

POTENTIAL RISKS ON MORTGAGE FORECLOSURE RATE in TURKEY

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ÖZET

Mortgage sistemi gelişmiş ülkelerde yaygın şekilde uygulanan bir konut edinme sistemidir. Türkiye'de de mortgage sisteminin uygulanması düşünülmektedir. Mortgage sisteminde en önemli nokta mortgage faiz oranının doğru bir şekilde belirlenmesidir. Faiz oranının doğru belirlenmesi piyasanın etkin bir şekilde işlemesine yarayacağı gibi sistemin gelişmesine de faydalı olacaktır. Bu çalışmada mortgage faiz oranı üzerindeki temel risklerden hareket edilerek Türkiye ekonomisinde bu risklerin trendinin ne olabileceği zaman serisi tahmin metodu yardımıyla ortaya konmuş ve sistemin bu anlamda Türkiye'de işleyip işleyemeyeceği açıklanmaya çalışılmıştır.

ABSTRACT

Mortgage system is a house acquiring system which is implemented in developed countries widely. Mortgage system is also intended to be implemented in Turkey. The most important issue in mortgage system is to determine the mortgage interest rate accurately. It is clear that the accurate determination of the interest rate shall schedule efficient operation of the market as well as it shall be beneficial for development of the system. In this study, the trend of the basic risks over mortgage interest rate in the economy of Turkey has been put forth by means of time sequence estimation method and it has been tried to be explained whether this system shall operate properly in Turkey or not, in this sense.

I. INTRODUCTION

In widest general meaning, we may describe the mortgage system as a model of acquiring house in a manner like paying rental charges. If it is considered that only the half of population is houseowner in turkey, such system concerns a considerably huge part of the society.

With a general expression, the bank purchases a real estate of which the client demands in cash on behalf of the client and transfers the ownership thereof to the client. However, the real estate is mortgaged against the debt of the client to the bank. The client pays his/her debt to the bank until the end of a certain fixed term by means of

monthly payments in accordance with a certain payment schedule. It shall not be surprising that such mortgaged sales system shall provide opportunity to purchase the houses in their dreams for millions of people dreaming to be a houseowner in our country, enliven the real estate market and increase the quality of constructions. Furthermore, it can be mentioned that the epoch of waiting for retiring in order to acquire a house shall expire and shall be replaced by the epoch of being a houseowner at young ages by obtaining time housing credits of 30 years. Despite all of these advantages, the mortgage system also brings considerable risks accompanying. It is clear that operating such system without analysing the certain risks accurately shall be accompanied by problems that may be very burdensome. In this study, the possible problems have been tried to be clarified by putting forth the risks in mortgage system and determining the trend in such risk factors.

2. BASIC MORTGAGE RISK FACTORS

In our analysis, unemployment rate, loan-to-value ratio and personal saving rate have been deemed as the factors causing mortgage risk and such factors have been tried to be explained. Elmer and Seeling have emphasized and examined the importance of mortgage risk factors listed above in their article. The manner of development of risks has been tried to be put forth via multiple-regression analysis and time sequence estimation method by means of estimating the trend of each factor.

2.1. Unemployment Rate (UN)

The unemployment which is one of the basic structural economic and social problems is a serious problem of the economies and influences many economical variants and the remedy thereof requires some certain basic reforms. Despite the

decrease of unemployment rate requires structural reforms, it is also to reduce it by means of some certain economic policies. It is clear that expanding financial policies applied for decreasing unemployment rate shall ensure rise in employment by increasing the salaries in cash. However, such policies shall cause inflation depending on capacity and productivity of the economy. In this sense, it is clear that there is a negative correlation between inflation and unemployment. It is evident that the policies implemented for the purpose of decreasing the unemployment rate shall increase the inflation and consequently the general interest rates and of course, mortgage interest rate. It is natural to expect unemployment rates to explain the foreclosure rate trend (Emler and Seeling 1998: 3). Increase of unemployment rate in economy means lost of a regular income for individuals and makes the repayments of credit interests risky. For instance, borrowers of the credits have experienced difficulties in repayments when the unemployment rate has increased in u.k. and consequently, the mortgage-based insurance companies have reviewed their insurance criterions in order to not experience the same difficulties in future and complicated such conditions much more (Souter 1991:55). It is not surprising that such case shall cause the increase of mortgage credit interests since the increase in risks of the lenders. Because, this means reduce of the numbers of the individuals having a regular income in economy. Consequently, unemployment trend in the economy should be estimated correctly and reflected to the interest rate when determining the mortgage interest rates.

2.2. LOAN-TO-VALUE RATIO (LTV)

Loan-to-value(LTV) ratio is the ratio of the credit amount to the value of the real estate. In another saying, such ratio reflects the percentage of the credit used for purchasing the real estate. The household's home equity stake is measured by the loan-to-value ratio and a high LTV means

low equity (Engelhardt 2001: 16). In particular rational lenders will react to higher risk by setting ltv to offset or mitigate risk. Moreover, the observed "value" may vary with the availability and terms of financing (Acher and Emler 1999: 5). Since the most direct measure of equity is the loan-to-value ratio (LTV), we expect to observe a strong positive relationship between ltv's and foreclosure rates. High LTV ratio indicates low amount of advance payment as well as indicating that the people in demand of house need such houses severely but they do not have principal at such percentage. Such case increases the credit risks in economy and enlarges the amounts of credits which are subjects of legal proceedings and non-return credits. Since the increase in amount of credits which are subjects of legal proceedings and non-return credits shall cause a risk for the lenders naturally, it is not surprising that it is deemed as a factor increasing the rates of mortgage interests. If the lender perceives a low level of default risk, the response might be to accept a larger loan (higher LTV), all other things are equal. Similarly, the lender may reduce the loan term, impose recourse requirements, or enact other modifications in an effort to mitigate risk (Acher and Emler 1999: 12).

It is evident that increase of mortgage interest rates shall cause a social cost. The credit risk (default risk) in our country is the loss risk of a person who has obtained a housing credit when he/she has difficulties in repayment (Alp 2001: 71). In order to eliminate the credit risk (default risk), it is necessary to evaluate LTV rate and to give precedence to the credits where such rate is low. In case of any default in repayments of credits, credit institutions sell the mortgaged real estate and the existing balance of the credit is collected from income acquired from such scale. Consequently, it is necessary to consider the existing sequestration procedure in the country at the stage of evaluating the credit risk (Goldstin 1993: 286).

2.3. PERSONEL SAVINGS RATE(PSAV)

The personal saving rate is the rate of saving amounts of the persons to their incomes. Over the past several years it has become common to consider unexpected catastrophic events in an individual's life as "triggering" mortgage default. Elmer defines these "trigger events" as shocks that cause an "unanticipated shortfall in income such that income is no longer sufficient to meet periodic debt obligations in his article . A topic closely related to trigger events, but nevertheless distinct, is the financial risk posture of households. Individuals choose, of their own volition, their preferred levels of leverage, savings (Elmer 1999: 7). On the other hand, savings from refinancing may be less valuable to a higher-income borrower relative to a lower-income borrower, especially after controlling for the loan size. Both the individuals in economy and the members of the family do not consume some certain part of their revenues due to various reasons (reserve, investment, etc.), in another saying, they make saving. The consumption decreases as the needs are met. In another saying, the savings increase. The need of house which is one of the most important needs of today is one of the important reasons for savings of both the individuals and the members of the family. This is a reality that the turkish people desire to acquire house. Turkish people feel themselves in safe pro rate to the real estates of which they own. Making savings by the individuals and the members of the family in order to be able to purchase a house means less demand for mortgage credits and thus, this does not allow increase of mortgage credit rates since the risk for failure in repayments shall decrease. Furthermore, it is clear that high amounts of savings of the individuals and the members of the family shall ensure that there shall be no failure in repayments in case of a sudden unemployment.

3. MEASUREMENT OF MORTGAGE RISK

The discussion to this point suggests that the mortgage foreclosure rate trend could be related to a number of factors. Although several traditional determinants of default, notably house appreciation and LTV, appear to explain portions of the long-term trend, they fall short of explaining the more recent, and unsettling, rising trend. Moreover, the risk posture of households appears to have increased along with their financial exposure to unexpected problems. Traditional determinants of default, such as Itv, unemployment rate, and personal savings rate reflect the roles of variables that are widely known to affect default at the loan level. That is, the regressions take the following general form:

Foreclosure rat = $f(\text{Loan-to-Value Ratio, Unemployment Rate, Personal Savings Rate})$

This general specification can be used to test for the relative contribution of various economic forces on aggregate default patterns. Elmer and Seeling evaluated these themes in their article for England during the 1951-97 period. The four economic themes can be examined with regression analysis that explains mortgage foreclosure rates (for) during the 1951-97 period. The first equation explains these rates with a traditional model containing four variables: unemployment (UN), current and lagged loan-to-value ratio (LTV and LTV 1, respectively), and the personal savings rate (PSAV).

$$\text{For} = 0.05 \text{ UN} + 0.30 \text{ LTV} + 0.23 \text{ LTVL} - 0.04 \text{ PSAV} \quad (1)$$

By means of simple stated hereunder, it shall be tried to be put forth the trend of the risk factors within the economy of Turkey and the reflection thereof to the mortgage interest rates.

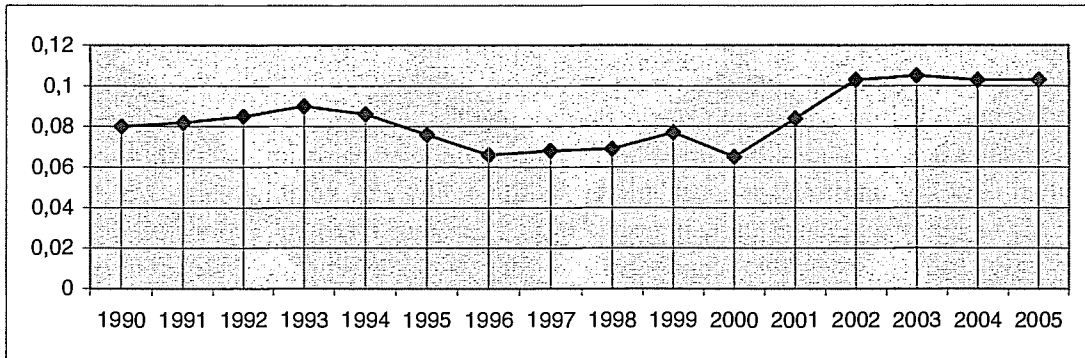
$$Y(T) = 100 * (\text{LN } Y_T - \text{LN } Y_{t-1}) \quad (2)$$

Below by analyzing the 3 important factors (unemployment rate, non-return credits, personal savings rate) trend's in Turkish economy, the risks of mortgage system in Turkey have been examined.

3.1. UNEMPLOYMENT RATE TREND

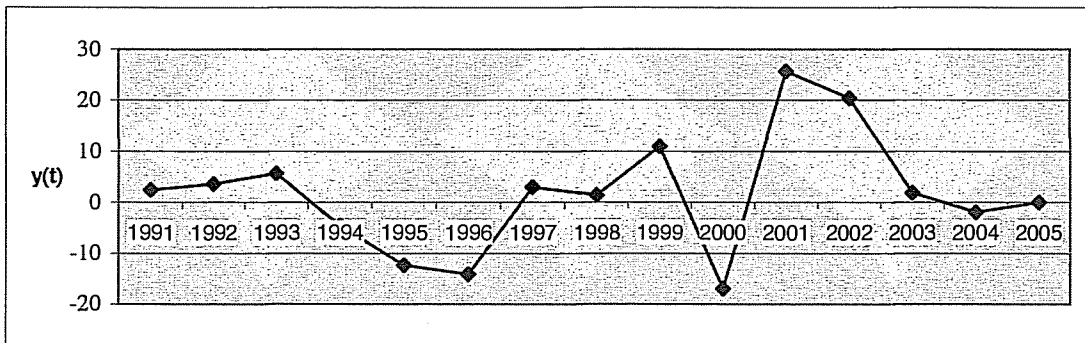
The effect of positive unit change in unemployment rate over mortgage interest is 0.05 within the scope multiple regression model established by Elmer and Seeling in their article. It is clear that there is a positive relationship between unemployment rate and foreclosure rate. Increasing unemployment rate rises the risk of repayments. Unemployment rate in Turkey is not expected to fall. This can easily be predicted by evaluating the economic structure of Turkey. This fact is a rising factor of foreclosure rates. The scale is 0 and this means that unemployment rate in Turkey has both rising and falling potential depending on economic development. Below there are two graphs showing the unemployment rate in Turkey between 1990-2005 and the volatility and the trend of unemployment rate in Turkey between 1991-2005 depending on time sequence estimation method.

Chart 1. Unemployment Rate In Turkey Between 1990-2005



Kaynak: TUIK (2005)

Chart 2. Unemployment Rate Volatility In Turkey Between 1990-2005



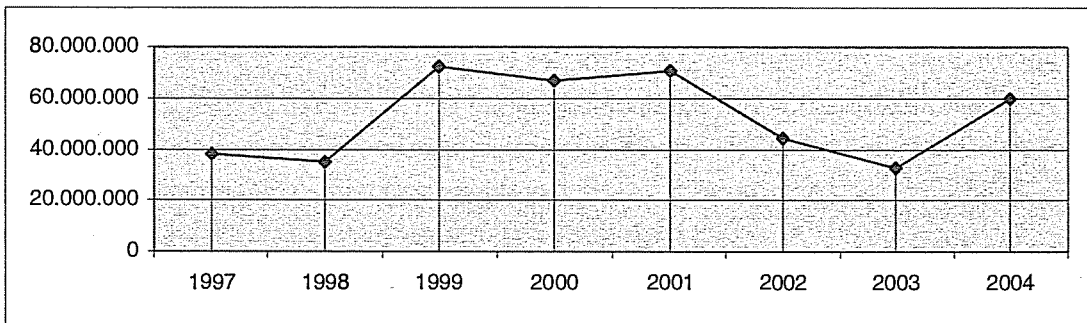
3.2. NON-RETURN CREDITS TREND

The effect of positive unit change in current loan-to-value rate over mortgage interest is 0.30 while the effect of delayed loan-to-value rate over mortgage interest rate has been calculated as 0.23 within the scope multiple regression model established by Elmer and Seeling in their article. The percentage of the credit used for purchasing the real estate is an important factor in determining the mortgage interest. If the real estate has been purchased by using a high percentage of credit, such case indicates a potential difficulty in repayment and deemed as an important risk factor by the lenders. The trend of credits which are the subject of a legal proceeding is very important for clarifying the question that

what percent of the real estate may be purchased by using credit in addition to the magnitude of the credit risk. Increase in credits which are the subject of a legal proceeding is an indicator of a high LTV rate as well as decrease is an indicator of a low LTV rate. An economical structure where credits which are the subject of a legal proceeding are increasing day by day indicates that the major portion of the real estate shall be purchased by using credit. The credits which are the subject of a legal proceeding in Turkey during the period between 1997 and 2005 have been examined and a trend thereof has been established within the scope of time sequence model. If the scale is over 0, this indicates an increase in credits which are the subject of a legal proceeding as well as, if the scale is under 0, this indicates a decrease in

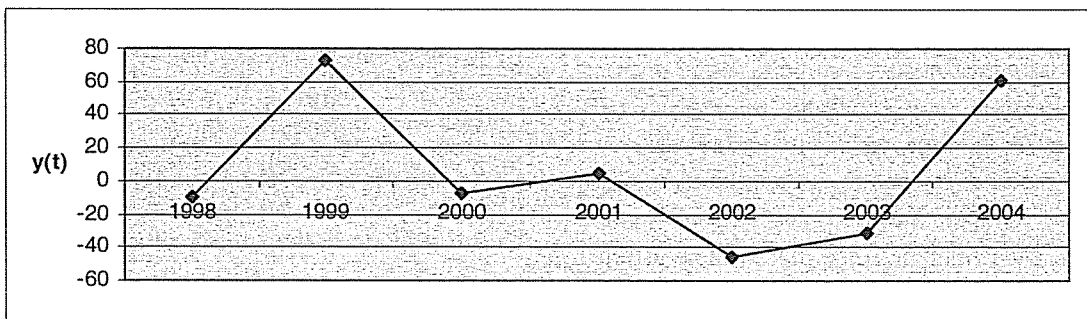
credits which are the subject of a legal proceeding. The increase in credits which are the subject of a legal proceeding means a high LTV rate and consequently higher mortgage interests rate as well as the decrease in credits which are the subject of a legal proceeding means a low LTV rate and consequently lower mortgage interests. When the indicator is examined, it is clearly seen that the value of $y(t)$ demonstrates a considerable fluctuation along the years. Such case indicates that there have been considerable changes in credits which are the subject of a legal proceeding during higher years. In this sense, the credits

Chart 3. Non-Return Credits In Turkey Between 1997-2004



Kaynak: Hazine Müsteşarlığı (2005)

Chart 4. Non-Return Credits Volatility In Turkey Between 1997-2004



3.3. PERSONEL SAVINGS RATE TREND

The effect of positive unit change in personal saving rate over mortgage interest has been determined as -0.04 within the scope multiple regression model mentioned in article. Since the mortgage system has not begun to be

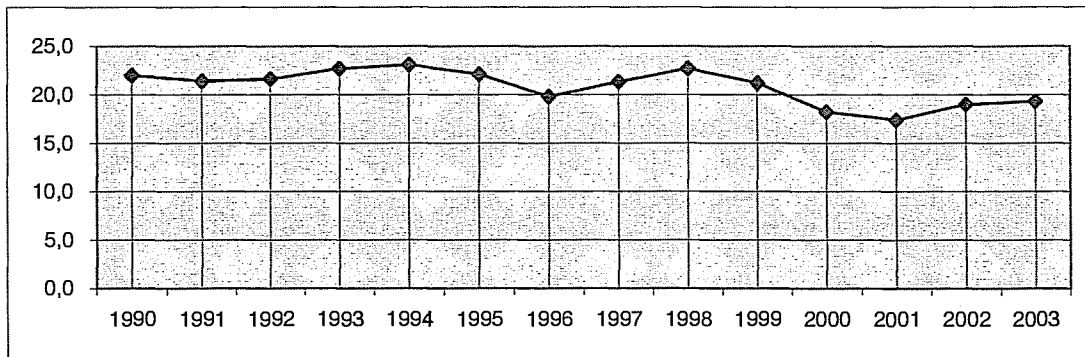
which are the subject of a legal proceeding that do not developing steadily cause considerable changes in credit interest during the years. It is clear that such fluctuation in credit interests shall cause instability in economy. As a matter of fact, such case also cause instability in mortgage interests. Below there are two graphs showing the non-performing loans in Turkey between 1997-2004 and the volatility also the trend of non-performing loans in Turkey between 1998-2004 depending on time sequence estimation method.

implemented in turkey yet, no interest related thereof has been established and consequently, it is not possible to determine the relation between the mortgage interest and personal saving rate. However, it is possible to see such a relation within the scope of multiple regression model covering the period between 1951 and 1997 in

article of elmer and seeling. As a matter of fact, high rate of personal savings shall decrease the demand to mortgage for acquiring house and consequently reduce the interest rates both theoretically and empirically. It can be mentioned that the amounts of the risky credits have decreased. The saving rate trend has been

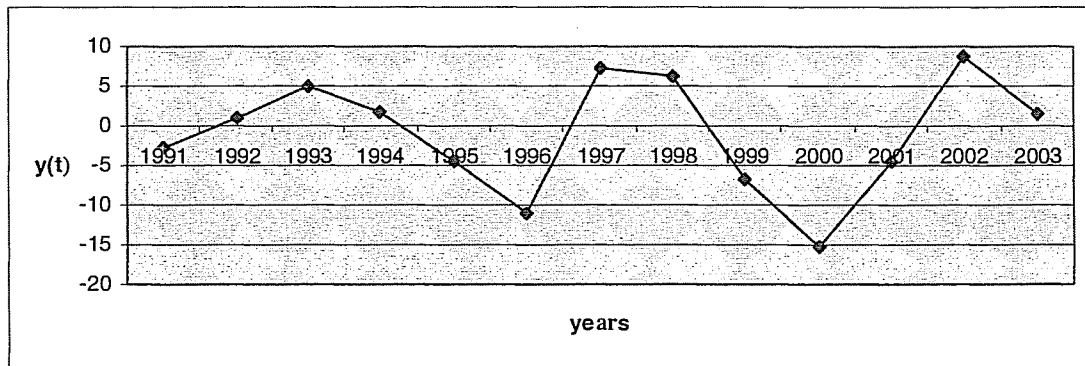
determined by means of establishing time sequence estimation method basing on rate of the total savings to the national income in turkey during the period between 1990 and 2003 and the possible effects thereof over the mortgage interest rates in the following table.

Chart 5. Personal Savings Rate In Turkey 1990-2003



Kaynak: Hazine Müsteşarlığı(2005) Ve TÜİK (2006)

Chart 6. Personal Savings Rate Volatility In Turkey 1990-2003



4. CONCLUSION

High unemployment rate rises the risk of repayments. Unemployment rate in turkey is not expected to fall in the near future therefore this fact becomes a resistance in downfall of mortgage foreclosure rate. If the real esatate has been purchased by using a high percentage of credit, such case indicates a potential difficulty in repayment and deemed as an important risk factor

by the lenders. Since credits which are the subject of a legal proceeding is very important for clarifying the question and this credits are rising, it can be said that this factor can rise the mortgage foreclosure rate. Low rate of personal savings shall increase the demand to mortgage credits therefore can increase the morgage foreclosure rate both theoretically and empirically. From these findings above in the article it can easily be said

that potential risks mentioned above are a big risk factor in determining the mortgage foreclosure rate in turkey.

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