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## **EVALUATION OF THE PRIVATE PENSION SYSTEM IN TURKEY AS AN EXAMPLE OF BEHAVIORAL ECONOMICS**

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### **Abstract**

*Traditional economic theories largely suggest that the individual is in activities that make rational decisions and maximize their own benefits. But according to behavioral economics, people's decisions and choices are not always perfect. Human behavior is influenced by feelings like justice and equality and social, cultural and psychological events so that the individual gets away from the assumption of rationality. Behavioral economics examines how psychological factors can be used to benefit people. One of the best examples of behavioral economics practice today is the individual pension system. In this study of behavioral economics approach is evaluated within the private pension system in Turkey. Turkey has benefited from the solutions put forward in the application of behavioral economics at the private pension system steps have been taken towards this.*

### **Keywords**

**Behavioral Economics, Rationality, Individual Pension System, Automated Attendance System, Turkey**

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## **1. Introduction**

Since economic results reflect the result of human behaviors, in economics, the economic behaviors of human beings are necessary to be studied as a separate subject. Due to the fact that the economic, social, cultural, and other behaviors are not distinct from each other, while the behaviors are evaluated, economics is obliged to progress together with psychology. For studying and analyzing of all behaviors, whether or not the instruments economics utilizes are enough and whether or not the economic decisions such as participating in business life, going toward saving, investing and the other decisions such as getting married and having child are the outcomes of the same processes are the continuously discussed areas in economics and out of economics.

The concept of behavioral economics emerging after 2<sup>nd</sup> World War was accepted as a branch of economics after 1980. Behavioral economics combining the scientific branches of economics and psychology, discovering limited rational individual, presents more realistic approach of individual (Hatipoğlu, 2012). In contrast to the view that consumers are rational, the domain arguing that consumers are irrational are expressed as behavioral economics (Koç, 2018). The fact that individuals will not always exhibit rational behaviors, while they make economic decisions in daily life, and that instantaneous emotions and psychologies will also affect decision process form basis of behavioral economics (Karaca, 2017).

At the present times, when the increasing aged population is considered, it can be said that governments will not provide security to the people as much as they desire. Therefore, that person takes proper steps on the name of his/her future out of government security is extremely important on his/her part. Individual pension systems can create a functional solution in this stage for individuals and governments. Thus, together with individual pension system, for individuals to make preparation in the proceeding ages they will oblige to leave business life by encouraging them to save, it can be possible for their accumulations that are made regular to form a resource in economy (Uçar, 2004).

One of the best examples of behavioral economics is individual pension system of the people starting the job and automatic participation system (APC) in it, brought into force as complementary of the system, in which the people are obligatorily included at the beginning and then enable them to be able to leave, when they desire. While obligatorily including in the system reflect irrational behaviors of individuals, individuals can generally prefer not to the leave the system. Hence, in this study, it is aimed to study the behaviors decision makers show while including in individual pension system from the perspective of behavioral economics.

Reflecting the emergence, development, and current situation of individual pension system in Turkey, what is under consideration is to evaluate in the framework of behavioral economics.

## **2. Behavioral Economics**

Understanding rational person (*homo-economicus*), expressed as the most important elements of traditional, forms basis of understanding behavioral economics. The person exhibiting rational behaviors act as a player, who makes decisions by making utility-cost analysis, gives predictable answers to information and promotion by taking into consideration his/her beliefs and expectations, and, in this way, aims to increase happiness and utility. With rational person approach of traditional theory of economics, theory reached a structure, where noncomplex and mathematical models are intensively used. But when we observe daily life, [we see that] people do not rationalist behave and are emotional, that they cannot always have complete and correct information and, instead of making utility –cost analysis, can prefer the quickest ways (Akin &Urhan, 2015). In other words, it can be possible to say that rational based assumptions behavioral economics object to will not be valid in every time and cases and even decision mechanisms can make mistakes in predictable and systematic way and faultily work (Koç, 2018).

Behavioral economics utilize field events, whose true word is more, and which are based on more psychological basis and economic analyses, form theoretical view, and make think better (Camerer & Loewenstein, 2002). According to this, it compares the outputs observed by means of field events and theoretical predictions and, as against the main views mainstream economics adopts, introduces new views and methods. Behavioral economics studies the underlying reasons and assumptions of economic decision making process by means of laboratory studies and experiments, in addition, with these study ways, it researches which economic cases are effective on economic decision process and the effect of this on outputs (Camerer & Weber, 2006). Behavioral economics, participating not only managerial concepts but also the ones such as conscious, unconscious, and feeling, earlier ignored by economists in literature, forms a different view (Hatipoğlu, 2012).

With many tests the proponents of the theory of behavioral economics make, they reveal that (behaviors of) rational person having set of ordered in good ways, limitless calculation ability, and perfect information are not similar to those of the person in life. However, they put forward that the real economic agents exhibit limited rational behaviors in all probability and irrational at the worst (Kapeliushnikov, 2015).

## **2.1 The Relationship of Economics and Psychology**

The science psychology giving considerable information regarding how human behaviors become different from that economists traditionally introduce studies human behaviors, human judgements, and human happiness systematically (Sent, 2004). The science economics is interested in how the resources are distributed between economic agents such as consumers, companies, and markets (Rabin, 1998). Another one of the science psychology is interested in is expressed as thinking and thinking process. Its closeness to behavioral economics is based on several studies conducted on thinking processes and cognitive psychology. According to cognitive psychology; learning is based on changes between states of knowledge and not on changes in the probability of behavior (Alqurashi&Williams, 2019). Although the perception, learning, problem solving, language, and emotion are the primary areas of psychology, the factors in decision processes of the individuals making investment also take place in the science psychology (Tufan, 2006).

The relationships of the sciences psychology and economics to each other emerge with common concepts present in the literature of both sciences and opportunity cost, one of these concepts, due to the fact that it is associated with preference process and making decision, also found a place for itself in the psychology area. In addition to these concepts, law of diminishing returns and public policies also develop the relationship of economics and psychology (Ruben, 2013). Thanks to behavioral economics forming as a result of relationship of economics with psychology, the thought that the theoretical approach of the economics area will be richened, that economic analyses will be more consistently applied, and that better economy policies will be developed occur (Camerer & Loewenstein, 2004).

As a result of Kahneman and Tversky carried out in the areas of psychology and economics, with “prospect theory” they developed, they formed the basis of behavioral economics and, examining the behaviors of the people under risk, expressed that their tendencies of risk aversion prevailed to their winning desires. According to this, it is thought that the pain the losses give to individuals will be more than satisfaction the gain introduces and that the people may make some irrational decisions together with predominance of their risk aversion tendencies. If the risk people will take is lower than the gain they will obtain, decision maker, avoiding taking risk, can give up a large gain (Çalık, 2009).

## **2.2 The Period of Behavioral Economics**

The concept of behavioral economics is first uttered by some authors in the early 1960s. While historians of economics do not divide behavioral economics into certain periods, Sent (2004) divided it into two first generation (old) and second generation (new), periodically. First

generation, evaluating the concept rationality from viewpoint of psychology discipline, wanted to present an alternative view to traditional economics, which they qualified as inadequate. While utility function is examined in traditional economics, on the name of being able to introduce the preferences, which are as true as possible and consistent to each other, some empirical rules have been begun to be formed in behavioral economy. In other words, traditional economists examine the concepts of utility and profit maximization and rationality, first generation behavioral economists concentrated on the deviations of their assumptions. While behavioral economics the options presented and results expected examines, first generation representatives studied empirical arguments about the content and shape of utility function (Sent, 2004).

The most important difference between the second generation and first generation behavioral economics is seen in the studies introduced by Kahneman and Tversky. While first generation theoreticians completely reject traditional economics and focus on new models, in the second generations, the main rules of traditional economics are used and, updating the predictions directed to cognitive constraints and deviations, new theories were tried to be expressed (Ruben & Dumludağ, 2015).

### **2.3. Making Decision in the Context of Behavioral Economics**

When looked at the literature of economics, it is seen that there are two main mechanisms of making decision process. These are expressed as expected utility theory and expectation theory (Hens & Bachmann, 2008).

**Table 1:** *The Differences between Traditional Economics and Behavioral Economics*

<b>Traditional Economics – Rationality</b>	<b>Behavioral Economics</b>	<b>Psychological Infrastructure</b>
Expected Utility	Expectation Theory	Psychophysics, Adaptation, Loss Aversion, Mental Accounting Not being able to be linear
Balance	Learning, Development	Recomendation
Maximum Utility	Social Utility	Spending for the Other People

**Resource:** Çekiç, 2016; Camerer, 1999.

In traditional economics, it is accepted that the decisions are rationally made and that individuals keep their individual utilities at maximum level and find a solution way, despite the existing barriers. In traditional economics, despite uncertain conditions, expected utility theory

is utilized in the decisions made (Çekiç, 2016). In neoclassic economics, it is assumed that units making decisions make optimal decisions under the existing constraints and maximize their utilities. In view of this, in economic analysis of this stream, what determines making decisions under uncertainty is “expected utility theory”. Expected Utility Model, developed by Neumann and Morgenstern, is accepted as reference model of traditional economic theory and expressed as in the following Equation (1). In the following equation, ( $p_i$ ) expresses the probability of that  $x_i$  result comes, while  $u(x_i)$  represents the utility of obtaining  $x_i$  result. In expected utility theory, individuals weighted the possible outputs according to actualization probabilities and this case is formulated as follows (Camerer, 1999).

$$\text{Expected Utility (BF): } \sum u(x_i) p_i \quad (1)$$

In expected utility theory, while the people make decision, they prefer the option that will provide for them, in expectation theory, while the people make decision, they will use value function. In other words, with expectation theory, they aimed to explain that in the real behaviors of individuals, the decisions making under risk did not always provide maximum benefit and while making decision, individuals are not always rational (Thaler, 2017).

The indication of expectation theory as formulas is as follows.

$$\text{Expectation Theory: } \sum w(p_i) * v(x_i - r) \quad (2)$$

$w$ , parameter is used for weighting  $p_i$  probabilities that become different from individual to individual. While  $x_i$  value expresses utility,  $r$  shows reference point. Therefore,  $v(x_i - r)$  value shows the utility the people perceive according to reference point. This value also expresses reflection effect. Therefore, the concave utility curve forms for gains and convex for losses (Camerer & Loewenstein, 2004).

The studies in behavioral economics and psychology areas show us that the people may not behave in accordance with their own interest. Therefore, especially in the areas such as the education, health, and retirement, it can be necessary to make “guiding arrangements” in the applications directed to their interests. What wanted to be told with “guiding arrangements” is, for example, to bring automatic participation to individual pension system, but if they do not want, it is to present them right to leave the system. The studies show that a new arrangement was made and, in this arrangement, if there are two options in this arrangement, one of these are accepted as automatically selected and if you give the right to select dependently on individual, individuals do not change automatic preference. Setting out that the assumption that people make small savings for retirement will be their own interests, some countries made arrangements, in which there is automatic participation, in return to this, but right to leave is

also given (Özatay, 2016).

In this direction, in the next part of the study, in the framework of behavioral economics, the process to make decision, in specific to Turkey, will be discussed in the framework of individual pension and automatic participation system.

### **3. Individual Pension System (IPS)**

Individual pension system is third column pension system, which was founded as complementary of the current public pension system, and in which the accumulations, voluntarily formed on the basis of participation and contribution basis were completely followed in individual accounts. Its main aim, canalizing the accumulations, which the accumulations individuals made in the period, when they actively work into long term investment, is also to sustain their welfare level in the period they worked. Also, increasing internal savings, creating employment by providing fund for economy in long term, and forming a driving force to development are counted among the objectives of the system in the preamble of the relevant law (Yazıcı, 2015).

Individual pension system targets on providing protection for individuals against the serious decrease that may be seen in welfare levels and increasing their quality of life, directing them to saving in the working periods, when they are productive. In this system, individuals, saving in active working lives, when their incomes are higher, can have the opportunity to being able to easily cope with financial problems that may occur in the advanced age (Ercan & Gökçe, 1998).

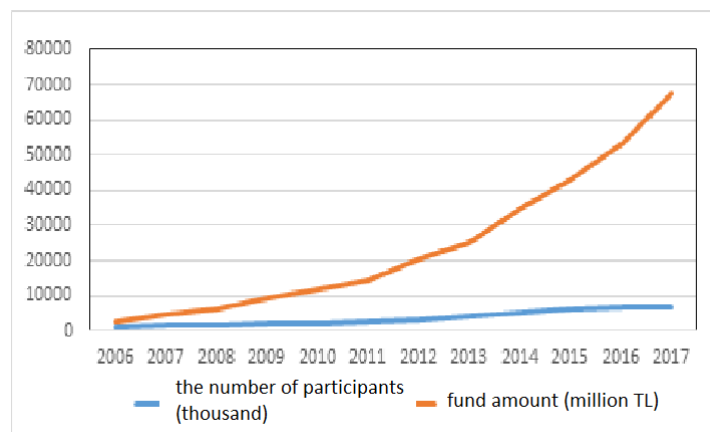
Private pension system approximating going back about 150 years started to rise after Second World War and rapidly entered development process. Private pension system successfully worked, especially USA, in most of developed countries and, later, the developing countries such as Chili, Peru, and Mexico, integrating the system into their own structures, introduced some different and new models (Zor, 2008). Turkey, examining individual pension models and taking into consideration of the successful and practical aspects of both system, formed the structure of individual pension system (Kaya & Kaya, 2016).

Individual pension system is a system we can say “new” in our country. This system aiming at protecting the current welfare levels during their retirement has been formed as one of complementary elements of social security elements in our country (Elbil, 2015). “*No. 4632 Law of Individual Pension, Saving, and Investment System was accepted by TBMM on the date of March 28, 2001 and was published in Official Journal, dated April 7, 2001 and numbered 24366. After the date of October 7, 2001, when the law came into operation, complementary*

legislation studies continued and, with approval of the first pension plans, Individual Pension System was actually implemented on the date of October 27, 2003 ” (www.egm.org.tr).

According to the law numbered 32, the main aims of individual pension system are expressed as follows (Yazıcı, 2015):

- To provide funds for long term infrastructure investments and increase employment.
- To form long term financing option for public sector
- To reduce speculative effects in markets
- To increase national savings
- To enable saving directed to retirement to flow in financial system
- To make contribution to strengthening capital markets.
- To form an advantaged and secure structure that will present products to individuals they can easily reach to their accounts and control their investments.



**Graph 1: Individual Pension Graph for the Period of 2006 – 2017**

In graph 1, individual pension system from 2006 to 2017 is examined in terms of participant number and total fund. Beginning from 2006, it is seen that there is an increase in total fund according to the years and, in parallel with this, in the number of participant number in pension system and, especially in respect of 2011, that there is a growing increase but not more.

In 2013, as a result of that government makes contribution to those accessing to the system, the interest in IPS increased and in respect of the date of October 6, 2017, the data associated with individual pension system, the data published by Pension Protection Center are as follows:



**Table 2: Main Indicators of IPS (06.10.2017)**

<b>The Number of Participant</b>	6,840.006
<b>Total Fund of the Participant</b>	TL 63,863.4 Million
<b>Government Contribution Total Fund</b>	TL 9,578.7 Million
<b>Total Contribution Share</b>	TL 50,264.0 Million
<b>Total Directing to Investment</b>	TL 49.539,9 Million
<b>The Number of Pension Companies</b>	18

**Resource:** Pension Monitoring Center, 2018

In order to much more promote individual pension system, in 2016, with the law numbered 6740, automatic participation was provided to IPS and regulation brought came into force in respect of the date of 01.01.2017. According to regulation, the existing employees working in private sand public sector not turned 45 and newly-recruited employees not turned 45 were begun to be automatically included in individual pension system beginning from the date of 01.01.2017 by their employers in stages according to the number of employees of employee.

In 2017, together with that employees began to participate in IPS, significant increase has occurred in the number of employees accessing to the system. In respect of 06.10.2017, according to the data of Pension Protection center, the information regarding the number of employee taking place in IPS and contribution share is as follows:

**Table 3: The Main Indicators of Automatic Participation in IPS (06.10.2017)**

<b>The Number of Employee</b>	3,312.095 People
<b>Total Fund of Employees</b>	TL 1,254.5 Million
<b>Total Contribution Share</b>	TL 1,230.9 Million

**Resource:** Pension Monitoring Center, 2018

In the duration of about 15 years, with the effect of government contribution of 25%, the serious number of participants has been reached in the recent years. In order to much more promote individual pension system, with no 6740 law, automatic participation of employees to

IPS were provided and regulation introduced came into force beginning from 01.01.2017 and participation of employees in IPS according to the number of employees will continue in the years of 2017, 2018, and 2019 (EGM, 2018).

Individual predicts the amounts of material resources he/she needs properly as long as his/her retirement life and takes action for accumulation to meet these needs are extremely important. In each of these stages, the effects of the personality and tendencies of individual are seen. Individual can exhibit the different behaviors according to their personality structure in the stages such as the process to make decision for the individual pension program that fits to himself/herself, predicting associated with the necessary amount of saving, making saving that is necessary, and valuing saving in the right investments. While individuals participating in individual pension system make these preferences in investments, they form preference according to some characteristic features. In these preferences of them, the effect of their gender, educations, income levels, ages, tendencies, in-group tendencies, risk perceptions, financial information levels, and personality features is remarkable. From decision making process to access to the system to the selection of investment instruments forming the content of pension investment portfolio, in all stages, the behaviors of individual can show difference (Uçar, 2004).

#### **4. Evaluation of Individual Pension System in the Framework of Behavioral Economics**

As we also state above, in fund preferences taking place in retirement investments of individuals, the fact that their psychological states, fund risk perceptions, demographic elements, and emotional intelligence are effective is closely related to that people will not always rational, while making decision and that they will be affected from the psychological factors and environment they live in as behavioral economics argues.

According to Thaler, who received Nobel Prize in the area of behavioral economics, because many people did not take any initiative for participating in the useful programs such as individual programs, considering inertia tendencies in people, he put forward that instead of making participation in these programs, arranging them in the way that everyone is included in the program but they can leave, when desired can increase welfare. (Thaler, 2017).

In accordance with the provisions regarding automatic participation, which come into force on the data of January 1<sup>st</sup>, 2017, of Law of Individual Pension, Saving and Investment System numbered 4632, employees oblige to include their staff in automatic participation system (APS). In the direction of this law, automatic participation is an application, which the

people under age 45, who work or will start to work in public sector or private sector, are automatically included in Individual Pension System. In this scope, the objectives of automatic participation system can be expressed as follows ([www.egm.org.tr](http://www.egm.org.tr)):

- In order to protect the standards of employees in active period, forming extra income in their retirement period
- To form long term financing to country economy
- In order to eliminate unemployment, forming employment
- To form driving force for economic development

APS coming into force in this direction is based on collecting and valuing internal savings and paying accumulated money or salary to individual as in individual pension system to individual. Automatic participation system is not an alternative to the existing social security system, otherwise, is a complementary injected to the system. Extra 25% government contribution is made to the shares paid from the salary of employees included in the system. But this contribution in the rate of 25% is not more than gross total of minimum wage. Other than these, in the first access to system, government contribution of TL 1000 for only one time is recorded to your account ([www.egm.org.tr](http://www.egm.org.tr)).

With the reform made in IPS, the employees under 45 and newly-recruited are automatically included in the system then that desires in the system and that does not want, in the case of Turkey, can go out from the system, taking back the money he/she invests in two months. Hence, there is no forcing individuals here. However, their participation in the system is not also their rational decisions. “Drive” is called to what is done here in behavioral economics. Here, the first decision is made by government on the name of individuals for preventing the cases such as their not being able to access to the system as a result of making examination about IPS, making decision and, at the end, their being too lazy to apply or experiencing indecisiveness. Expectation of government from this automatic participation is that individuals go out from the system and increase their savings. In addition, not being contented with only behavioral orientation, individuals are promoted them to stay in the system by giving subventions.

**Table 4:** *Comparison of Individual Pension System (IPS) with Automatic Participation System (APS)*

	<b>IPS</b>	<b>APS</b>
<b>Participation in the System</b>	Voluntary	Obligatory

<b>Retirement Condition</b>	Staying in the system beginning from the date of access to system at least 10 years and turning 56	Staying in the system beginning from the date of access to system at least 10 years and turning 56
<b>Target Mass</b>	Everybody having juridical capacity (1)	Employees not turned 45
<b>The part determining retirement company</b>	- Participant, for individual or group-dependent retirement contract, - Employer, for group retirement contract (certificate transfer to participants)	Employer (certificate transfer to employees)
<b>Right of Withdrawal</b>	It can be withdrawn in two months following the date of that offer form is signed/ approved	It can be withdrawn in two months following that pension company notified that the employee is included in retirement plan
<b>Total Contribution of government</b>	25% of paid total contribution shares	25% of paid contribution shares
<b>Top Limit of government contribution</b>	TL 6,088.50 (2018)	TL 6,088.50 (2018)

**Resource:** Pension Monitoring Center, 2018

If we look at the differences between IPS and APS, while IPS contains voluntary participation, APS is automatic participation. However, there is the right of withdrawal in two months following automatic participation. Another difference of APS included the employees not turned 45. In addition, in APS, the part determining pension company is employer.

**Table 5:** *Automatic Participation Statistics in respect of years*

	<b>31.12.2016</b>	<b>31.12.2017</b>	<b>30.06.2018</b>
<b>The Number of Employee</b>	24.972	3.553.575	4.108.862
<b>Total Fund of Employee (TL)</b>	4.707.232	1.992.635.852	3.072.978.880
<b>Total Contribution Share (TL)</b>	4.683.919	1.911.755.757	2.914.879.932

**Resource:** Pension Monitoring Center, 2018

In the direction of Individual Pension Saving and Investment System Law, numbered 4632, beginning from January 1<sup>st</sup>, 2017, the staff of public sector and, in stages, private sector were included in the system. In this direction, while the number of people in prelaw system was 24,972, together with the employees of public and private sector, included in the system in stages, the number of participants reached 3,53,575. In respect of the present times, this number amounted to 4,108,862. Again, while total fund of employees in prelaw was about TL 5 million, today, this number is around TL 2 billion.

When statistical data are more deeply examined, with the employees of public sector included in system and workplaces whose the number of employee is 1000 and over on the date of January 1<sup>st</sup>, 2017, the number of participants amounted to 1,047,123 people and, along subsequent right of withdrawal of two months, approx.. 375,000 people went out from the system. this number regressed to 669,126 on the date of 31.03.2017. Later, the agencies that have 250 and over, 50 and over and 10 and over participated in the system, in order. With these participations, the number of participants amounted to 2,500,000 people on the date of 30.04.2017. Also with the participation of the other agencies stated, although total number of participants in the system rises to around 3,500,000 people, the number at the present days consists of 4,108,862 (EGM, 2018).

It is seen that in Turkey, during application of individual pension system, it is seen that the solutions behavioral economics introduced are utilized and steps are taken directed to this are taken. For example, automatically recording the employees to IPS system with automatic participation system is a typical “guiding and driving” strategy, because the rationally participation of individuals in the system is out of question. In this direction, when the data in Turkey are examined in the context of behavioral economics, through guiding arrangements like automatic participation system, the important parts of individuals was provided to access to individual pension system.

## **5. Conclusion**

At the present times, for being able to sustain the lives of people in society in their retirement periods in the standards of the previous period, supporting [the existing pension system] with individual pension systems has begun to extremely gain importance. Due to this importance of it, individually studying every element individual pension systems includes has become important. Due to the fact the individual and social features will also affect their reaching welfare in the future, it is necessary for the theory of behavioral economics is also understood truly.

With the rational human approach of traditional economic theory, the theory has reached a structure that is predictable, uncomplicated and where mathematical models are used extensively. But when we observe everyday life, people are not rational and emotional, they cannot always have complete and accurate information. Behavioral economics suggests that human behavior should also be taken into account.

In this study, it was aimed to study the behaviors the decision makers exhibited, while including in individual pension system from the perspective of behavioral economics. When approached pension system from the aspect of behavioral economics, it is thought that fund preferences can be affected from many factors. The effect on the fund preferences of individual pension of personality features, emotional nationality, financial literacy, and demographic elements, among factors affecting investment decisions of individuals includes the view that they cannot make rational decisions, on which behavioral economics is attributed.

In the approach of traditional economics, especially classical economic approach, the main assumption is in the direction that individuals will make the best decision for themselves and will maximize their own utilities. Hence, according to traditional economics, in individual pension system, whether or not there is option of automatic participation is not important, because individual will already find the proper selection for himself/herself with his/her rational decisions. However, behavioral economics says that this main assumption is not valid. In other words, automatic participation is an important step for individuals to increasing the future savings and individuals do not rationally decide, while including in the system. However, while including in the system, they have right of withdrawal in two months as in the case of Turkey. In individual pension system in Turkey and in continuation of it, when automatic participation system that is complementary of this system is evaluated, it is seen that people rationally include in the system but significant part of the data reached show that an important sector does not go out from the system after automatic participation.

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