

Identification of Effective Factors on Admitting the Secondary Market of Housing Mortgage for Housing Finance in Tehran Province

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Abstract: Secondary mortgage is the bridge between money and capital markets. Activating secondary market of housing mortgage allows utilizing stagnant resources of primary market of housing mortgage and equipping the new sources in the housing sector in order to enter into facilities cycles. The experience of other modern countries also shows that secondary market, as a channel for driving liquidity to the housing sector is the fundamental solution to eliminate such a constraint and expand housing required financial market. The present study aims to assess effective factors on success of admitting secondary market of housing mortgage in Tehran province. The statistical universe of the study included experts at housing field in Tehran province as a total number of 204 persons. However, according to Morgan table, the statistical sample was specified as 132 persons. The data collection tools included as follows: review of documents and evidences as well as researcher made questionnaire consisting of 37 measures based on Likert scale and interviews with scholars in the financial and housing sectors. The research method here is correlational and it is applied in terms of objective. In this research, descriptive statistics and inferential statistics were used for data analysis. For evaluation of factors, the collected data was analyzed using statistical tests compatible with the hypotheses (one sample t-test and regression) by the software package SPSS. The results indicate effectiveness of four factors (cultural-normative, religious-ideological, legal-structural and educational-information) on secondary market of housing mortgage.

Key words: Secondary market of housing mortgage, housing finance, cultural factors, religious factors, structural factors

INTRODUCTION

The housing sectors is a pioneer in every economy. Paying attention to this sectors leads to deep social-cultural factors is of high economic importance and serves as the growth and development engine. This sector strongly affects variations in gross domestic product and economic fluctuations by making economic growth and employment in housing and building sectors and dependent sectors as well as extensive backward and forward linkage through impact on consumption and investment. Hence, in economic crisis and seriousness of the unemployment circumstances, the states take advantage of this sector as engine of growth and employment generator.

Equipping financial resources of the housing in diverse countries is conducted in different ways; however, there are generally two types of housing finance system:

- Developed housing finance system which is strongly relied on capital market and supplies housing in suitable form for the public

- Traditional housing finance, in undeveloped or less developed countries, is often based on the banks. Such markets are difficult to be accessed by the public (Hasan, 2008)

The developed countries, particularly the US and European countries, have solved this problem by broadening and deepening mortgage market through establishment of secondary market of housing mortgage. Also, they have provided a proper potential for expansion of this sector along with revolutions in financial markets and instrumental innovations.

Secondary market of housing mortgage backs to 1983 when The US Congress founded Federal National Mortgage Association (the first governmental company) in order to provide required liquidity of housing market and make secondary market in great crisis era. In 1968, this company was divided into two separate entities including Government National Mortgage Association that supports lower income strata and Fannie Mae. The mentioned company along with federal home loan

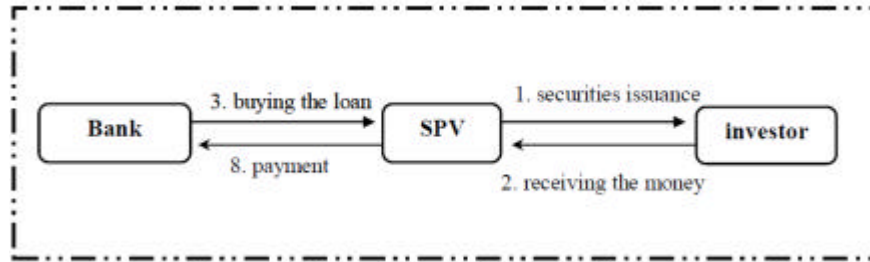


Fig. 1: The whole process of securitization of bank assets

Mortgage Corporation (FHLMC) which was founded by congressional authorization and operates with private capital are known as the major active companies in secondary market of housing mortgage. In 1990s, the European mortgage markets experienced considerable changes, as well. However, this market is still in its traditional form due to lack of development and deepening of financial markets (Kioumars, 2005).

The capital market plays no role in Iranian housing finance and the finance system is based on the banks and short-term market of money. Limitations and deficiencies of the current system and extension of housing need in the country have made the finance a serious crisis for low-income strata. Accordingly, secondary market of mortgage has been operated to meet the challenges of housing finance in developed and some developing countries. Therefore, according to necessity of making secondary market of housing mortgage, the effective factors on admitting such a market in Iran need to be studied and analyzed for efficient implementation of the discussed market.

Theoretical basics and the background: The mortgage market is called to a market where funds are equipped and assigned. Mortgage loan is one of the fundamental products of the mortgage market. This loan is paid to applicant for securitized immovable property (residential and non-residential) and guarantees an agreement between lender and borrower based on which the mentioned assets are pledged by the lender in order to guaranty repaying the load and its interest. The mortgage market is divided into two primary and secondary ones, according to its factors and functions (Sayyah and Safari, 2014).

In the primary mortgage market, the main loan is provided for the applicant while in the secondary mortgage market, the liquidity is entered into the former market through purchase of mortgage packages and issuance of mortgage-backed securities. In the latter market, the concept of the words are changed in such a way that credit notes and paper mortgage can be exchanged and lender and investor will play the role of seller and buyer, respectively. The structure of primary

mortgage market is an important factor for development of secondary one. Additionally, the mortgage should be an attractive investment whose rate should be determined in the market and the real rate must be fixed. Also, the cash flow is required to be predictable for investor and finally mortgage market should be in a step of development to justify the costs caused by infrastructures of secondary market (Kioumars, 2005).

In fact, the secondary mortgage market should be a market in which contract is transformed to liquidity through granted mortgage loans by the banks, funds and builders.

Set up and establishment of secondary mortgage market required existence of the primary one. Issuance of mortgage securities process is initiated from money market and the reaches capital market. After identification of the customer and his/her credit risk analysis, the bank grants a loan and receives the installments in prescribed deadlines. At the next step for the finance, the bank sells its receivables to an intermediary company and receives the fund from Special Purpose Vehicle (SPV) according to the regulations. The SPV issues the securities based on these receivables and by this way, in addition to finance, it gains the profit of this activity as certain commissions.

Generally, in process of assets (including mortgage loans) securitization, the company/institution requiring finance applies for founding intermediary company. The intermediary company issues assets-backed debt securities to provide required funds for buying the above-mentioned assets and then presents the securities for investors. Then it pays the funds obtained from sale of debt securities to the bank for purchase of financial assets. The investors who have bought assets-backed debt securities, will earn efficiency through the cash-flows resulted from financial assets (loans). The following chart shows the general process of securitization of bank assets.

The above mentioned descriptions are seen in secondary market or mortgage market while first of all, primary market of loan should be paid into attention. Shown in Fig. 1. In other words, the primary market has caused secondary market of mortgage emergence.

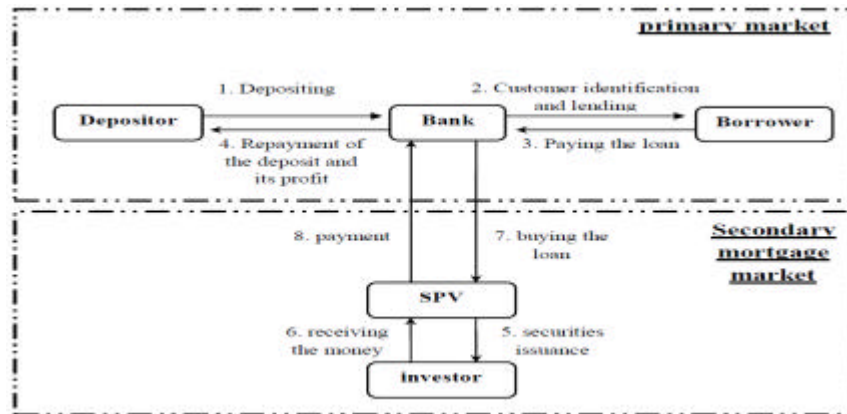


Fig. 2: Whole process of issuance of Mortgage-Backed Securities (MBS)

Hence, the following chart tries to show whole process of issuance of mortgage-loans backed securities.

Therefore, the issuance process starts in money market and then reaches capital market. As it can be seen in Fig. 2, after customer identification and his/her credit risk analysis, the bank grants a loan and receives the installments in prescribed deadlines. At the next step for the finance, the bank sells its receivables to an intermediary company and receives the fund from (SPV) according to the regulations. The SPV issues the securities based on these receivables and by this way, in addition to finance, it gains the profit of this activity as certain commissions.

Advantages of secondary mortgage market: The secondary mortgage market aims to flow sufficient liquidity for mortgage market and mortgage lender (e.g., Housing Bank) can release its funds by selling granted mortgage loans and lend more mortgages. In this way, it can also play a more considerable role in housing finance of middle-and low-income groups.

By establishment of secondary mortgage market, the households can finance long-term housing hire purchase on a wider scale. Housing sector capital may be linked to additional economic sectors by expansion of secondary housing market. Through purchase of related securities, this tools can allow contribution of the people absent in construction or housing purchase area. Generally, establishment and enhancement of secondary mortgage market provide the following advantages:

- Reduced barriers, reduced costs and increased opportunities for all segments to purchase housing
- Funding for primary mortgage market
- Long-term finance for housing purchase
- Introduction of new financial tools such as Mortgage-Backed Securities (MBS)

- Development and prosperity of financial markets
- Assisting the governments to provide housing for low-income and vulnerable people (Nadali, 2008)

Research history: Mousavian, in a study entitled “securitization of bank assets in interest-free banking”, looks for introduction of new financial tools through which banks can apply for financing by capital market. This study designs proper financial tools for securitization of bank assets and explains the corresponding characteristics in Iranian banking including: first, it should be juridical acceptable. Second, it should comply with Iranian monetary and financial regulations. And, third role of it should not result in crisis, given the role of this tools in recent financial crisis. Finally, for secondary mortgage market, Murabaha (Interest sale) securities and hire-rent were introduced and assessed.

Karam and Farahnaz (2015), in the study “Effect of secondary mortgage market for financial assessment of the banks using housing mortgage model in Iran”, study theoretical basics of secondary mortgage market. Then, according to current conditions and potential opportunities which are provided through secondary mortgage market, they economically evaluate and justify this market.

Gholozadeh (2003), in their investigation entitled “an approach for economic evaluation of secondary mortgage market”, compares and reviews fundamental indices for secondary mortgage system effects assessment in diverse countries. This study ends up in this result that establishment of secondary mortgage market requires behavior optimization by three important entities including: households applying for a loan, mortgage bank, investor or issuer of mortgage securities. Also, legal framework is mentioned as the required condition for establishment of secondary mortgage market.

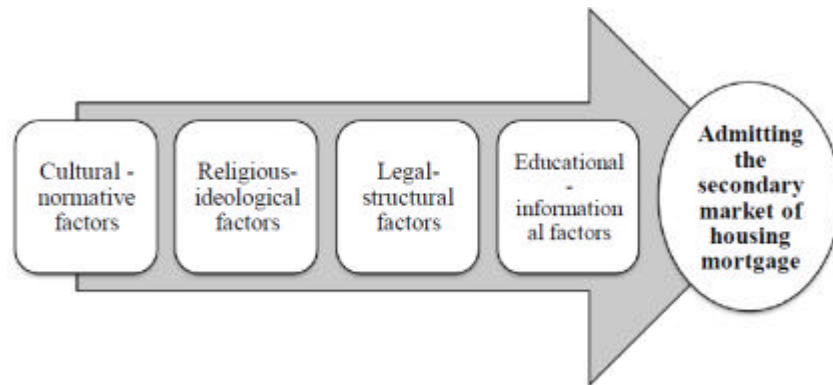


Fig. 3: Conceptual model of the research

Alinaghi *et al.* (2013), in a study entitled “A comparative study of housing finance systems in Iran and Denmark” study housing methods in the globe and then recognize housing finance systems in specialized banks of Iran and Denmark. The results indicate that housing finance system in Denmark can be a good pattern to make a proper housing finance system and secondary mortgage market in Iran due to clear and consistent rules, orderly and lawful secondary mortgage market, interest rate liberalization, private financial institutions, lower interest, longer repayment time, the possibility of buyback, ease of obtaining credit and loan, keep the balance in the system, issuance of mortgage-backed securities and competitive structure of the market for investors to buy securities.

Hypotheses and conceptual pattern

Main hypothesis: The four factors (cultural-normative, religious-ideological, legal-structural and educational-information) are effective on public admission of secondary mortgage market in Iran:

- Cultural-normative factors are effective on public admission of secondary mortgage market
- Religious-ideological factors are effective on public admission of secondary mortgage market
- Legal-structural factors are effective on public admission of secondary mortgage market
- Educational-information factors are effective on public admission of secondary mortgage market

Conceptual model: The conceptual model research is shown in Fig. 3.

MATERIALS AND METHODS

This study is applied and descriptive in terms of objective and nature, respectively because it was conducted aiming to utilize findings for efficient implementation of secondary mortgage market for housing

finance and addresses and explains the issue through descriptive data. This is also field survey because it evaluates effective factors on admission of secondary mortgage market according to the four aspects (cultural-normative, religious-ideological, legal-structural, and educational-information) using questionnaire. In order to specify validity of the questionnaire, 10 copies of it were distributed among experts and scholars in housing area and then their corrective comments were applied and finally following the required correction, it was distributed in the statistical universe. In order to specify reliability of the questionnaire, Cronbach’s alpha coefficient was used by which the score 88% was obtained. The statistical universe of the study included experts at housing field in Tehran province as a total number of 204 persons. However, according to Morgan table, the statistical sample was specified as 132 persons who were selected randomly. The data collection tools included as follows: review of documents and evidences as well as researcher made questionnaire consisting of 37 measures based on Likert scale and interviews with scholars in the financial and housing sectors. For analysis of the collected data, the statistical tests compatible with the hypotheses (one sample t-test and regression) were used by the software package SPSS for evaluation of the factors impact.

RESULTS AND DISCUSSION

Data analysis and findings: The correlation coefficient was used to test the hypotheses. However, prior to conducting correlation test, data normality test was carried out.

Data normality test: Prior to any test which is conducting assuming normal data, the data normality should be assured. Therefore, first of all, data normality test was carried out. For this purpose, Kolmogorov-Smirnov test was used. Statistical hypotheses are set as follows shown in Table 1.

Table 1: Data normality test (Kolmogorov-Smirnov test)

Factors	N	Mean	SD	Kolmogorov-Smirnov	Significance	Results
Admitting secondary market	132	3.70	0.525	2.178	0.33	Normal
Cultural-normative factors	132	3.72	0.389	1.674	0.12	Normal
Religious-ideological factors	132	3.68	0.425	1.953	0.41	Normal
Legal-structural factors	132	3.53	0.61	1.839	0.37	Normal
Educational-information factors	132	3.88	0.517	4.088	0.25	Normal

Table 2: One sample t-test results for the hypothesis-1

Variable	Mean	SD	t-value	Confidence level
The four factors	4.15	0.766	19.22	0.00

The output of Kalmogorov-Smiranov test shows that in all cases, a significance of >0.05 was obtained. It means the normal distribution for which parametric test shall be employed, thereby one-sample t-test should be used.

Hypothesis-1 test: The hypothesis is as follows:

- The four factors (cultural-normative, religious-ideological, legal-structural and educational-information) are effective on public admission of secondary mortgage market for housing finance in Tehran province

Given the information of Table 2 and according to $\alpha = 0.05$ and significance of 0.00, the mean secondary mortgage market admission significantly differs the desired mean which is 3, thus the hypothesis H_0 is rejected and H_1 is accepted and the four factors are concluded to result in admitting secondary market of housing mortgage.

Hypothesis-2 test: The regression test was used to assess impact of cultural-normative factors on admitting secondary market of housing mortgage. The hypothesis is as follows:

- Cultural-normative factors are effective on admitting secondary market of housing mortgage in Tehran province

The results of the test on this hypothesis are presented in Table 3. The results show that standard beta coefficient between the two variables cultural-normative factors and admitting secondary market of housing mortgage was obtained 0.67. The t-statistics was found 1.99 which indicates significance of observed correlation. Therefore, with a confidence of 95%, cultural-normative factors have a direct impact on admitting secondary market of housing mortgage. Considering regression coefficient of cultural-normative factors, the regression equation is set as follows:

$$y' = 0.67$$

Hypothesis-3 test: The regression test was used to assess impact of religious-ideological factors on admitting secondary market of housing mortgage. The hypothesis is as follows:

- Religious-ideological factors are effective on admitting secondary market of housing mortgage in Tehran province

The results of the test on this hypothesis are presented in Table 4. Regression equation with $F = 33.27$ and significance level of 0.02 which is <0.05 is significant. Therefore, the assumption of linear relation exists between the variables.

The regression analysis results using step-wise method show that regression coefficient for religious-ideological factors is 0.473 ($\beta = 0.473$), t-statistics is $t = 2.64$ and significance level is 0.02 which is less than 0.05 thus it is significant. In this model, the constant value did not get significant. Therefore, considering regression coefficient of religious-ideological factors, the regression equation is set as follows:

$$y' = 0.473 \text{ (religious factors)}$$

Hypothesis-4 test: The regression test was used to assess impact of legal-structural factors on admitting secondary market of housing mortgage. The hypothesis is as follows:

- Legal-structural factors are effective on admitting secondary market of housing mortgage in Tehran Province

The results of the test on this hypothesis are presented in Table 5. Regression equation with $F = 32.47$ and significance level of 0.04 which is <0.05 is significant. Therefore, the assumption of linear relation exists between the variables.

The regression analysis results using step-wise method show that regression coefficient for legal-structural factors is 0.54 ($\beta = 0.54$), is $t = 4.4$ and significance level is 0.04 which is <0.05 thus, it is significant. In this model, the constant value was

Table 3: Regression analysis results for cultural-normative factors and admitting secondary market of housing mortgage

Criterion variables	Prediction variable	Correlation of MR	RS coefficient of determination	Ratio of F probability P	Regression coefficient
Admitting secondary market of housing mortgage	Cultural-normative factors	0.61	0.30	F = 31.47 P = 0.00	$\beta = 0.67$ t = 1.99 p = 0.00

Table 4: Regression analysis results for religious-ideological factors and admitting secondary market of housing mortgage

Criterion variables	Prediction variable	Correlation of MR	RS Coefficient of determination	Ratio of F probability P	Regression coefficient
Admitting secondary market of housing mortgage	Religious-ideological factors	0.51	0.30	F = 33.27 P = 0.02	$\beta = 0.473$ t = 2.64 p = 0.02

Table 5: Regression analysis results for legal-structural factors and admitting secondary market of housing mortgage

Criterion variables	Prediction variable	Correlation of MR	RS coefficient of determination	Ratio of F probability P	Regression coefficient
Admitting secondary market of housing mortgage	Legal-structural factors	0.29	0.44	F = 32.47 P = 0.04	$\beta = 0.54$ t = 4.4 p = 0.04

Table 6: Regression analysis results for educational factors and admitting secondary market of housing mortgage

Criterion variables	Prediction variable	Correlation of MR	RS Coefficient of determination	Ratio of F Probability P	Regression coefficient
Admitting secondary market of housing mortgage	Educational factors	0.33	0.51	F = 34.34 P = 0.00	$\beta = 0.39$ t = 4.6 p = 0.00

obtained 1.37. Therefore, considering regression coefficient of legal-structural factors, the regression equation is set as follows:

$$y' = 1.37 + 0.54 (\text{legal-structural factors})$$

Hypothesis-5 test: The regression test was used to assess impact of educational factors on admitting secondary market of housing mortgage. The hypothesis is as follows:

- Educational factors are effective on admitting secondary market of housing mortgage in Tehran province

The results of the test on this hypothesis are presented in Table 6. Regression equation with F = 34.34 and significance level of 0.00 which is less than 0.05, is significant. Therefore, the assumption of linear relation exists between the variables. The regression analysis results using step-wise method show that regression coefficient for educational factors is 0.39 ($\beta = 0.39$), t = 4.6 and significance level is 0.00 which is <0.05 thus it is significant. In this model, the constant value was obtained 1.41. Therefore, considering regression coefficient of educational factors, the regression equation is set as follows:

$$y' = 1.41 + 0.39 (\text{educational factors})$$

CONCLUSION

Given the hypothesis-1 and Table 2, the results indicated that the four factors (cultural-normative, religious-ideological, legal-structural and educational-information) are effective on public admission of secondary mortgage market in Tehran province. These results are in line with those of Sayyah and Safari (2014).

The hypothesis-2 evaluates impact of cultural-normative factors on admission of secondary mortgage market in Tehran province. The results derived from Table 3 approve impact of cultural-normative factors on admission of secondary mortgage market in Tehran province.

The hypothesis-3 evaluates impact of religious-ideological factors on admitting secondary mortgage market in Tehran province. The results derived from Table 4 approve impact of religious-ideological factors on admission of secondary mortgage market in Tehran province. These results are in line with Mousavian (2010)

The hypothesis-4 evaluates impact of legal-structural factors on admitting secondary mortgage market in Tehran Province. The results derived from Table 5 approve impact of legal-structural factors on admission of secondary mortgage market in Tehran Province. These results are parallel with Karam and Farahnaz (2015), Gholozadeh (2013) and Alinaghi *et al.* (2013).

The hypothesis-5 evaluates impact of educational factors on admitting secondary mortgage market in

Tehran province. The results derived from Table 6 approve impact of educational factors on admission of secondary mortgage market in Tehran province.

In addition and as a future research, the significant factors obtained from this research can be ranked using the Multiple Criteria Decision Making (MCDM) methods provided by Mobin *et al.* (2015); Skeete and Mobin (2015).

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