Mischel, W., Shoda, Y., & Peake, P. K. (Mischel, Walter; Shoda, Yuichi; Peake, Philip K. 1988) famously known as "The Marshmallow Test" found that among 95 adolescents they observed over the years, those who chose the delayed gratification -in their experiment more marshmallows were offered later on if they accept to wait for a certain amount of time instead of just the one they gave to the test subjects instantly- were more successful in their personal lives and social competence. This study was revolutionary because it showed that even at very young ages it was mostly predictable if an individual would be able to cope and adapt socially and professionally to the life ahead.

On the other hand, another recent study revisits this "Marshmallow Test" by experimenting on a wider and diverse sample and they find that children who have wealthier parents are more successful in delayed gratification in a comparison with their less wealthy counterparts (Watts, Tyler W.; Duncan, Greg J.; Quan, Haonan 2018). Since, poverty has permanent effects on human behavior we can conclude that poverty is an issue that we must address and solve in order to have a brighter future. Additionally, it is a scientific fact that lower family income affects children's cognitive function negatively (Decker, Alexandra L.; Duncan, Katherine; Finn, Amy S.; Mabbott, Donald J. 2020, Mani, Anandi; Mullainathan, Sendhil; Shafir, Eldar; Zhao, Jiaying 2013).

This being said, Duflo and Banerjee (2007) discuss the economic lives of the poor in Cote d'Ivoire, Guatemala, India, Indonesia, Mexico, Nicaragua, Pakistan, Panama, Papua New Guinea, Peru, South Africa, Tanzania, and Timor Leste (East Timor). While they investigate these 13 countries they look into lives of extremely poor people and use household survey data. As we can see from the list there are countries from Asia, Africa and Latin America.

Bertrand, M., Mullainathan, S., & Shafir, E. (2004) looks into poor people's banking and saving behaviors and their attendance to social programs in the US and suggest several policies according to the patterns they stumble upon.

The motivation of this paper is to contribute some behavioral economics perspective to the literature about the lives of poor people in Turkey by investigating the economic lives and behavioral patterns of the poor in Turkey. While adding a behavioral economics view to the economically disadvantaged people in Turkey and exploring behavioral patterns of the poor demographics, source of income, what money spent on, economic environment, infrastructural conditions are going to be investigated, which is a very similar classification used by Banerjee and Duflo (2007).

1.3. DATA

The data used in this study is the Household Budget Survey that is conducted by the Turkish Statistical Institute (TURKSTAT) for the years of 2006 and 2019. For each year there are 3 different data sets, one of them representing the households, the second one representing the individuals and the third one representing the consumption units. There is one mutual variable (called BIRIMNO) in each every one of the data sets and the relationships are instructed using this mutual variable.

For the year of 2006 there are 8,558 households including 34,939 individuals overall and out of these households 517 of them are at 40% median income level that include 3,054 individuals. On the other hand, for the year of 2019 there are 11,521 households including 38,744 individuals in the overall data set and out of these households 487 of them are at 40% median income level that include 2,579 individuals.

All the data sets were weighted before sorting according to used classifications and the household size is OECD equivalent. Demographics, how the poor earn their money, how the poor spend their money, economic environment of the poor and infrastructural sources of the poor are explained below respectively.

In this paper, to oversee the economic lives of the poor relative poverty is used since absolute poverty rate was not calculated and published by TURKSTAT after 2009. Also, to have significant amount of households 40% median income is used instead of 20% median income. This way it is expected to make more sense of the behavioral patterns of economically disadvantaged people.

1.4.   DEMOGRAHICS

In this section, first of all age distribution of the poor is going to be investigated. Secondly, the closeness of the member of the households to the head of the household is going to be examined considering poor families tend to live with a large number people in one household to share the expenses. Lastly, the gender proportion of the poor people is going under microscope to see if poverty is just to women and men in Turkey.

Table 1. Age Frequency

AGE	Freq.	%
0-6	401	15.55
7-13	524	20.33
14-18	366	14.20
19-30	460	15.46
31-40	313	10.99
41-50	263	10.19
51-60	175	6.77
61-70	104	4.05
71-80	35	1.37
80-97	28	1.1

In the table above (Table 1) we see the age frequency of the poor. While the mean age frequency is 25.38, the minimum value is 0 and the maximum value is 97 for 2019. According to the information from Table 1 15.55% of the population that is being investigated in this study is children between ages 0-6. 20.33% of this group of people are between the ages of 7-13, and 14.20% of this population is between 14-18 years old. In total, 50.08% of this population is under the age of 18.

As it can be deducted from the information in the Table 1 and also Table 2, poor families have a large number of number of children. A plausible explanation could be the fertility level is high among these families. Complementary to high population of young people, there are only a few older people. One reason for having much less elderly people in the population might be a higher mortality rate those who are older and poor. This difference between the percentage of young people and old people is compatible with Banerjee and Duflo (2007) and Anand and Lea (2011).

Children and youth facing poverty experience health and social inequalities in comparison with their better-off peers. Poverty in children and youth has severe consequences in the aspect of health, social, emotional, cognitive development, and educational outcomes. Because of poor nutrition, children in poverty experience a wide of health problems such as chronic diseases and mental health issues. Additionally, children born into poverty are more open to substance misuse because of the financial difficulties that their parents experience. Since 50% of the economically disadvantaged people in Turkey consist of children and young people, it is a very critical issue that needs to be dealt with. The issues that this young population face with such as lack of education, poor schooling, lack of food, and lack of proper living conditions are crucial for the future of the country.

Table 2. Closeness to the Head of Household

CLOSENESS TO THE HEAD OF HOUSEHOLD	2006*	2019*
Head of Household	16.93	18.88
Spouse	14.54	14.23
Child	57.50	54.44
Parent	1.87	1.40
Sibling	1.05	0.89
In-law parents	0.23	0.19
Daughter-in-law/Son-in-law	2.36	2.52
Grand-child	5.21	6.75
Other Relatives	0.29	0.47
Non-relatives	0.03	0.23
*%		

As we can see from the Table 2 above, the proportion of the household increased from 16.93% to 18.88% in 2019 in comparison with 2006. Also, the total of head of household, spouse and child dropped to 87.55% in 2019 while the total was 88.97% in 2006. Considering that the percentage of people who live with non-relatives increased to 0.23% from 0.03% it can be concluded that the number of single people also have increased. While it is not the intention to jump to conclusions, combining these two information may result from the fact that it is getting hard to get married for people taking into account increased wedding costs.

Additionally, we see a household structure that involves siblings, in law-parents, grand-child and other relatives at 11.03% of the population. This ratio is 12.45% in 2019, which is higher than 2006. To live with parents, siblings, cousins or some other family members is common in developing countries.

Table 3. Gender

GENDER	2006*	2019*
Male	46.92	48.78
Female	53.08	51.22
*%		

In Table 3, we can see the male and female distribution and it is obvious that while there was a higher gender gap in favor to male portion of the population in 2006 in terms of poverty this gap had gotten narrower in 2019 while it still is in favor to male population. It is not surprising to have this kind of results since it is a fact that women around the world make less money than men even though they have the same job and have the same responsibilities.

1.5. HOW THE POOR EARN THEIR MONEY

In this section, it is going to be examined what kind of jobs the poor have in order to make a living. Since it is common to have multiple occupations for people who have a certain life standard, it is worth mentioning that it is not found in the questionnaire if people had multiple occupations. Therefore, it is assumed that the graph below shows the main source of earnings.

Table 4. Professions

PROFESSION	2006*	2019*
Managers	1.27	1.13
Professionals	0.51	1.35
Technicians, technicians and associate professionals	0.25	0.90
Staff working in office services	0.13	0.90
Service and sales people	4.59	13.54
Skilled agricultural, forestry and aquaculture workers	57.20	42.66
Craftsmen and related workers	10.32	9.48
Plant and machine operators and assemblers	4.20	4.97
Those who work in jobs that do not require qualifications	21.53	25.06
*%		

As we can see from Table 4, most of the poor people work as agricultural, forestry, aquaculture, craftsmen and related workers as expected. Also, a considerable amount is consist of those who work in jobs that do not require qualifications which is an issue of lack of specialization. Another point that should be considered is that the percentage of skilled agricultural, forestry and aquaculture workers dropped to 42.66% in 2019 while it was 57.20% in 2006,

meaning that agriculture, forestry and aquaculture industries losing their skilled workers to sales and service and more unfortunately to those jobs that do not require specific skills and qualifications which is very unfortunate for Turkey's agriculture, forestry and aquaculture industries.

1.6.   HOW THE POOR SPEND THEIR MONEY

In this section, it is going to be covered that even though people work hard as much as they can what kind of choices they have to make in terms of consumption. In Table 5 below there are twelve consumption categories as Food and non-alcoholic beverages, Alcoholic beverages, cigarette and tobacco, Clothing and footwear, Housing and rent, Furniture, House appliances and home care services, Health, Transportation, Communication, Entertainment and culture, Educational services, Restaurant and hotels, Various good and services. The percentages show how much of the income of poor people spent on each of these twelve categories listed above.

As it can be expected a very big portion of income of these people who are in low income group needed to provide food and housing (See Table 5). Unfortunately, is it very hard for these people to afford going to restaurants and hotels and they can barely manage health care and education and allow themselves to entertain.

Since these people have a very little budget to spare for heath/well-being and education expenses, it will affect the future of their children severely. While it is obvious that poor families and children should be supported by the government at infrastructural level, we can easily see from Tables 13 and 14 this is not the case. Most of the poor household do not have easy access to health and educational services.

It is also obvious from the table that since people had to spend more on housing and rent they had to decrease their food consumption. Thus, lack of nutrition will

cause health problems both in adults and children. Increased health issues would require easy access to health care services which these people do not have (See Table 13).

Table 5. Consumption Categories

COMSUMPTION CATEGORY	2006*	2019*
Food and non-alcoholic beverages	36.3	31.0
Alcoholic beverages, cigarette and tobacco	5.6	5.0
Clothing and footwear	4.6	3.3
Housing and rent	31.1	35.2
Furniture, houses appliances and home care services	4.1	4.6
Health	1.6	1.6
Transportation	5.5	6.4
Communication	3.9	3.6
Entertainment and culture	1.1	1.4
Educational services	0.4	0.4
Restaurant and hotels	3.2	4.9
Various good and services	2.4	2.7
*%		

Moreover, it is found in the data that more than 4% of the poor people do not own a refrigerator and almost 7% of these people do not have a washing machine as of year 2019 (See Table 6 below).

Table 6. Assets

ASSETS	2006*	2019*
Computer	1.32	7.39
Dishwasher	1.16	22.79
Refrigerator	87.62	95.69
Washer	45.26	92.81
Mobile Phone	62.09	95.89
Microwave	0.39	4.52
Bike	1.93	3.9
Car	2.9	13.15
Television	92.46	65.71
A/C	0.97	19.1
*%		

1.7. ECONOMIC ENVIRONMENT

In order to have a better understanding of the economic environment of poor people their financial behavior and home and land ownership behavior are going to be covered in this section.

1.7.1. Banking and Savings

On the one hand, when you have a tight budget to manage and you can barely afford food and shelter it might be hard to save. On the other hand, you may hold

onto your savings instead of having in a bank account because of several reasons such as trust or not enough interest rate. In this section, the credit card information and savings information are going to be covered. It should be mentioned that while this information unavailable in 2006 questionnaire it is available for 2019.

Table 7. Credit Card

CREDIT CARD	2019*
Yes	10.88
No	89.12
%	

As we can see from Table 7, only 10.88% of people who are in the low income group have credit cards. It can be interpreted as a good sign since having a credit card actually means you are borrowing money from the bank and spend the money you do not have yet and you eventually have to pay back at the end of the month. When you have a tight budget it is not very wise to get a loan while you can barely afford food and housing.

Table 8. Savings

SAVINGS	2019*
Real Estate (House, shop, land, field, etc.)	1.03
Gold	1.03
Bank account	0.62
Fund participation certificate	0.21
Investments in the business	0.21
Not Saving	95.89

Other	1.03
*%	

We can see the savings in Table 8 and as it can be foreseen almost 96% of the poor people are not saving.

1.7.2. Land Ownership and Home Ownership

Duflo and Banerjee (2007) mention that the poor tend to own land historically. In Turkey the picture we see is while 29.79% of the poor own land this situation had worsened in to 2019 and the number dropped to 17.45% (Table 8).

Table 9. Land Ownership

LAND OWNERSHIP	2006*	2019*
YES	29.79	17.45
NO	70.21	82.55
*%		

The situation for home ownership is even worse than land ownership. As we can see from Table 10 below the rate of home ownership for people was 70.6% in 2006 but it is down to 58.73% in 2019, which explains some part of the increased housing expenses.

Table 10. Home Ownership

HOME OWNERSHIP	2006*	2019*
Owns	70.60	58.73
Tenant	19.34	25.46
Lodging	0.19	0.41
Doesn't own but doesn't pay rent	9.86	15.40
*%		

1.8. INFRASTRUCTURE

In this section access of the poor people to some necessities such as tap water, electricity, internet, health facilities, shopping centers, transportation, banking and postal services are going to be examined. Since these are the services mostly provided by government in this part of the paper we are going to see what kind of sources and utilities administered by the government to the poor people. Even though this kind of information do not necessarily enclose direct behavioral pattern of poor people, it has immense importance to ensure the future behavioral pattern of the poor and their children.

1.8.1. Electricity, Tap Water, and Internet

It was reported by TURKSTAT that all people who were surveyed in 2006 had electricity, hence the questionnaire did not have that information for 2019. On the other hand, as we can see from Table 11 while there is considerable amount of improvement in tap water access there is still people who do not have access to tap water. This means that they have either to carry the clean water to their home or to be delivered. While the first option is time consuming, the second option might be very costly.

Table 11. Tap Water

TAP WATER	2006*	2019*
YES	23.40	99.18
NO	76.60	0.82

Another important utility of the modern age is the internet. It is in every aspects of our lives. While some of us cannot think of a life without it, as we can see from the Table 12 below there are still a lot of people who do not have access to internet. To be precise 71.46% of the poor people in Turkey do not have access to the internet. Repercussions of not having access to the internet for kids in today's age considering they can spend very little on education are going to be enormous.

Table 12. Internet

INTERNET	2006*	2019*
YES	0	28.54
NO	100.00	71.46
*%		

1.8.2. Easy Access to the Health, Banking Services, Postal Services, Grocery Stores, Public Transportation and Public School

Health care services, banking services, postal services, shopping services, transportation and schooling have deniable importance for all of us. While this is the case, it is more important to have easy access to these services for poor

people since they have limited resources and private sector options are not really an affordable option for them.

In the tables below we have the information for each of these services for the accessibility levels of very easy, easy, medium, difficult and very difficult. Tables only have the information for the year of 2019 because in 2006 the survey questionnaire did not have these questions.

As we can see from Table 13, it is not easy for 65.5% of the poor people to access to a health center. Considering that health is one of the most important and indispensable aspect of life it is needless to say that health services for poor people should be improved.

Table 13. Health Center Services

Easy access to Health Center Services due to the location of the residence	2019*
Very easy	5.13
Easy	29.36
Medium	14.37
Difficult	39.63
Very Difficult	11.50
*%	

Table 14 shows how easy access to primary school services due to the location of the residence for poor people. A similar pattern arises for the public school services with accessibility of health services. For most of the poor people it is not easy to access to primary school services.

Table 14. Primary School Services

Easy access to Primary School Services due to the location of the residence	2019*
Very easy	6.57
Easy	39.22
Medium	14.78
Difficult	29.77
Very Difficult	9.65
*%	

Moreover, Tables 16 shows the same pattern. To access daily necessities such as grocery stores, banking services, postal services, and public transportation is not easy for people who have low income. Therefore, spending more time and money for these kind of services mean that they have to spend less on their food consumption and housing. Studies show that nutrition deficiency effects our ability to work and produce. It has even more severe consequences for children and their success rate in school and in the future. Thus, it is not only important for poor people and their children to improve their condition by the government it is also important for the future of the country.

Table 15. Daily Shopping Services, Banking Services, Postal Services and Public Transportation Services

Easy access to Daily Shopping Services due to the location of the residence	2019*	Easy access to Banking Services due to the location of the residence	2019*	Easy access to Postal Services due to the location of the residence	2019*	Easy access to Public Transportation Services due to the location of the residence	2019*
Very Easy	5.13	Very easy	3.49	Very easy	3.49	Very easy	5.34
Easy	31.01	Easy	24.02	Easy	26.28	Easy	31.42
Medium	15.40	Medium	13.96	Medium	14.37	Medium	15.40
Difficult	37.17	Difficult	46.41	Difficult	44.15	Difficult	36.14
Very Difficult	11.29	Very Difficult	12.11	Very Difficult	11.70	Very Difficult	11.70
*%		*%		*%		*%	

1.9. DISCUSSION AND POLICY SUGGESTIONS

Poverty is a well-studied yet not solved on the contrary a growing problem of the humanity. Hence it could not have been solved by Neo-classical economists yet it is necessary to look from another perspective. Consequently, behavioral economists started to study poverty issue. Thus, in this paper I have tried to argue and exhibit the behavioral patterns of poor people in Turkey.

For this purpose, I used the Household Budget Survey for the years of 2006 and 2019 to investigate the demographics, the money earning methods, the way of spending the money, economic environment and the infrastructural conditions of the poor people in Turkey. While it is important to examine the demographics, money earning methods, the way spending the money, and economic environment of poor people in order to reveal behavioral patterns of poor people; it is also important to see their infrastructural conditions of the poor people to

improve their current and future situations. That said, it is important for the future of their children and hence the country.

This paper not only contributes the behavioral patterns of the poor it also contributes that lack of specialization and losing skilled agricultural, forestry and aquaculture workers to other industries are other problems that Turkey is facing with. Therefore, being aware of these problems youth should be oriented and educated to have higher skills in the work place via choice architecture and/or liberal orientation.

The term "Choice architecture" is mentioned by Cass Sunstein and Richard Thaler (2008) as a way to reduce biases brought on by bounded rationality. Choice architecture is a process of influencing choices of people and this concept was coined by Thaler and Sunstein (2008) and refers to the act of influencing choice by "organizing the context in which people make decisions" (Thaler et al., 2013, p. 428). There are 6 tools of choice architecture: Incentives, Understanding mappings, Defaults, Give feedback, expect error, and Structure complex choices. These 6 principles are going to be very useful in order to orientate choices of people. Additionally, in the light of agricultural problems such as global warming and lack of water losing skilled agriculture workers should be avoided by making working in agriculture more preferable.

Moreover, health centers, public schools, public transportation, daily shopping, banking, and postal services should be made more accessible. Medical services such as vaccinations and treatment for common illnesses are provided by health care centers. Since, it is not possible for economically disadvantage people to afford private healthcare, as it can be assumed public health facilities are their main source of healthcare. Low-income family's quality of life and well-being can be considerably improved by having easy access to public healthcare services.

People with limited financial resources need affordable and dependable public transportation. It makes it possible for them to get to work, go to school, get to

medical appointments, and take part of community events. Absence of proper transportation choices will cause low-income individuals to encounter obstacles to work, education and to reach basic services; and consequently this will cause them to be trapped in poverty.

Availability of shopping alternatives and accessibility of affordable and nutritious food options in economically challenged communities can help low-income individuals to improve their well-beings and to avoid diet-related health issues.

As we saw in Table 14, 71.46% of the low-income individuals do not have internet access. Since, accessing digital banking and digital communication options are hard for them, having easy access to banking services and postal services become crucial for them. Easy access to banking services is necessary for economic empowerment and financial inclusion. Being able to access banking services easily would allow people to manage their money and open saving accounts. Engaging in economic activities may promote financial stability among economically disadvantaged people and help them to break the poverty cycle. Also, having easy access to postal services allows them to stay connected and access necessary services such as paying bills, receiving and sending important documents.

Since education might be a pathway to upward mobility, providing equal and easy access to education is another crucial issue. Receiving a quality education will help children to be equipped with different skills and knowledge, and support them academically. Schools are not only places for education, they are also important for socializing. Plus, proper nutrition and food can be provided for economically disadvantaged young people in schools.

Another key point would be making daycare services free of charge for the low-income group. This would allow parents to work more and earn more money. Furthermore, internet services should be provided for the low-income group. Importantly, housing prices should be controlled. Also, the low-income group

should be provided with food stamps. Lastly, free vocational training opportunities should increase for under-skilled people.

Additionally, it is a fact that as people get older their disadvantages increase therefore it can be deduced that people should save more in their youth. According to the life-cycle theory of saving households are expected to solve an optimization problem for each period of their lives and to decide how much to spend and how much to save accordingly, this is based on the assumption that households wish to smooth consumption throughout the course of their lives.

To remedy this issue there is a tool called Save More Tomorrow (SMT) invented by two behavioral economists Richard H. Thaler and Scholomo Benartzi (2004) to encourage retirement savings and this tool should be used more by the Turkish Government. Although there is an auto-enrollment pension system for government workers in use in Turkey that has started at the beginning of 2017 for the people who are under the age of 45. Thus, the government should give more financial incentives and expand the implementations of programs such as this one for workers other than the government workers and the age limit should be higher.

When we look the gender percentage of poor people in Turkey although there is a decrease at the female proportion of the poor we see that female proportion is still maintaining a higher proportion than the male population. When implementing policies in order to decrease poverty and increase welfare among country, the main purpose of the government should be to favor women. Data shows us it is necessary when implementing effective regulations that are going to be used in order to decrease poverty; considering that promoting gender equality and diversity have significant improvement effects on organizations, institutions, and the overall economy (Profeta, P. 2017). Also, reducing gender equality and raising the status of women and reducing gender inequality may result in stronger macroeconomic stability and growth rates (Stotsky J. G. 2006).

While it is important to empower women in every level, women with low-income especially should be supported. Since it is a cultural norm for women to take care of the children and daily routine such as cleaning and cooking, being in poverty increases the burden of unpaid time for women. Thus, micro-financing and/or micro-crediting are methods that the Turkish government uses to encourage women for starting new jobs. However, the ongoing policies are hardly enough; hence, more economic policies should be implemented in terms of decreasing the gender inequality in the low income group.

Overall, economically disadvantaged people in Turkey exhibit similar economic behavioral patterns with poor people in high-income countries such as USA (Bertrand et. al., 2004) and low-income countries (Banerjee and Duflo, 2007; Anand and Lea, 2011).

In conclusion, regardless of their socio-economic status, providing these facilities and opportunities to low-income individuals will reduce the inequality gap by promoting equal opportunities, empower them and help them to break the poverty cycle.

1.10. CONCLUSION AND IDEAS FOR THE FUTURE STUDIES

In this study, a snapshot of the living arrangements of the low-income group of people in Turkey have been investigated by using a Cross Section Analysis for 2006 and 2019 with Household Budget Survey Data. It has been concluded that low-income people exhibits common economic behavioral patterns.

Economically disadvantaged people in Turkey have very limited savings since they have to use their resources for immediate expenses. They also rely on cash-based transactions rather than using credit cards as a result of limited access to banking services. Thus, it can be concluded that they do not participate in the formal financial system.

As a consequence of financial constraints, low-income people spend a significant proportion of their income to their meet basic needs such as housing and food. As a result of spending a high portion of their income to necessities, they can spend very little for health, education, and entertainment purposes.

Scarce resources are limiting these people to access quality education, training and health opportunities. Lack of health and well-being and skill development result in having unskilled jobs locking them into cycle of poverty.

Hence, there is still a large room to make people's lives and therefore the future of the country better. Thus, several policy suggestions have been made such as how to increase retirement savings, how to include more women in workplace, and how to direct youth in mastering important and necessary skills.

For future studies it can be suggested that to compare Turkey with economically similar countries to see if the economically disadvantaged people have the same patterns as they do in Turkey. In another paper it would be a great addition to the literature to compare the lowest income level group of people with higher income level groups to see how their behavioral patterns differ.

CHAPTER 2

BEHAVIORAL INSIGHTS TO THE CENTRAL BANK OF THE REPUBLIC OF TURKEY'S INFLATION TARGETING POLICY

ABSTRACT

The purpose of this study is to analyze the effect of expectations on inflation rate and examine the Central Bank of the Republic of Turkey (CBRT)'s inflation targeting policy to see if their current inflation targeting policy and CBRT's behavior of implementing this inflation target are rational. For this purpose I will use a regression analysis by employing Annual Change in Consumer Price Index (ACPI) as the dependent variable and Expectation of Monthly CPI for the Current Month (eMCPI), Expectation of Annual CPI by the End of Current Year (eACPI), and Real Sector Confidence Index (RSCI), as independent variables.

The source for Annual Change in Consumer Price Index (ACPI) is the CBRT website; and for Real Sector Confidence Index (RSCI) the source is Turkish Statistical Institute (TURKSTAT) while Expectation of Monthly CPI for the Current Month (eMCPI) and Expectation of Annual CPI by the End of Current Year (eACPI), are from The Survey of Market Participants, which is a survey that CBRT conducts since August 2001.

By using linear regression model, it has shown that the CBRT should consider expectations of the market while determining its inflation target. Since, it is obvious that currently this is not the case I conclude that this behavior is irrational on institutional level and argue that it is a result of some Behavioral Economics Concepts such as Availability Heuristic, Representativeness Bias, Status Quo Bias, Loss Aversion, Overconfidence, Confirmation Bias, and Anchoring and Adjustment.

2.1. INTRODUCTION

Since the 1970s, Behavioral Economics has started to find its way around conventional/mainstream economics. While it has started to impress some of the economists with microeconomic aspect to it, nowadays macroeconomic aspect to the behavioral economics has started to catch growing attention. There is no doubt when psychological insights adopted into marketing, finance, and the economy bring undeniably remarkable results.

The paradigm of "homo-economicus" has shattered for a while now. Even though we still continue to teach Conventional Economics in classrooms, everyone-including the Neo-classical economists-accepts that people are not rational. The point is to use this information to serve and benefit the human race. With this purpose in mind, it is inevitable to discuss and argue the in-use/ongoing methods of institutions and governments to have a better economic environment.

Thus, the purpose of this study is to provide a behavioral economics approach to the monetary policy and argue that if the Central Bank of the Republic of Turkey replace their inflation targeting method with a behavioral economics inflation targeting method the aimed and achieved results are going to be more accurate in a comparison with the current results.

To achieve this goal, first of all, a brief history of the Central Bank of the Republic of Turkey is going to be included. Secondly, Inflation Targeting is going to be defined and the implication of Inflation Targeting in Turkey is going to be explained as well as the other countries that adopted this method. Thirdly, basic behavioral economics concepts that are considered helpful in terms of monetary policy, central banks, and inflation targeting are going to be described. Then, data and analysis are going to be explained with derived results, and lastly conclusion and discussion will be included.

2.2. A BRIEF HISTORY OF THE CENTRAL BANK OF THE REPUBLIC OF TURKEY

After the WWI, the need to establish a central bank in Turkey was fatal in order to issue money, formulate monetary policies, and support the political independence with economic independence. The idea of having a central bank first issued at İzmir Economic Congress in 1923; and in 1927, a draft bill was submitted and accepted that allows to establish a national state bank. The Central Bank of the Republic of Turkey (CBRT) was found officially on 11 June 1930 after exchanging views with other countries' central banks such as Italy and Netherlands.

Duties and responsibilities of CBRT as follows:
1. Maintaining the price stability,
2. Maintaining the financial stability,
3. Designing and implementing the exchange rate regime,
4. Printing and issuing the banknotes of the national currency,
5. Establishing the securities, settlement systems and payment systems.

In order to maintain price stability central banks use a myriad of monetary policy tools such as open market operations, reserve requirement, discount rate and interest rate on excess reserves. In addition to these four tools central banks also use another modern tool called 'inflation targeting'.

2.3. INFLATION TARGETING

Inflation targeting is one of the tools that central banks use to maintain the price stability. It has been used by central banks since 1970s after the collapse of the Bretton Woods System. The first central banks that used the inflation targeting policy were the central banks of Germany and Switzerland; and during the 1990s more central banks of developed countries adopted the inflation targeting such as New Zealand, Canada, the United Kingdom, Sweden, Finland, Australia, Spain and Israel (Bernanke & Mishkin, 1997).

The intuition behind the inflation targeting tool being adopted by the developed countries first is that they need to give a message (signaling) to their citizens that inflation is not zero so their economy will continue to grow; therefore, people would continue to produce because they would know that they can sell their products from a higher price in the future. Since they continue to produce they would hire more people, and thus, the unemployment rate would decrease. It, also, derives the consumer demand as well. Knowing that prices will be higher in the future people try to make their purchases before prices went higher.

According to Mishkin (2002), a genuine inflation targeting regime consists of five components: (1) the publication of inflation targets, (2) a commitment on the part of the central bank to price stability as its primary objective, (3) the use of a wide variety of information to formulate monetary policy, (4) increased transparency through communication with the general public about the central bank's goals and policies, and (5) central bank accountability for price stability.

After seeing its success, emerging countries such as Czech Republic and Korea (1998), Colombia, Chile and Brazil (1999), Thailand and South Africa (2000), Mexico and Hungary (2001), Philippines and Peru (2002) and finally in 2006 Turkey have started to use inflation targeting strategy (Martinez 2008).

2.3.1. Inflation Targeting in Turkey

In Martinez's study it is mentioned that Turkey has started to use inflation targeting in 2006 (Martinez, 2008). While it is true in a sense, Turkey has started to use inflation targeting in 2002. After 2001 economic crisis between the periods of 2002-2005 the CBRT had used inflation targeting implicitly. After 2006, it has started to use inflation targeting explicitly.

In Table 16 and Figure 1 (below), we see the comparison of Turkey's target inflation and the inflation rate in real life. The CBRT has an uncertainty band of

2(+/-) points around the target inflation. As we can see from Table 16 and Figure 1 below, during the twenty year period between 2002 and 2022 even with an uncertainty band the CBRT could not make the inflation target most of the time.

Table 16. Inflation Target, Inflation Rate, Difference

Year	Target	Realization	Difference
2002	35	29,7	-5,3
2003	20	18,4	-1,6
2004	12	9,3	2,7
2005	8	7,7	0,3
2006	5	9,7	-4,7
2007	4	8,4	-4,4
2008	4	10,1	6,1
2009	7,5	6,5	-1
2010	6,5	6,4	-0,1
2011	5,5	10,4	-4,9
2012	5	6,2	1,2
2013	5	7,4	2,4
2014	5	8,2	3,2
2015	5	8,8	3,8
2016	5	8,5	3,5
2017	5	11,92	6,92
2018	5	20,3	15,3
2019	5	11,84	6,84
2020	5	14,6	9,6
2021	5	36,08	31,08
2022	5	64,27	59,27
2023	5	-	-
2024	5	-	-
2025	5	-	-

Source: CBRT Website (Accessed on 06.03.2023)

Figure 1. Annual Inflation Target, Inflation in Turkey and Difference
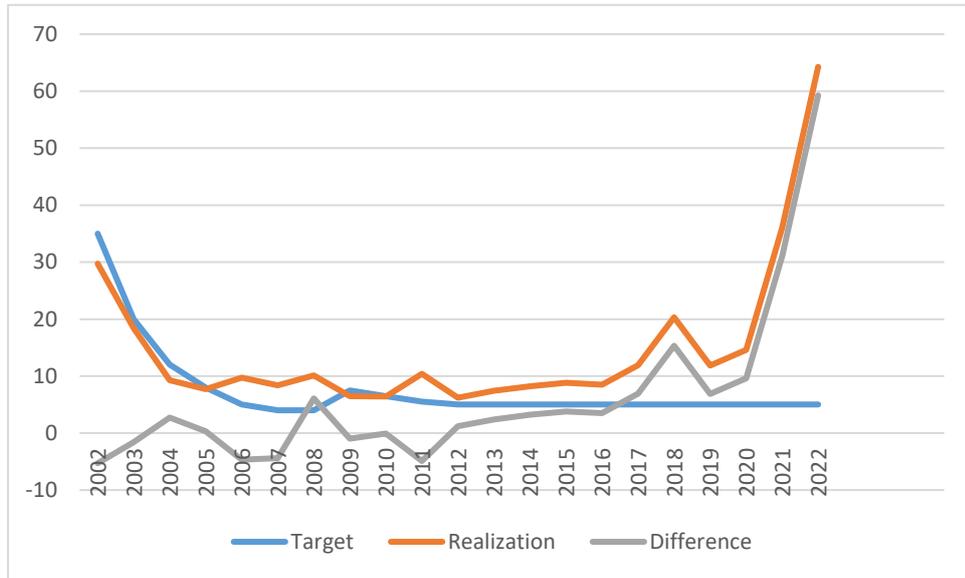
Source: CBRT Website

As Figure 1 shows the difference between the inflation rate and target inflation has increased immensely since 2017 and it reached sky-high values over the past few years. This significant difference between the target inflation and inflation rates indicates that the CBRT is facing an effective monetary policy challenge to control inflation. A large deviation from the target also implies structural issues and macroeconomic imbalances within the economy.

Having a large difference between the desired target and inflation rate generates uncertainty in the economy, causes consumer and investor confidence in the economy to drop, brings unstable economic conditions, and reduces the credibility of the CBRT. Since, in order to implement monetary policies it is crucial to have credibility for a central bank. Otherwise, it will have adverse effects on overall economic stability and expectations.

2.4. BASIC BEHAVIORAL ECONOMICS AND MONETARY POLICY

In this section, I argue that since the workers of central banks are human it is unavoidable for them to make mistakes. Certainly, the CBRT is no exception. In

order to persuade to use not neoclassical but behavioral economics methods in terms of inflation targeting, firstly I will explain some of the behavioral economics terminology and then I will explain how they can be related to behavior of monetary policy making.

Daniel Kahneman, in his book Thinking, Fast and Slow (2011), explains that algorithms are more successful than human beings when it comes to making decisions or solving serious problems (i.e. hiring a person). Kahneman divides human mind/brain into two parts as System I and System II. Once we are using System I our brain makes short cuts in other words we use heuristics when we are making our decisions. Heuristics take action when we decide in the blink of an eye, we think without actually thinking. We use System I 98% of the time; and, it is automatic and fast. System II, on the other hand, is slow but more rational, logical, and skeptical. Unfortunately, we use System II only 2% of the time. Since we are using 'lazy' part of our brain most of the time (System I) we ought to make mistakes or so-called irrational choices (Kahneman, 2011, pp. 223-234).

Considering that institutions and co-operations consist of human beings, it is quite acceptable and predictable that however the people are smart or experts there will be irrational decisions, and therefore mistakes will be made. In order to avoid this situation behavioral methods should be used by these institutions and thus, central banks should use behavioral methods when they are making monetary policy decisions in order to promote monetary and financial stability.

2.5. BEHAVIORAL ECONOMICS CONCEPTS FOR MONETARY POLICY

There are numerous biases and heuristics in decision-making have been identified by behavioral science. Since it is obviously beyond the scope of this study to include all the Behavioral Economics Concepts I will only explain briefly the ones that are helpful in explaining the monetary policy.

Following biases/heuristics are explained in further detail below: availability bias/heuristic, representativeness bias/heuristic, status quo bias, loss aversion, confirmation bias, overconfidence bias, anchoring and adjustment heuristic. It is also demonstrated how these biases/heuristics are associated with the CBRT's inflation targeting policy implication.

2.5.1. Availability Bias/Heuristic

Availability Bias stems from tendency of human beings to use System I more than System II in Kahneman's classification. It simply means that we lean toward using the information that comes to mind easily. Studies show that we make the mistake of overestimating and underestimating. When it comes to historical events we tend to overestimate the importance of some historical events just because they are most famous or recent than others even though they have less meaning and relevance to the current occurring. For example, after a natural disaster such as a hurricane, people purchase more insurance than before even if they did not experience the hurricane but the people they know did.

In terms of monetary policy and economics for that matter, some events such as Great Depression and break down of the Bretton Woods system are more likely to be remembered than others. Since, policy makers often need to make fast decisions in order to act fast it is inevitable for them to operate with availability bias.

In the CBRT's inflation targeting decision case it can be said that they are targeting the same ratio since 2012, which 5% because it was doable at first and very close the realization. While the target inflation rate has been 5% since 2012, the real inflation rate was 6.2% in 2012, 7.4% in 2013, 8.2% in 2014, 8.8% in 2015, 8.5% in 2016 and 11.92% in 2017. Although it got out of hands starting with 2018. The real inflation rate was 20.30% in 2018, 11.84% in 2019, 14.6% in 2020, 36.08% in 2021, and 64.27% in 2022 (see Table 16).

In availability bias respect, we can say that the policy makers in CBRT put themselves in a vicious circle by choosing the most recent and available inflation

target ratio because at first it was probable to reach that inflation target goal nevertheless they could not change even after the conditions change because they needed to signal to the market they are still hopeful that can make that goal.

2.5.2. Representativeness Bias/Heuristic (Subjective Probability Heuristics)

Representative Bias is reaching to a conclusion and judging the probability of an event even if it is uncertain by comparing recent or -what we think- similar events (Kahneman & Tversky, 1972). For example, if we know somebody from a foreign country or city we think that all people from that country or city will be like the person we know regardless of good features or the bad ones.

One possible example of representativeness bias in terms of economic policy is the IMF's attempt to make all the countries to apply the same economic policies for countries that are struggling with economic crisis. When they see that it is an economic crisis they believe that regardless of the different countries' different aspects or structural problems one solution is going to fit them all and all countries should follow the IMF's way. Hence, history thought us that one-size-fits-all solutions do not fix the problems of different countries as they are expected to. Thus, they have to be tailored according to a specific country's needs because there are a lot of different parameters when we are dealing with different countries.

In terms of inflation targeting in Turkey, the CBRT policy makers falling into the representative bias because when they first targeted a 5% inflation rate in 2012 the outcome was 6.2%, which is very close to the targeted rate for Turkey; and this case represents that when they target a lower rate of inflation than the realization they can still signal the market towards a lower inflation rate than the real inflation rate.

2.5.3. Status Quo Bias

People tend to stick to their choices instead of taking new actions. This is the reason why we do not cancel some of our memberships to some magazines even

though we do not read them. This lack of action is what salesmen lean on because they know once you are hooked it is unlikely that you are going to cancel that purchase or membership.

There is a saying in English 'If it is not broken, do not try to fix it.', but what we do is we do not try to fix anything even if it is broken in terms of implementing the inflation targeting policy in Turkey. Kahneman and Tversky (1982) states that even if we know the current outcome is bad we do not take a new action because we are afraid that the new outcome will be worse than the current situation.

Since policy makers try to maintain their credibility it is more likely for them to take action under *status quo bias.* Because changing economic policies every so often cause a damage in their credibility. Also, since there is a myriad of parameters in terms of economic policy making decisions it is often not certain whether a better result than previous set of actions is going to be gained or not.

In CBRT's situation we see that they sticked to their guns for the same inflation target rate and since the 5% inflation target has been the status quo for a very long while and they cannot let go even though it is obvious even from a non-scientific eye that this goal of 5% inflation is not reachable in the near future.

2.5.4. Loss Aversion

Loss aversion is one of the reasons of *status quo bias.* We choose to stay put because we are afraid that new outcomes will not be more satisfactory than the current outcomes. Also, studies show that people tend to overestimate their losses rather than gains (Kahneman & Tversky, 1979).

Each of every action and decision in terms of economics have different consequences. Policy makers want to avoid losses and therefore they tend to stay unchanged in their current position or are late to take the right action.

Therefore, the CBRT is not adjusting the inflation target accordingly to the current economic conditions of the country because they might think that they are going to lose their credibility in the public eye.

2.5.5. Confirmation Bias

Confirmation bias is holding onto the information that confirms our beliefs and thoughts more than the information that challenges or contradicts them. P.C. Wason (1960), a cognitive psychologist, shows that young adults tend to search out or interpret the facts in a way that matches their current thoughts and/or preconceptions even after given the correct facts or information. This phenomenon explains how political polarization is getting deeper with increasing social media interactions. Whatever the ideas or information are we are looking for out there for us to find and it is easier to find not only the information but the people who think just like us as well on social media platforms.

Therefore, whatever the reason is, we always see experts want to show the public that they are successful and made the right decisions in the past especially if their duty as important as the country's economy. Hence, they continue to keep their decisions such as inflation targeting at the rate they decided before even though it is not possible to reach that goal in the foreseeable future. Mostly they try to embrace and focus on the hope and data showing that the target inflation is still doable and achievable. Thus, this skewed perspective causes overconfidence, which is going to be explained next.

2.5.6. Overconfidence Bias

By definition, overconfidence is a tendency to make judgments about ourselves and our abilities that are misleading and untrue. According to Moore and Healy (2008), one tends to overestimate their talent and intellect. Additionally, one believes that they are better than average people (Moore & Healy, 2008). Since they are more educated and experienced it is expected people to be more rational at the professional level. Yet, studies show that even executive-level professionals tend to show behavioral biases. Even though more experienced people show less overconfidence on average they are still significantly overconfident (Sandroni & Squintani, 2007; Menkhoff et all., 2013).

Considering that central bank workers are human-beings even though they are presumably smartest, best-educated, and more experienced than more people in their fields it is safe to say that despite the fact that they have all these qualities, just because they possess all these characteristics it will not make them to give rational choices and decisions all the time. On the contrary, this might make them overestimate their abilities and hence they will be more overconfident.

2.5.7. Anchoring and Adjustment Heuristic

Anchoring means that when people were given a particular reference point they unintentionally place their next decision according to that number (Tversky & Kahneman, 1974). In other words, we adjust ourselves according to a given parameter. For example, if we were asked to guess the price of a certain type of merchandise after writing down our ages we start to take our age as an anchoring point and we adjust our guesses according to that number.

Mishkin (2002) argues that to have a reasonable and operational price stability inflation number should be between zero and 3 percent and mentions that all inflation targeters have chosen the rates between 1 and 3 percent by 2002. Having some inflation is needed in the economy to prolong the production process and other economic activities. On the other hand, if it is a high inflation experiencing country they use the inflation rate and use that as an anchor and aim to lower their inflation and adjust their expectations according to this number.

As a matter of fact, what the CBRT is trying to do is anchor and adjust the inflation expectation of the public by setting a 5% inflation target and they are hoping if they still signal the same inflation target even if it is not possible to reach the exact goal they think the public would adjust their expectation to this goal and they are trying to use this 5% target as an anchor. However, in this case they fall into their own anchoring and this situation has become a trap for the CBRT itself.

2.6. THE DATA, METHOD, AND MODEL

Since 2001, the CBRT conducts the Survey of Market Participants which aims to monitor the expectations of economic agents on various economic variables with this survey. To show the CBRT does not need to go very far to see what went wrong, the survey data which is conducted by the CBRT itself is going to be used in this study.

The Survey of Market Participants was introduced to the public in August 2001 for the first time. The Survey had been conducted twice a month from August 2001 to December 2012, after January 2013 is has been started to issue once a month. Intend of the survey is to monitor the expectations of experts and decision makers from financial and real rectors. The data indicates consumer inflation rate, exchange rates, interest rates, current account balance and GDP growth rate. For the purpose of this study only the expectations on inflation rate are going to be used. To give a clearer idea to the reader, the questionnaire is included at the end of the paper as Appendix 1 (CBRT).

Also, it is worth mentioning that it does not seem coincidental for the CRBT to start conducting the Survey of Market Participants in August 2001 which right before it has started using the inflation targeting regime.

For the purpose of this study, a linear regression analysis will be used by employing Annual Change in Consumer Price Index (ACPI), and independent variables are Expectation of Monthly CPI for the Current Month (eMCPI), Expectation of Annual CPI by the End of Current Year (eACPI), Additionally, not only to increase the explained part of the dependent variable but also to see how the confidence of the real sector affect the Annual Change in Consumer Price Index the real sector confidence index (RSCI) is added to the model:

$$ACPI = \alpha(eMCPI) + \beta(eACPI) + \gamma\,(RSCI)$$

The data set covers monthly data for the time period from January 2013 to May 2022. In the model the dependent variable is Annual Change in Consumer Price Index (ACPI), and independent variables are Expectation of Monthly CPI for the Current Month (eMCPI), Expectation of Annual CPI by the End of Current Year (eACPI), and Real Sector Confidence Index (RSCI).

Table 17. Variable Information

Variables	Variable Definition	Source	Time Period	Type
ACPI	Annual Change in Consumer Price Index	CBRT Website	January 2013 and May 2022	Monthly
eACPI	Expectation of Annual CPI by the End of Current Year	CBRT Website		
eMCPI	Expectation of Monthly CPI for the Current Month	CBRT Website		
RSCI	Real Sector Confidence Index	TURKSTAT		

In this study, the confidence of the economic agents in the economy and the effect of expectations on the annual change in CPI is investigated. Expected results in this study are the presence of a positive relationship between the annual change in the CPI and the expectations and a negative relationship between the annual change in the CPI and the confidence of the reel sector in the economy (See Table 18).

Table 18. List of Hypotheses

Hypothesis List	
1	An increase in Expectation of Annual CPI by the End of Current Year causes an increase in Annual Change in Consumer Price Index
2	An increase Expectation of Monthly CPI for the Current Month causes an increase in Annual Change in Consumer Price Index
3	An increase Real Sector Confidence Index causes an decrease in Annual Change in Consumer Price Index

Figure 2 displays the Annual Change in Consumer Price Index (ACPI), Expectation of Monthly CPI for the Current Month (eMPCI), Expectation of Annual CPI by the End of Current Year (eACPI), and Real Sector Confidence Index (RSCI). As we can see from Figure 2 Annual Change in Consumer Price Index (ACPI) and Expectation of Annual CPI by the End of Current Year (eACPI) are quite parallel. Furthermore, it can be determined from the figure that Expectation of Monthly CPI for the Current Month (eMPCI) has a relationship with the Annual Change in Consumer Price Index (ACPI) as well.

Figure 2. Annual Change in Consumer Price Index (ACPI), Expectation of Monthly CPI for the Current Month (eMPCI), Expectation of Annual CPI by the End of Current Year (eACPI), and Real Sector Confidence Index (RSCI).
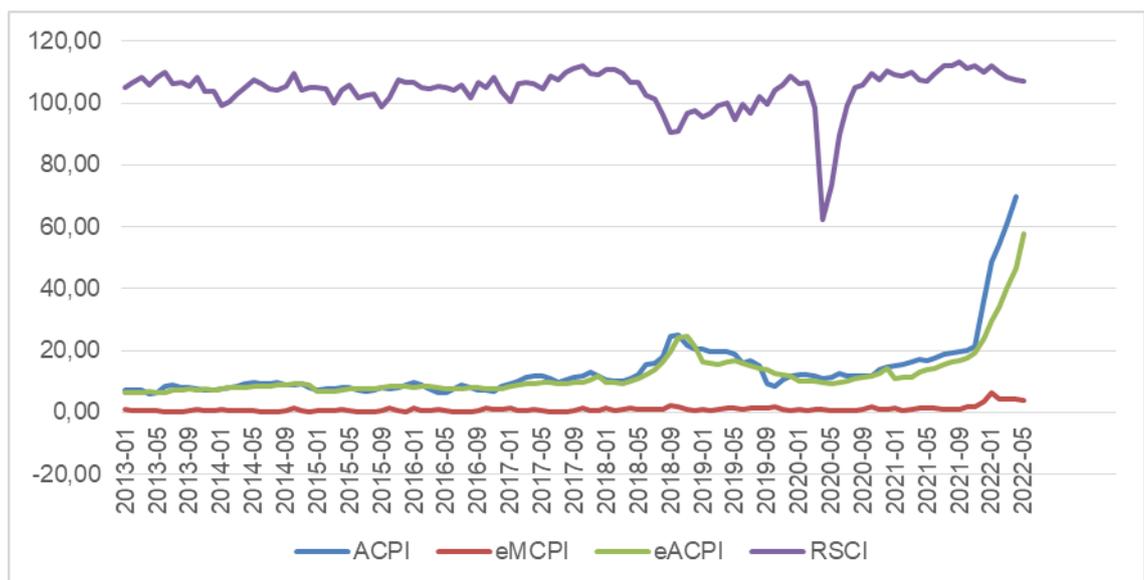
With this kind of time-series data it is important to see if the variables are stationary. Therefore, to check if there is unit root ADF test was employed and is was concluded that the variables are, in fact, stationary at level. Table 19 (below) shows the ADF test p-values and test statistics of each variable:

Table 19. Unit root test results

Variables	ADF Test p-value	Test Statistic
ACPI	0.0000	-10.060
Expectation of Monthly CPI for the Current Month (eMCPI)	0.0005	-4.292
Expectation of Annual CPI by the End of Current Year (eACPI)	0.0000	-12.493
RSCI	0.0014	-3.995

*Critical values are -3.506 at1%, -2.889 at 5% and -2.579 at 10%
Source: Own Calculations

Another common problem when working with time series data is multicollinearity, which means that there are high correlations among independent/predictor variables. It is crucial to address this issue since high correlations among independent variables lead unreliable and unstable results. In order to see if multicollinearity is an issue for the regression results Variance Inflation Factor (VIF) is calculated (Table 20 below).

Table 20. Variance Inflation Factor (VIF)

Variable	VIF	1/VIF
eMCPI	2.93	0.341355
eACPI	2.90	0.344495
RSCI	1.02	0.978672
Mean VIF	2.28	

As a rule of thumb, if VIF is equal to or below ten is not a cause of concern (Farrar and Glauber, 1967). As we can see from the Table 20 all VIF values are under ten; therefore, it can be concluded that multicollinearity among independent variables does not exists.

2.7. RESULTS

The purpose of this study is to show that the CBRT is making mistakes and acting irrational even though it has a very-well educated and clever staff and rulers since

they are human-beings not homo-economicus like they are expected to by Neo-classical economics. To remedy this issue my suggestion is to the CBRT accepting this fact and taking into account other tools such as the Survey they are conducting other than their calculations. This way, it would be more beneficial for them to build more trust in the market agents.

To show how it can be useful for the CBRT to use expectations in their inflation targeting policy to adjust the target according to expectations. For this purpose, I used the regression of expectations and confidence indices.

Table 21 below shows the regression output results. As we can see from the Table 21, all predictor variables Expectation of Monthly CPI for the Current Month (eMCPI), Expectation of Annaual CPI by the End of Current Year (eACPI), and Real Sector Confidence Index (RSCI) are statistically significant because their p-values equal 0 (zero).

Table 21. Regression Results

ACPI	Coef.	SE	t	p-value	95% lower bound	95% upper bound
eMCPI	2.196577	.4066796	5.40	0.000	1.390551	3.002602
eACPI	1.255258	.0561919	22.34	0.000	1.143888	1.366629
RSCI	-.032038	.0044557	-7.19	0.000	-.0408692	-.0232069

Source: Own Calculations

It is also useful to report that R-squared and Adjusted R-squared values for this regression are 0.9817 and 0.9812, accordingly; which means that the explanatory rate for this model is very satisfactory. When we look at the coefficients we see that as Expectation of Monthly CPI for the Current Month (eMCPI) and Expectation of Annual CPI by the End of Current Year (eACPI) Annual Change in Consumer Price Index (ACPI) increases as predicted. Also, when Real Sector

Confidence Index (RSCI) increases Annual Change in Consumer Price Index (ACPI) decreases, which is compatible with this study's prediction.

J.C. Fuhrer (2011) investigates the role of expectations on inflation dynamics in the U.S. and finds that inflation expectations play a significant role in U.S. inflation. He also finds that long-run expectations play a role as a key determinant of short-run expectations, therefore even though long-run expectations do not directly affect inflation they affect inflation indirectly via their influence on the short-run expectation.

J. M. Berk (2002) examines the European Union countries and shows that inflation expectations of individuals and the inflation rate have identical long-run features. According to Carlson and Parkin (1975), in order to reduce the expected rate of inflation, it is necessary to reduce the real rate of inflation. A reduction in the inflation and consequently in the expectations is only possible with the appreciation of the currency.

On the other hand, Bruin et. al. (2010) expectations might be shaped by the demographic characteristics of the individuals such as education level, gender, economic conditions, and financial literacy. Their findings suggest that individuals who are poorer, less educated, single, and female report higher inflation expectations.

Kılcı (2020) finds a strong causal link between the macro-financial indicators such as inflation, stock market index, and interest rates in Turkey for the period of 2012-2019. Demirel and Artan (2017) study 13 European Union countries and find a causality relationship between confidence level of the economic agents and some macroeconomic indicators such as inflation rate, consumption expenditures, and production. Kmumalo (2014) finds a negative relationship between inflation rate and business confidence in South Africa.

Thus, findings in this study suggest that inflation expectations have a significant role in shaping the actual inflation rates as it was concluded in J.C. Fuhrer (2011),

J. M. Berk (2002), Carlson and Parkin (1975) as well. Also, Real Sector Confidence Index and inflation rate relation result is compatible with Kılcı (2020), Demirel and Artan (2017), and Kmumalo (2014).

2.8. CONCLUSION AND DISCUSSION

Members of the CBRT are human beings and just like every one of human beings they carry cognitive biases however educated they are and expert they might be. In this study I tried to give behavioral economics insight to the CBRT's inflation targeting tool that is one of the monetary policy tools that has been in use since 2002.

In order to do so, first some brief historical information about the CBRT was introduced. Then, is was explained when the inflation targeting policy first introduced to the world and to Turkey. Thirdly, some cognitive biases and heuristics defined that is thought would be useful for the monetary policy and specifically to the CBRT's case. After giving the information about the CBRT, inflation targeting policy and related behavioral economic concepts and analysis was offered by using the Survey of Market Participants, which is a survey conducted by the CBRT itself since 2001.

Thus, following the analysis results, it can be concluded and suggested to the CBRT and other economic decision makers of the country that the CBRT should adjust their inflation target according to the expectations. This way it would increase their credibility leading a better and confidential economic environment rather than decrease their credibility.

In conclusion, it can be said that inflation is affected by expectations and confidence of the economic agents in the economy. Therefore, employing Behavioral Economics (BE) to the CBRT's policies mean that accepting the fact that the CBRT staff are only human beings and therefore they can make mistakes. Adding new perspectives and employing new methods only will increase the CBRT's credibility since it has a great deal of importance for the market and foreign investors to have a trustworthy economic environment and Central Bank.

Addition to Homes et al. (2017), which concludes that behavioral modeling can lead to less volatile inflation, this paper contributes that behavioral modeling also can lead to more accurate policy making. Since we learn from Kumar et al. (2015) inflation targeting does not anchor inflation expectations it is unnecessary to argue if expectations and inflation targeting otherwise related.

Furthermore, this study's conclusion is parallel to Brada et. al. (2015)'s paper which they investigated inflation targeting policy of the Czech Republic National Bank. In this paper, they investigate if forecasts are turn into policies and find that because of the reasons that can be explained with behavioral economics perspective it is not always the case.

In my opinion, the CBRT has currently fallen into the trap of Availability Heuristic, Representativeness Bias, Status Quo Bias, Loss Aversion, Overconfidence, Confirmation Bias, and Anchoring and Adjustment which are some of the many Behavioral Economics Concepts that are explained above.

The discussion made in this article is not exhaustive in any manner; instead, it concentrates on the biases that are both most plausible and for which there is some supporting data. To wit, there is still a great deal of opportunity for more investigation into the one mentioned in this study and other behavioral biases and how they affect monetary policy decisions.

For future studies, it can be suggested to see if other countries that employ inflation targeting policy have a similar situation that expectations and confidence of the economic agents affect the annual inflation rate. By doing so, it can be seen if it is the same for other countries as well.

CHAPTER 3

ANALYZING THE STATUS QUO BIAS DURING THE RECENT GLOBAL ECONOMIC CRISIS: THE CASE OF TURKEY

ABSTRACT

The recent Global Crisis is one of several economic crises that have occurred throughout human history, and it is not the last. Therefore, it is crucial to look into and comprehend its dynamics. In this approach, even if it is unlikely that a future economic crisis could be avoided, understanding the past might provide us with a roadmap on how to lessen its negative effects.

Thus, the purpose of this paper is to explore the "status quo bias" -one of the fundamental behavioral economics concepts- with the available macroeconomic data. The current state of the world economy has created an excellent chance for this idea to be analyzed and ensured that there are sufficient and pertinent inputs for this type of study.

This paper examines the relationship between consumption and income before and after the economic crisis that occurred after the Covid-19 pandemic in a chosen country specifically to analyze the "status quo bias."

Keywords: Status Quo Bias, Covid-19, pandemic, economic crisis.

3.1. INTRODUCTION

According to conventional economics, which is founded on rationality assumption, people are considered rational beings, or technically, Homo-economicus. Unfortunately, there is no such thing as Homo-economicus. The history of economic crises is a testament to how Conventional Economics (CE) has failed. If there is only one lesson history taught us about economics, it is that the conventional methods of Neo-Classical economics are not effective enough to avoid a crisis. Since the recent global crisis cannot be adequately explained by conventional economics, it is crucial to consider the situation from a different angle.

While CE considers humans as rational and utility-maximizing beings (or one might say beyond human beings) who adjust their expectations according to these two and make appropriate and well-structured decisions; Behavioral Economics (BE), on the other hand, accepts the fact that human beings, even if they are very well educated and experts in their fields, might be affected by their emotions and even a rainy day might defect their judgment.

The status quo bias is one of many Behavioral Economics concepts and simply put it means that people want to keep their situations as it is because it is familiar and has become comfortable being that way. The economic environment that came with the global crisis gives the opportunity to test how people want to keep their status quo economically.

For the purpose of testing the status quo bias, the effects of income, effective exchange rate, inflation rate, credit card spending, and the interest rate of credits on consumption are going to be investigated in this study. The motivation to use these independent variables comes from their direct effect via main channels on consumption.

Thus, to see how consumption is affected by income, effective exchange rate, inflation rate, credit card spending, and the interest rate of credits an Autoregressive Distributed Lag (ARDL) model is going to be conducted in this study. Applying this test supports that income, effective exchange rate effective, inflation rate, credit card spending, and the interest rate of credits have a significant long-run effect on consumption. Therefore, it can be concluded that status quo bias is in effect for Turkish people.

3.2. THEORETICAL FRAMEWORK

According to Thaler and Sunstein (2008:34), the term 'status quo bias' was first used by Samuelson and Zeckhauser (1988). This principle, also used as the default option for some situations, says that the current situation, namely the initial state, is preferable to a new and/or different situation.

In other words, this expression that we use as a "comfort zone" in daily language means that it is not so easy to give up on something because of its familiarity. This cognitive bias is the reason why bad marriages cannot be terminated and it is difficult to get a new job despite being dissatisfied with the current working environment.

According to Samuelson and Zeckhauser (1988), there is a status quo alternative for most of the real decisions in contrast to most economic texts and one tend to stick with one's current decision and keep one's previous status. Decision-making experiments reveal that individuals maintain their status quo bias.

Experiments on political elections, organ donations, and school choices show that individuals stick with the default option (Xiong, 2022). In their study Kang et. al. (2018) find that incumbency affects local elections but not national elections for South Korea. Ortovela (2010) argues that and economic agent becomes more risk-averse when a status quo alternative is present than she/he would be

otherwise. Dean et. al. (2017) shows that when people have larger set of choices rather than limited choices they are more likely to maintain their default option/status quo.

One of the most vital examples in this regard is the example of organ donation. In their study, Johnson and Goldstein (2003) how organ donor behavior can be affected by using the default option. It is shown that the amount of organ donation has increased drastically after asking people to follow extra steps if they don't want to be an organ donor when obtaining a driver's license to individuals instead of asking if they want to donate their organs in case of death while they are filling out the necessary forms. This is simply because people tend to choose what is easy and available. In the organ donation case, people just did not want to take extra steps and chose not to donate their organs. In other words, people just chose to stay in the status quo and did not change what was given/the default option (Thaler and Sunstein, 2008: 174-184).

While it is unfortunate to have economic disadvantages such as a high inflation rate, low employment rate, and to have to deal with drastically depreciated currency, an economic crisis comes with an undeniably important chance of testing some behavioral economics concepts such as status quo bias like it is going to be studied in this paper.

Since this paper will employ macroeconomic data, the analysis will reflect the whole country rather than an experiment that is only a demonstration of a sample of the population.

3.3. COUNTRY SELECTION: WHY TURKEY? TURKEY AND THE GLOBAL CRISIS

According to Baker and others, the recent Economic Crisis is worse than the 2008-09 Financial Crisis and very similar to the 1929-33 Great Depression (Baker, et al., 2020). As we can see from Figure 3 below Volatility Index for the

beginning of the year 2020 is almost as high as it was during the 2008-09 financial crisis.

Figure 3. The CBEO Volatility Index
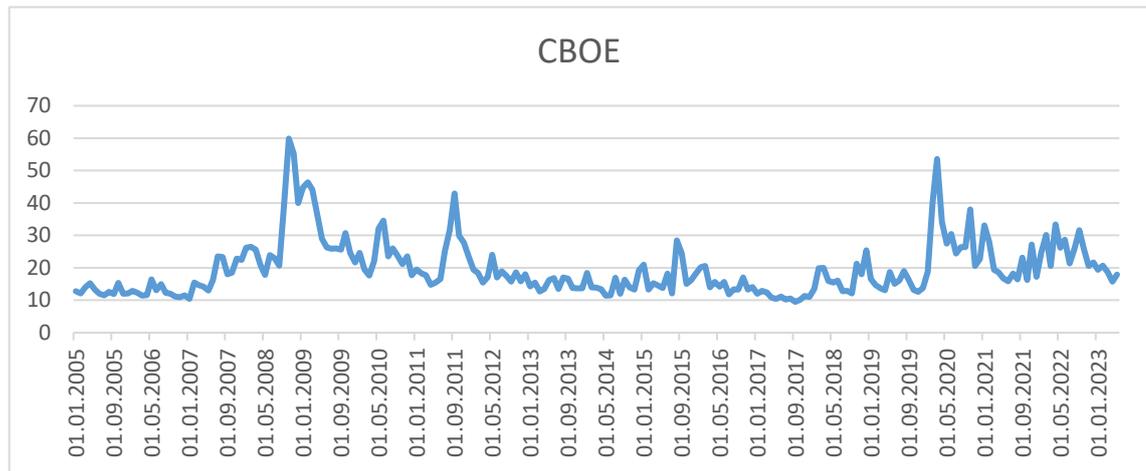
Source: Volatility S&P Historical Data, <u>investing.com</u> (11.06.2023)

The Chicago Board Options Exchange (CBOE) Volatility Index or the VIX is a measure of the volatility of the S&P 500 Index. Its origin traces back to the work of Menachem Brenner and Dan Galai (Brenner and Galai, 1989: 61-65). Its importance comes from its feature of measuring the level of stress or fear in the stock market. Also, it is used to make predictions since it is a forward-looking indicator. While a high VIX reading means that investors expect the stock market to be highly volatile, a low reading of VIX indicates that investors expect the stock market to be stable.

Since the VIX is almost as high as the 2008-09 period during the year of 2020 as shown in Figure 3, it is safe to say that the market conditions were very similar during the 2008 crisis and the recent economic crisis that started with the Covid-19 Pandemic.

China was the first country who the Covid-19 virus was identified; and the World Health Organization declared a pandemic in March 2020. Recently, with the

reputation of being the strictest country about the pandemic precautions China has removed the last bans as of 8 January 2023 and started to allow international flights. Yet, the whole world still lives in the aftermath of the pandemic that brought unusual and unfortunate economic conditions and therefore a deep economic crisis for a very big part of the world.

While the recent global health and economic crisis is crucially important for the whole world, it hit Turkey right after an unfortunate period in which the country was already in a currency crisis since the end of 2018. It is undeniable that other issues such as the refugee problem starting with occurrences in Syria in 2011 and the 2016 failed coup attempt had affected the Turkish economy adversely.

While during the previous crises 1994, 2001, and 2009 the Turkish economy shrank, asset values collapsed and output decreased severely, the 2018 crisis was a combination of low rates of growth, problems in debt repayments, decaying investment performance, rising unemployment, high inflation and the depreciation of Turkish Lira (Orhangazi & Yeldan, 2021). Since necessary structural reforms were not performed accurately the Covid-19 pandemic starting in 2020 has deepened the problems of the Turkish economy and caused people to see its fragility more clearly.

As of 2023, Turkey is still dealing with an immensely increased inflation rate, depreciated currency, current account deficit, an increased rate of unemployment, and low growth rates. While some of them are global problems that almost all of the countries around the world have to deal with, Turkey separates with a very high inflation rate from rest of the world. Since high inflation rates cause a decline in purchasing power of the population, Turkey makes a perfect candidate for a status quo bias analysis.

3.4. A BRIEF LOOK AT THE TURKISH ECONOMY

As it is mentioned above, the Turkish Economy has been affected by the recent crisis quite severely because it was already under a lot of pressure due to the conditions it is already in. To give a snapshot of the economic conditions in Turkey some macroeconomic indicators and related data are going to be mentioned and explained in this section.

Figure 4. Gross External Debt of Turkey
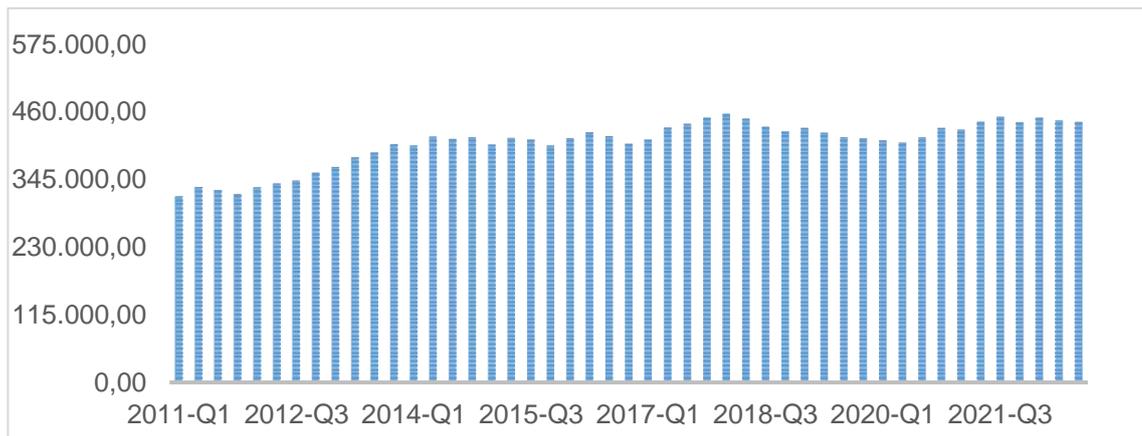
Source: Republic of Turkiye Ministry of Treasury and Finance (11.02.2023)

Figure 4 depicts the information about the gross external debt of Turkey for the period of 2011-2022. The volume of the gross external debt of a country is critical since high debt volume reduces the efficiency of the investment of that country even though it does not reduce the volume of the investment, especially for developing countries (Pattillo et al., 2002). A high volume of external debt also brings the problem of sustainability of the debt and this burden causes the country to face numerous challenges and increases its vulnerability (Loser, 2004). As we can see from Figure 4 Turkey's external debt has an increasing trend and it has reached 443 trillion Turkish Liras.

In Figure 5 US Dollar and Euro exchange rate for Turkish Lira is shown for the period of 2002-2023. At the end of 2022 USD/TRY was around 18.78 and EUR/TRY hit 20. Economics literature suggests that a depreciated currency might have mixed effects on the economy. While both Singh (2009) and Krugman and Taylor (1976) suggest that a depreciated currency will affect the economy negatively, Sun and Kim (2018) find different effects in the short-term, medium-term, and long-term. For the short run, they suggest an increase in industrial production, manufacturing, and employment; for the medium run they find depreciation inflationary since consumer price, producer price, import price, and export price all increase; and lastly, for the long run, they conclude that depreciation has a contractionary effect on the economy because of decreased personal consumption, consumer confidence, and stock price.

Figure 5. US Dollar and Euro Exchange Rates
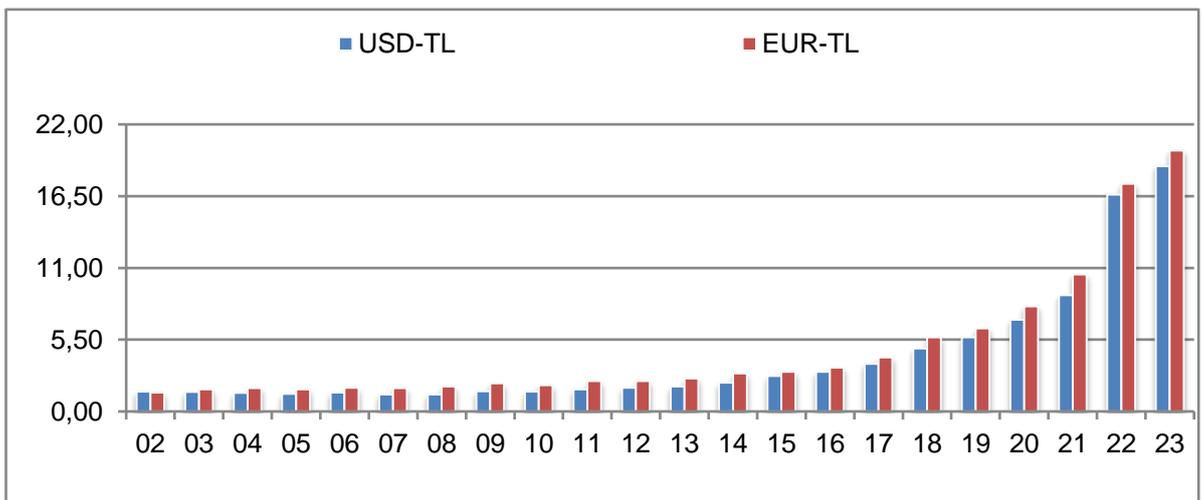
Source: CBRT (Accessed on 11.01.2023)

Additionally, according to Kandil et. al. (2007), if currency depreciation is anticipated then it has significant adverse effects such as contracted growth of

real output, decreased demand for investment and exports, and increased price inflation. On the other hand, if the exchange rate fluctuations are unanticipated then this affects the economy asymmetrically. When exchange rate fluctuations are unanticipated this causes output growth and growth of private consumption and investment to shrink even if export is growing.

Figure 6 displays the interest rate for personal bank loans for the period of 2002-2022. Personal loans can be used in order to compensate for the depreciation in their incomes because of the increased inflation. The lower interest rate on personal loans makes it easier to get loans and decreases the hesitation to get loans. As we can see in Figure 6 in 2020 interest rate on personal loans was as low as 15.78% as a result of the Turkish government's implemented policies during the Covid-19 pandemic.

Figure 6. Interest Rates for Personal Banks Loans
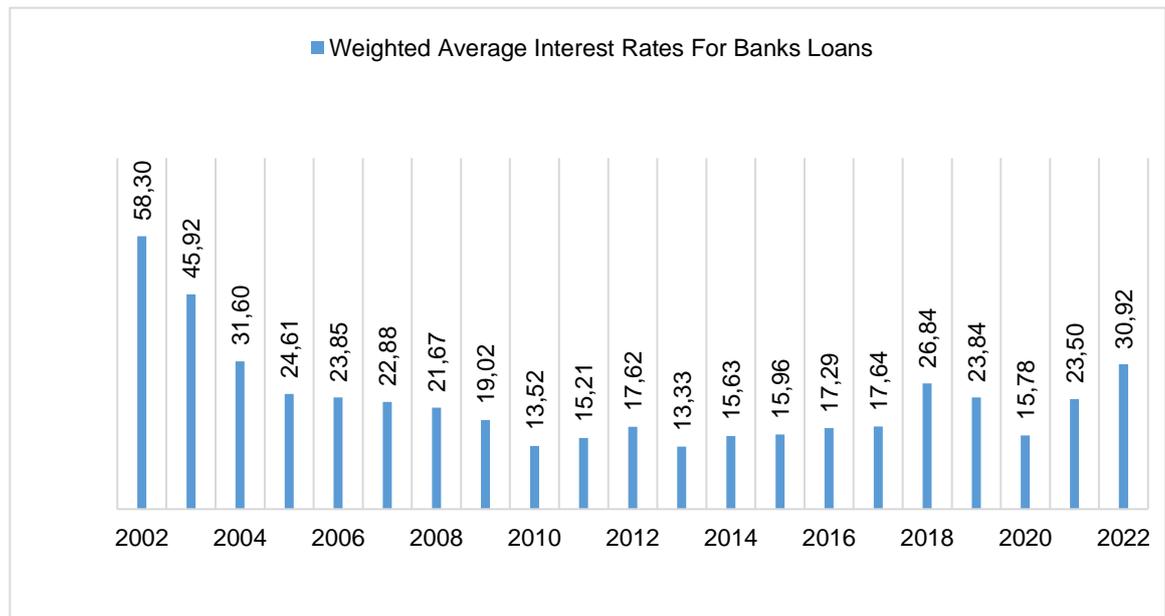
Source: CBRT (Accessed on 11.01.2023)

Since otherwise strict policies were implemented during the year 2020 such as lockdowns and curfews lots of people lost their jobs and a lot of businesses went

bankrupt. To ease the effects of these harsh circumstances of the pandemic the Turkish government decreased the interest rate on personal bank loans. However, it has arisen to 30.92% during 2022.

The inflation rate is presented in Figure 7 for the period of 2015-2022. The inflation rate is a measure of the rate at which the general level of prices for goods and services is rising and subsequently purchasing power is falling. Central banks and governments typically use the inflation rate as an indicator of the health of an economy. The inflation rate is typically measured using a price index, such as the Consumer Price Index (CPI) or the Producer Price Index (PPI). The inflation rate can be reported as a monthly, quarterly, or annual percentage change. Since the consumer's status quo bias is being tested, this study employs the CPI and the figure below shows the CPI monthly rates are reported.

As we can see from Figure 8 below Turkey is the country that has the highest quarterly inflation rate as of the 3rd quarter of 2022 among OECD countries with a rate of 81.1%. With this kind of high inflation rate, the problem is that the citizens of the country have to deal with is decreased purchasing power even though their nominal income is increasing. Thus, this brings up the question of how this kind of high inflation affects the relationship between consumption and income. Therefore, however, decreased purchasing power is an unfortunate situation for the population it is a valuable opportunity to test for a status quo bias.

Figure 7. Inflation Rate in other OECD Countries and Turkey
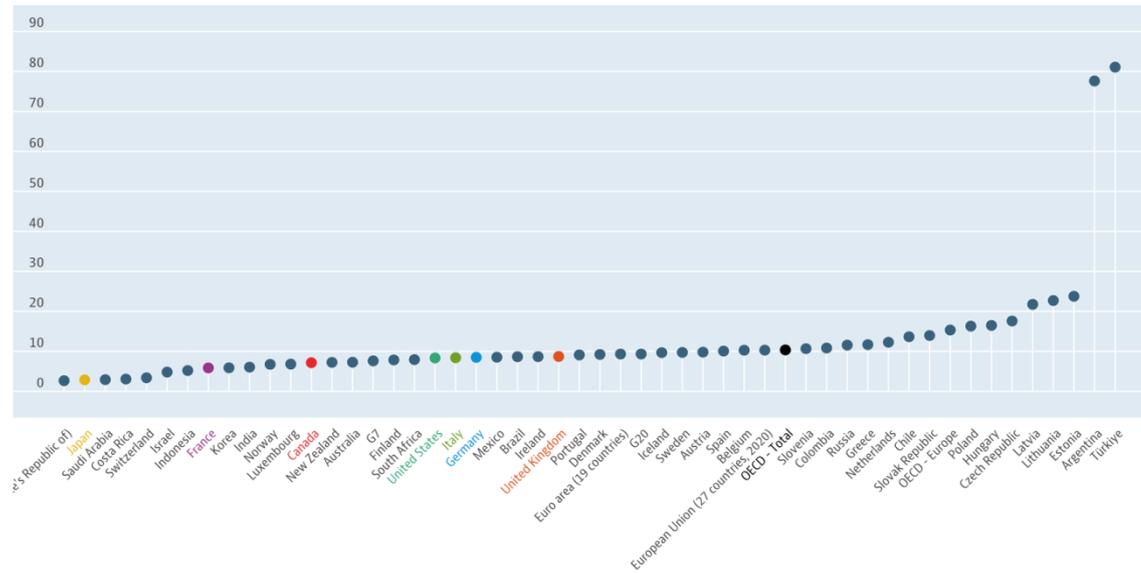
As we can see from the figure below (Figure 7), the inflation rate has an increasing trend and the high increase in the inflation rate starting in 2020 is visible to the naked eye. Unfortunately, very high rates of inflation have been experienced in Turkey during 2022. The CPI has reached as high as 85.51% in October 2022.

Figure 8. Inflation Rate
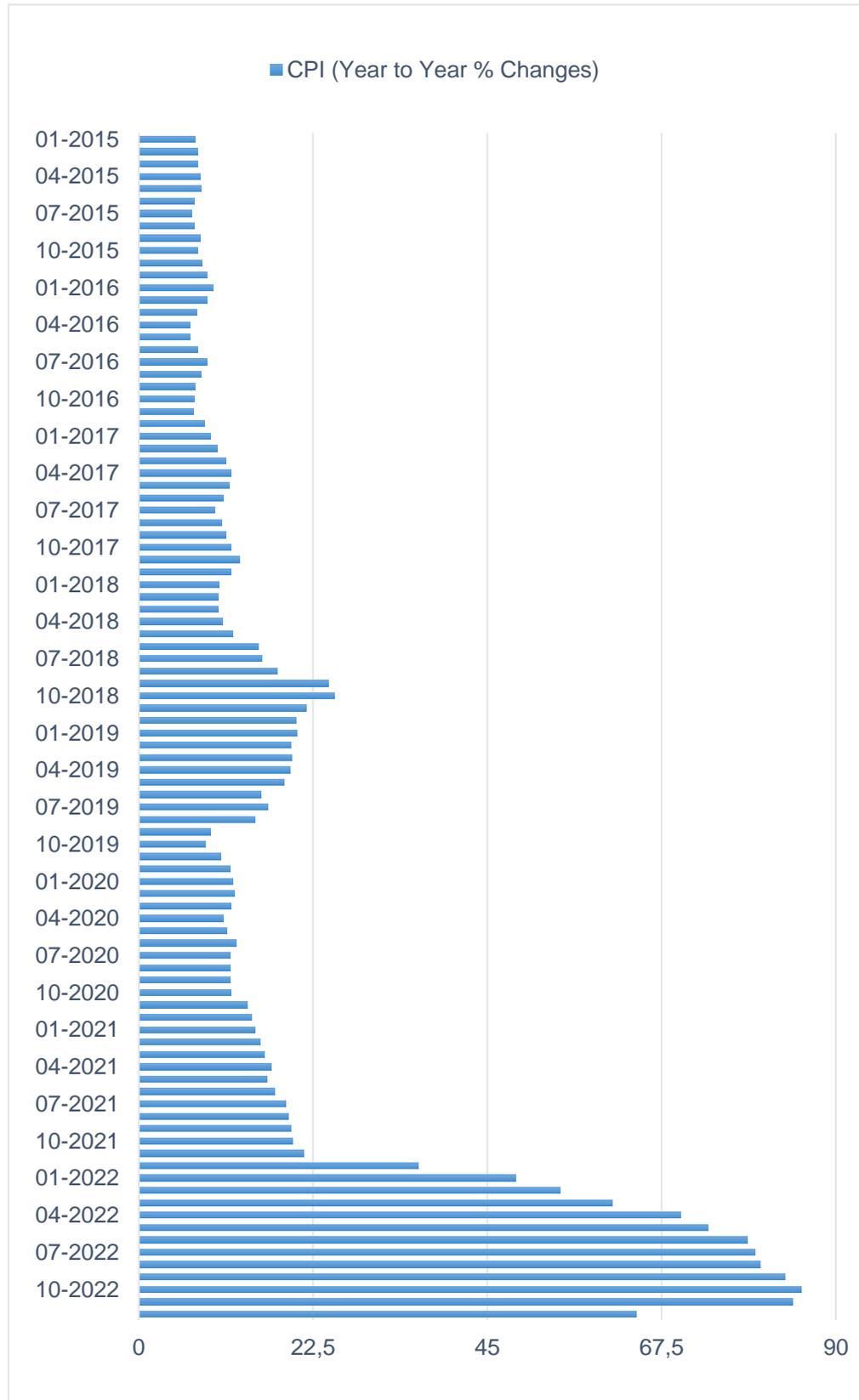
Source: CBRT (Accessed on 11.01.2023)

3.5. DATA AND ECONOMETRIC METHOD

There are myriad of factors that affect private consumption. According to Guo and Papa (2010), household income, employment in the service industry, the growth of the financial sector, and interest rates are the main factors influencing private consumption in China. Consumption might also be affected by purposes, societal contexts, history (Ribeiro et. al. 2019).

This study begins its investigation by examining the relationship between consumption and income, credit card spending, effective exchange rate, inflation rate, and interest rate on personal loans using common econometric techniques to empirically comment on "status quo bias". Quarterly time series data is going to be used in this examination for the period of 2013-2022. Additionally, since data per capita were not available for all datasets at the necessary frequency, the study uses country-level variables.

Table 22. Variable List

Variables	Variable Definition	Source	Time Period	Type
Consumption	Natural Log of the Consumption expenditure	TURKSTAT		
Income	Natural Log of the Gross Domestic Product	TURKSTAT		
Card	Natural Log of the Credit card expenditure	CBRT Website	2013Q1-2022Q2	Quarterly
Effective	Effective Exchange Rate	CBRT Website		
Inflation Rate	Inflation Rate	CBRT Website		
Interest Rate	The interest rate on personal loans	CBRT Website		

Variables are consumption, income, inflation rate, effective exchange rate (Effective), credit card spending (Card), the interest rate on personal loans (Interest), and the volume of personal loans (Credit) while consumption is the dependent variable among others. Also, a dummy variable is added to the analysis to determine the before-after effects of the recent economic crisis that started with the occurrence of the Covid-19 pandemic. The source for the

variables is the Turkish Statistical Institute (TURKSTAT) and the Central Bank of the Republic of Turkey (CBRT). Note that natural logarithm of Consumption, Credit Card Spending and Income are used in the analysis.

Since this is a time series data set it is important to check if there is a unit root in the data set. To determine if there is a unit root in the data set, Philips-Perron (PP) test with Barnett Kernel as spectral estimation method and New-West Bandwidth and Augmented Dickey Fuller Unit Root Tests were employed. After, figuring out that the Consumption data set (the dependent variable) is stationary at 1st difference and independent variables stationary at different degrees it was decided to use the Autoregressive Distributed Lag (ARDL) bounds test since ARDL bounds test can be applied when the dependent variable stationary at 1st difference and the independent variables stationary at different levels, and therefore, the co-integration relationship is tested with the ARDL bounds test.

As we can see from the Table 23 Consumption (dependent variable) is stationary at 1st degree, and the independent variables Income, Card are stationary at 1st degree, Effective Exchange Rate stationary at level, and Inflation Rate is stationary at the second difference according Philips-Perron unit root test results and stationary at the first degree according ADF unit root test results.

Table 23. Unit Root Test Results

Augmented Dickey Fuller Unit Root Test Results, Level				
Variables	**t-Statistic constant**	**Prob.**	**T adf trend and intercept**	**Prob.**
Consumption	4.302	1.0000	5.1176	1.0000
Income	3.2234	1.0000	3.1882	1.0000
Card	7.9911	1.0000	4.1209	1.0000
Effective Exchange Rate	-0.0825	0.9439	-3.3742	0.0710
Interest Rate	-1.4922	0.5264	-2.1662	0.4935
Inflation Rate	4.755	1.000	-0.2576	0.9890
Augmented Dickey Fuller Unit Root Test Results, First Differences				
Variables	**T adf intercept**	**Prob.**	**T adf trend and intercept**	**Prob.**
Consumption	3.0252	1.0000	-4.7599	0.0026
Income	2.259	1.0000	-5.5722	0.0003
Card	-0.2352	0.9245	-3.9342	0.0206
Effective Exchange Rate	-8.5815	0.0000	-8.5463	0.0000
Interest Rate	-5.0054	0.0002	-4.9271	0.0017
Inflation Rate	-1.6985	0.4234	-2.2304	0.4593
Phillips-Perron Unit Root Test Results, Level				
Variables	**Adj. t-Stat pp constant**	**Prob.**	**Adj. t-Stat trend and constant**	**Prob.**
Consumption	4.3019	1.0000	8.3749	1.000
Income	4.1803	1.0000	3.0011	1.000
Card	9.0777	1.0000	7.4085	1.0000
Effective Exchange Rate	-0.5073	0.8785	-3.3927	0.0678
Interest Rate	-1.7474	0.3998	-2.4732	0.3387
Inflation Rate	3.6606	1.0000	2.3182	1.0000
Phillips-Perron Unit Root Test Results, First Differences and Second Differences				
Variables	**Adj. t-Stat pp constant**	**Prob.**	**Adj. t-Stat pp trend and constant**	**Prob.**
Consumption	-3.6387	0.0100	-4.7654	0.0026
Income	-4.5584	0.0080	-5.5676	0.0003
Card	-1.1181	0.6980	-3.9503	0.0199
Effective Exchange Rate	-9.7258	0.0000	-12.0141	0.0000
Interest Rate	-5.0109	0.0002	-4.9333	0.0017
Inflation Rate	-0.6985	0.4234	-2.2304	0.4593
Inflation Rate 2nd difference	-6.9893	0.0000	-7.4922	0.0000

Source: Own Calculations

3.6. RESULTS

The status quo bias among Turkish people is investigated with ARDL bounds test by employing consumption as the dependent variable and income, inflation rate, effective exchange rate (Effective), credit card spending (Card), and the interest rate on personal loans(Interest) as the independent variables. A dummy variable is employed to see if there is a difference before and after the Covid-19 pandemic. While Table 24 shows the Long Run Prediction results, Table 25 displays the Error Correction form.

Table 24. ARDL Long Run Form and Bond Test Results

Dependent variable: Consumption				
Variable	**Coefficient**	**Std. error**	***t*-Statistic**	**Prob.**
Income	0.9121	0.0247	36.9024	0.0000
Inflation	0.0016	0.0003	4.9654	0.0000
Effective	0.0007	0.0003	1.7479	0.0914
Interest	-0.0048	0.0011	-4.3035	0.0002
Card	0.1095	0.0447	2.4520	0.0207
Dummy	-0.04280	0.0188	-2.2665	0.0313
Adj. R2	0.9993	**Durbin-Watson**		1.7006
Diagnostic test		**Statistic**		**Prob.**
Jarque-Bera Test		1.1154		0.5725
ARCH(1)		0.9827		0.3285

Breusch-Godfrey Serial Correlation LM Test	1.8541	0.1767
Ramsey Reset Test	0.0638	0.9026

Source: Own calculations

Consumption=0.9121*Income*+0.0016*Inflation*+0.0007*Effective*-0.0048*Interest*+ 0.1095*Card* + -0.04280 *Dummy*

The ARDL co-integration test results suggest that there is a significant long-term relationship between the variables (See Table 24). In the long run, a 1% increase in income causes consumption to increase by 0.91 units. Additionally, 1% increase in credit card spending increases the consumption by 0.10 units. While the effective exchange rate and inflation cause consumption to increase, an increase in the interest rate on personal loans decreases the consumption. Also, from the prediction results it can be concluded that the pandemic and the economic crisis that came with the pandemic had a significant effect on the consumption level. Findings suggest that the global economic crisis caused by the Covid-19 pandemic had a negative effect on consumption level.

As presented in Table 25, the coefficient of error correction term is negative and significant as expected. It is expected that the effect of the shock that will occur in the short term will be corrected by approximately 0.99% in the long term and come to equilibrium.

Table 25. ARDL Error Correction Regression Results

Variable	Coefficient	Std. error	*t*-Statistic	Prob.
Dependent variable: Consumption				
No Constant and No Trend				
Effective	0.0015	0.0003	4.3514	0.0002
Interest	-0.0027	0.0006	-4.3736	0.0002
CointEq(-1)	-0.9903	0.0460	-20.2554	0.0000

Source: Own calculations

Figure 9. CUSUM
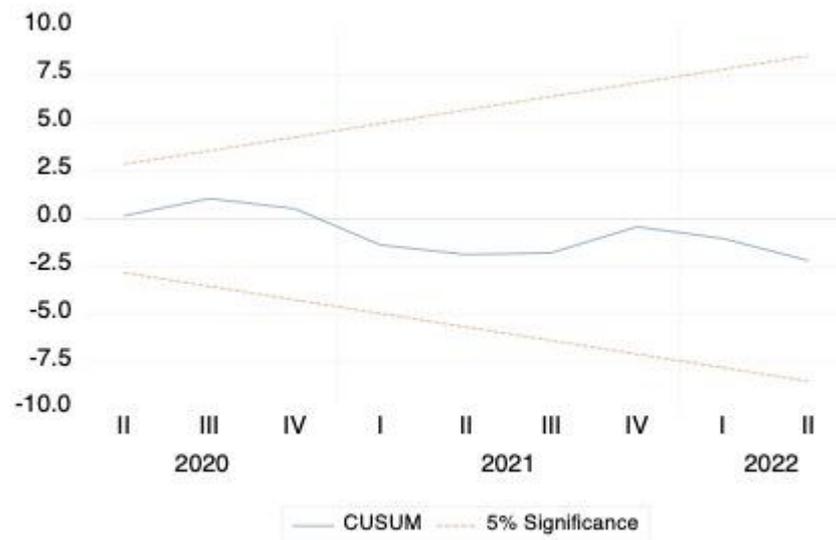
Source: Own calculations

Figure 10. CUSUM of Squares
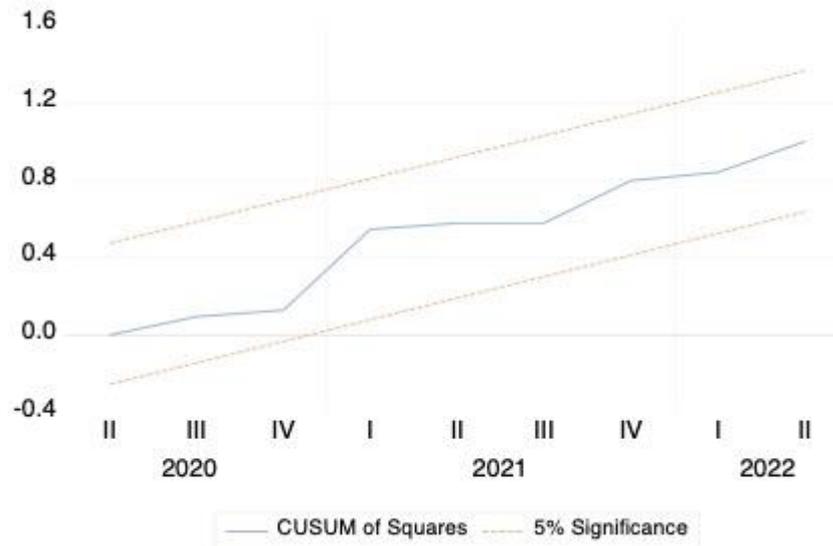
Source: Own calculations

To see whether there is a structural break in the ARDL bound test model is expressed with the CUSUM and CUSUM SQ tests. Figure 9 and Figure 10 show that there is a significant and stable relationship between the variables at the 5% significance level, and it can be concluded that the model is stable during the estimation period.

3.7. CONCLUSION AND DISCUSSION

In this paper, it is examined if the status quo bias is valid for Turkish people. For this purpose, the relationship between consumption and income, inflation rate, effective exchange rate, and interest rate on personal loans, and credit card spending has been investigated. After testing for ARDL Bound Test it has been shown that the time series data used in this study and the analysis results support that there is a significant long-run relationship between consumption and income, inflation rate, effective exchange rate, and interest rate on personal loans, and credit card spending. Therefore, it is concluded that the status quo bias is valid

for Turkey's case meaning that Turkish people want to keep their current status economically. According to estimation results, other than their income Turkish people rely on credit card spending to maintain their status quo.

The findings of the study suggest that even with an economic crisis that brought such drastic economic conditions people do not choose to decrease their consumption instead they keep their consumption even if that means getting into debt using different sources such as credit cards. Thus, it can -once again- be concluded that people are not rational beings instead they want to keep their status and compensate for their spending with loans even if their incomes are not enough for the time being.

Additionally, the results are compatible with Vaskovskyi (2020) who studied status quo bias for Latvia during the 2008-9 financial crisis. Hence, for future studies, a comparison analysis among countries and country groups using panel data is suggested to see how different the status quo bias is throughout the countries. This way it will be possible to understand how inclined and vulnerable countries are depending on their development status. Furthermore, when a significant amount of time passes status quo bias can be tested for the before and after crisis periods to see if there is any proportion change among the determinants of consumption.

CONCLUSION

This dissertation consists of three essays about Behavioral Economics. The first essay discusses the behavioral patterns of economically disadvantaged Turkish people for the years 2006 and 2019. The second essay investigates what kind of behavioral economics principles applies to the Central Bank of the Republic of Turkey. Lastly, the third essay examines if the Status Quo Bias, one of the Behavioral Economics concepts, is valid for Turkey during the recent economic crisis.

The first essay concludes that even though people in low-income group have better conditions in 2019 with a comparison to 2006 they still deprive of necessary conditions. Therefore, it has been determined that there is still more potential to improve people's lives. As a result, various policy recommendations have been made, including how to improve retirement savings, how to involve more women in the workforce, and how to guide kids in learning crucial and necessary skills.

The second article explains how the CBRT has implemented the inflation-targeting policy since 2002. Since the application of the policy has not shown any success for a respectable amount of time and the target inflation has been unchanged and fixed at 5% since 2012 even though the inflation rate is far from the target, I deduct that this is a consequence of irrationality at institutional level. Therefore, I list and explain possible reasons that are related to Behavioral Economics in the second article, which are: Availability Heuristic, Representativeness Bias, Status Quo Bias, Loss Aversion, Overconfidence, Confirmation Bias, and Anchoring and Adjustment.

The third paper of this dissertation proves that Turkish people were affected by the status quo bias during the recent economic crisis. The findings of the ARDL Bounds Test suggest that, despite an economic crisis that has resulted in such

dire economic conditions, people choose to maintain their consumption level, even if it means incurring debt through various means such as credit cards. Thus, it can -once again- be concluded that people are not rational beings instead they want to keep their status and compensate for their spending with loans even if their incomes are not enough for the time being.

Behavioral Economics has been growing since the 1970s. Yet there is still a large room for studying the world from a Behavioral Economics perspective. Hence, this dissertation contributes to Behavioral Economics by examining Turkey using Behavioral Economics methods both at the micro (at individual level with the first essay and institutional level with the second essay) and macro levels (with the third essay).

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APPENDIX 1. SURVEY OF MARKET PARTICIPENTS

Data Governance and Statistics Department
Surveys and Indices Division

TÜRKİYE CUMHURİYET
MERKEZ BANKASI

SURVEY OF MARKET PARTICIPANTS

	Monthly Inflation			Annual Inflation			
	Current Month	Next Month	2-Month Ahead	End of the Year (January-December)	End of the Next 12 Months (*)	End of the Next 24 Months (*)	End of the Next 5 Years
What is your expectation of the CPI?(%)							

*(*)The probability distributions for expectations of consumer inflation **for the next 12 months and 24 months** are also asked while filling out the questionnaire.*

		End of the Current Month	End of the Year	End of the Next 12 Months
What is your expectation of the US Dollar rate in the interbank foreign exchange market? *(Turkish Lira-TRY) (Please indicate in four decimals.)*				

	Current Year (January - December)	Next Year (January - December)
What is your expectation of the annual current account balance? ((+) Surplus, (-) Deficit) ($ Billion)		

	Current Year (January - December)	Next Year (January - December)
What is your expectation of the GDP growth rate? ((+) Increase, (-) Decrease) (%))		

	End of the Current Month
What is your expectation of the Borsa Istanbul (BIST) Repo and Reverse Repo Market overnight interest rate? (%)	

	End of the Current Month	3-Month Ahead	12-Month Ahead	24-Month Ahead
What is your expectation of one-week CBRT repo auction interest rate? (%)				

APPENDIX 2. ETHICS COMMISSION FORM

HACETTEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
ETHICS COMMISSION FORM FOR THESIS

HACETTEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
ECONOMICS DEPARTMENT

Date: 05/07/2023

Thesis Title: THREE ESSAYS ON BEHAVIORAL ECONOMICS

My thesis work related to the title above:

1. Does not perform experimentation on animals or people.
2. Does not necessitate the use of biological material (blood, urine, biological fluids and samples, etc.).
3. Does not involve any interference of the body's integrity.
4. Is not based on observational and descriptive research (survey, interview, measures/scales, data scanning, system-model development).

I declare, I have carefully read Hacettepe University's Ethics Regulations and the Commission's Guidelines, and in order to proceed with my thesis according to these regulations I do not have to get permission from the Ethics Board/Commission for anything; in any infringement of the regulations I accept all legal responsibility and I declare that all the information I have provided is true.

I respectfully submit this for approval.

Date and Signature

Name Surname:	Feyza Özdinç
Student No:	N17249545
Department:	ECONOMICS
Program:	ECONOMICS (ENGLISH)
Status:	☐ MA ☒ Ph.D. ☐ Combined MA/ Ph.D.

ADVISER COMMENTS AND APPROVAL

_____
Prof. Dr. Hüseyin ÖZEL

APPENDIX 3. THESIS ORIGINALITY REPORT

HACETTEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
Ph.D. DISSERTATION ORIGINALITY REPORT

HACETTEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
ECONOMICS DEPARTMENT

Date: 5/7/2023

Thesis Title: THREE ESSAYS ON BEHAVIORAL ECONOMICS

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Name Surname:	Feyza Özdinç
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ADVISOR APPROVAL

APPROVED.

Prof.Dr. Hüseyin ÖZEL