**The Study of Iranians Unwillingness Toward Universal Life Insurance and Introducing Housing Promise as Life Insurance Benefit to Increase Market Demand**

**Dr. Ghadir Mahdavi1 ,Jaber Alipour 2,Jalal Alipour 3**

|  |  |
| --- | --- |
| **Abstract** | This paper discusses the most important reasons of the fact, why Iranians don’t have enough willingness to buy a universal life insurance. we provide solution to increase market demand as a result, the business improves. This research hypothesized that the main reason of Iranians unwillingness toward universal life insurance, is negative effects of inflation. To know either this assumption corrects or not, we design a proper questionnaire. Then we test our hypothesis through ratio test. Then we test our hypothesis through ratio test. Consequently, we see that our first hypothesis was true. Then, we suggest a way to eliminate the negative effects of inflation from universal life insurance policies. In this research, we will introduce one new life insurance policy based on housing promise. Our research shows that if we use this insurance policy it will cause an increase in Iranians willingness toward buying life insurance. |
| **Keywords** | Business Improvement, Universal Life Insurance, Inflation, Housing Promise, Unwillingness, Ratio Test |

**Introduction:**

Life insurance has become an increasingly important part of the financial sector over the past 50 years, providing arrange of financial services for consumers and becoming a major source of investment in the capital market. Nevertheless, it doesn’t have real place among Iranians. We hypothesize one of the most important reasons of this failure is because of high inflation rate in the economy. We will show how inflation affects the universal life insurance demand and how elimination of its negative effects can improve it.

In developed countries, life insurance is one of the best way which is used for converting people's small savings to product capitals and to decrease inflationary costs. Life insurance is the best way to provide a minimum saving for buyers who can use it in future when they became old and disable to have a job or do an economic activity.

In low-level income countries, extension of life insurance among people is more vital. Unfortunately, decreasing purchasing power of Iranian Rial caused to eliminate advantages of life insurance for people and make them indifferent to this saving method. We hypothesize that the main reason of Iranian unwillingness toward universal life insurance is negative effects of inflation. In this thesis, no econometric model is required.

In this paper, we obtain a new policy that is based on housing promise. In this solution, we replace life insurance policy's benefit with housing promise and we will try to eliminate bad effects of inflation on benefit of life insurance policy through this method.

Then we use a questionnaire to test our hypothesis. First we calculate benefits for our two policies (universal life insurance and housing promise as the benefit of policy) then we give these results to interviewees and ask them to answer this question: Does this method increase your willingness toward purchasing life insurance?

We have two hypotheses which are listed below: 1) the main reason for Iranians unwillingness toward purchasing universal life insurance is long-term inflation in Iranian economy. 2) Housing Promise as the benefit of policy can stimulate the willingness for purchasing life insurance.

In section 2, literature reviews have been stated. In section 3, we discuss about Life insurance status in Iran and reasons of Iranians unwillingness toward life insurance. We see in this chapter whether our hypothesis about main reason of their unwillingness is true or not. Then in section 4 we suggest an efficient solution to eliminate this problem and make life insurance policies more interesting for people. Indeed, we will explain "Housing Promise as Life Insurance Benefit" method in section 4 completely. To clarify the issue, we consider a numerical example in section 5. Finally, the results presented in section 6.

**Literature Review:**

James C. H. Anderson takes an article about universal life insurance before the Seventh Pacific Insurance Conference in September 1975. Title of this article was “The Universal Life Insurance Policy”. He introduces universal life insurance policy for what the author calls “a fully flexible alternative to conventional life insurance contracts, designed to meet the needs and demands of the life insurance market in 1975 and beyond”.

A lot of researches are done about effects of inflation on life insurance demand in Iran. Rasoul Tajdar (1996), Khorami (1997), Ebrahim Kargar (1997), Fathizadeh (1997), Jafarzadeh (1997), Sheidaei Rad (1998), Dr Pejhouyan & Mir Taher Mir Partoei (2003) and Jalal Lavasani (2005) in their researches concluded that inflation has a negative effect on the demand for life insurance. Firouzeh Azizi (2005) in her research concluded that inflation has a positive effect on the demand for life insurance. Niari (1999) and Dr Mehr Ara & Mohammad Azam Rajabian (2006) in their researches concluded that the relationship between inflation and demand for life insurance is not significant.

Also, many researches are done about effects of inflation on life insurance demand in the world. Neumann (1969) for premium, Diacon (1980), Browne and Kim (1993), Outreville (1996), Ward and Zurbruegg (2002), Mahdavi (2002, 2005) concluded that inflation has a negative effect on the demand for life insurance. Neumann (1969) for in force, Lee and Whitaker (1971), Beenstock et al (1986) concluded that inflation has a positive effect on the demand for life insurance.

Dr Mahdavi (2009) suggests these Strategies for coping with inflation: 1) Sales of life insurance with the Ascending benefit 2) Insurer's participation in the profits of the insurance company's investments 3) choosing a substitute for benefit of life insurance policy.

Iran insurance company decided to perform a great plan which was named "Novin Plan" in 1959. The purpose of the company was neutralized bad effects of inflation on life insurance policies. Therefore the company decides to replace cash benefit by a house. The value of this house at the beginning of contract must be equal to benefit of his life insurance policy. At this contract company promises to life insurance policy buyers that they will give to insured a house with certain characteristics instead of benefit of his life insurance policy which its purchasing power decreased compared to beginning of contract. Value of this house must be guaranteed by company. Unfortunately, this plan failed at the middle of its way.

The following points may be noted as the reasons for this failure: 1) The project was major and requires a lot of funding. 2) Individual disagreements of Cabinet members. 3) Insurance Company had entered the building and construction Himself while construction was not specialized work of insurance company. 4) Earned premiums were not enough to fund plan.

Now, we correct these stated defects and we will introduce an alternative plan which is more complete than "Novin Plan" in this paper. Then I will study that whether these modifications in life insurance policies can increase the demand for life insurance among Iranians.

**Life Insurance in Iran:**

Unfortunately despite the importance of life insurance in the establishment of peace and make sure atmosphere for families and a considerable role in the increase in economic growth, this type of insurance activity is not prosperity in Iran. According to Sigma magazine statistics, share of total business for life insurance in our country is 8.6 percent and it is very little in comparison with 57.2 percent share of total business for life insurance in the world insurance industry. Also, our share of world market is just 0.03 percent and this is very low.

In this paper, we are going to discuss about the most important reasons of the fact that why Iranians don’t have enough willingness to buy a universal life insurance. We hypothesize that the main reason of Iranian unwillingness toward universal life insurance is bad effects of inflation. To know either this assumption correct or not, we design a proper questionnaire and we have given it to 102 persons who bought life insurance policy already and they are enough familiar with this kind of insurance. Also we give it to 102 persons who have not bought life insurance policy so far. Then we analyze each group answers. Note that according to Cochran table; sample size for ±7% precision levels where confidence level is 95% is 204. We select this number as our sample size because size of population is greater than 100,000. Results of our research shows that most important reasons of unwillingness are bad effects of inflation (82.2%), unfamiliarity (6.7%), bad effects of inflation & secure future (4.3%), secure future (3.7%), unfamiliar & inflation (2.5%) and unfamiliar & secure future (0.6%) from interviewees point of view respectively. If we define P1 as below:

Indeed P1 is our statistic for this hypothesis test. Now, we are going to do below test:

We do this test through Spss 20 software. We use binomial (ratio) test. As you see in the Table 1, p-value is equal to 0.000 for this test. This is, null hypothesis rejected with probability 0.99 and we can accept hypothesis 1. Now, we suggest a way to eliminate the bad effects of inflation from universal life insurance policies.

*Table 1: Binomial Test Output for Hypothesis 1*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | Category | N | Observed Prop. | Test Prop. | Exact Sig. (1-tailed) |
| Unwillingness Reason | Group 1 | Inflation | 175 | 0.86 | 0.51 | 0.000 |
| Group 2 | other reasons | 29 | 0.14 |  |  |
| Total |  | 204 | 1.00 |  |  |

**Housing Promise as Life Insurance Benefit:**

In this section, we have tried to offer a plan that does not have the defects of previous plan. We certainly cannot claim that this plan is complete and does not have any defect. A life insurance contract has certain characteristics like other types of policies. For example we consider death of insured as a loss in this policy. This is, the company promises to insured that when he dies give him certain amount of money as benefit of his policy. However, the benefit must be paid to the insured. But we can change its type. Also we can change our loss in policy and substitute death of insured by another thing. Now we express our suggestions briefly:

In this plan, we consider being home ownership as a loss and the house with certain characteristics as a benefit. This is, the company promises to insured that when he requires a house give him a certain house as benefit of his policy. But recognization of this reality "when an insured require a home?" is difficult. For this reason, we determine a value as loss rate regarding the interest of customers and number of policies was sold. For example, we decide to give our insured 5% the total number of sold insurance policies house annually. Indeed, suppose that 100,000 person Bought this life insurance policies. We have:

So the company buy 5000 house through forward contract and give these house to insured at end of the year by lottery. First year premiums finance total cost of buying these houses. Indeed, the premiums for first year are calculated as follows:

Which is a house forward sale cost is considered 500,000,000 R. This is, insurer take 25,000,000 R from each insured and buy 5000 house from a reputable building and construction company. Then After the end of construction of houses at end of the first insurance year, the houses are delivered to insured by lottery. But the price of these houses is increased. Amount of price difference between the beginning of year and end of year is considered as company profits in this insurance policy. Now we have 2 groups of insured: 1) People who win the lottery 2) People who lose the lottery.

In first case, the company delivers their home and they must pay annually premium as long as equivalence principle is established. This is, following equality is established:

EPV of benefit outgo = EPV of net premium income

Premiums are determined using the following formula:

(1)

Where is equal to total cost at year n and is number of insured at year n. For knowing that how many years an insured must pay premium, we will do the following steps:

Step 1:

We calculate time value of annually premiums that is paid at the beginning of the contract until the benefit year at end of year d moment. We have:

(2)

where is future value of paid premiums at end of the benefit year moment.

Step 2:

Now, we get the difference between up to date price of the house and future value of paid premiums (). This is:

(3)

Where is the benefit for year d and is equal to debt of insured to the insurance company at end of the benefit year moment that should be settled within the next few years.

Step 3:

Insured must pay annually premium until became equal to zero. This is, present value of future premiums at end of the benefit year moment must be equal to . Indeed, we want to find n which makes the following equality true:

(4)

To clarify the issue, we consider the following example:

**Numerical Example:**

The insurer presents an insurance policy which under this agreement, insurer promised to cover the risk of the insured doesn't became a landlord in return for the premium received annually. We assume that 10,000 people buy this insurance policy and annually loss rate is equal to 0.05. We have:

(5)

Where is number of required houses at first insurance year, is number of insured at first year and r is loss rate. We assume each house buying cost at first year is equal to 500,000,000 R. Thus premium for first year is equal to:

(6)

The insurer buys 500 unprepared houses (by forward sell) through total premium. When all the houses were built at end of the year, the insurer select 500 insured through lottery and give each of them a house. Indeed, update price of this house is benefit of this insurance policy. To counteract the risk of falling house prices and consequently the financial loss to the insurance company we can use a fixed value for price difference between unprepared and prepared house. We assume this value is equal to 20 percent of each house buying cost. This is, benefit for insured who win the lottery at first insurance year is equal to:

(7)

Now, we can calculate debt of insured at end of first year through formula (2) and (3). We have:

As we mentioned before, the insured must pay annually premium until became equal to zero. This is, present value of future premiums at end of the benefit year moment must be equal to . Also, we use i =0.1 for time value of money calculations. Annual growth in housing prices can be positive or negative or unchanged. For convenience, we assume that mean of annual growth in housing price is equal to 5 percent.

*Table 2: Housing Promise Policy for an Insured That Win the Lottery at First Insurance Year*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **k** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|  | 10,000 | 11,000 | 12,100 | 13,310 | 14,641 | 16,105 | 17,716 | 19,487 | 21,436 | 23,579 | 25,937 | 28,531 | 31,384 | 34,523 | 37,975 | 41,772 | 45,950 | 50,545 | 55,599 | 61,159 | 67,275 |
|  | 500 | 550 | 605 | 666 | 732 | 805 | 886 | 974 | 1,072 | 1,179 | 1,297 | 1,427 | 1,569 | 1,726 | 1,899 | 2,089 | 2,297 | 2,527 | 2,780 | 3,058 | 3,364 |
|  | 500,000,000 | 525,000,000 | 551,250,000 | 578,812,500 | 607,753,125 | 638,140,781 | 670,047,820 | 703,550,211 | 738,727,722 | 775,664,108 | 814,447,313 | 855,169,679 | 897,928,163 | 942,824,571 | 989,965,800 | 1,039,464,090 | 1,091,437,294 | 1,146,009,159 | 1,203,309,617 | 1,263,475,098 | 1,326,648,853 |
|  | 250,000,000,000 | 288,750,000,000 | 333,506,250,000 | 385,199,718,750 | 444,905,675,156 | 513,866,054,805 | 593,515,293,300 | 685,510,163,762 | 791,764,239,145 | 914,487,696,212 | 1,056,233,289,125 | 1,219,949,448,940 | 1,409,041,613,525 | 1,627,443,063,622 | 1,879,696,738,483 | 2,171,049,732,948 | 2,507,562,441,555 | 2,896,234,619,996 | 3,345,150,986,096 | 3,863,649,388,940 | 4,462,515,044,226 |
|  | 25,000,000 | 44,250,000 | 46,462,500 | 48,785,625 | 51,224,906 | 53,786,152 | 56,475,459 | 59,299,232 | 62,264,194 | 65,377,403 | 68,646,274 | 72,078,587 | 75,682,517 | 79,466,642 | 83,439,975 | 87,611,973 | 91,992,572 | 96,592,201 | 101,421,811 | 106,492,901 | 111,817,546 |
|  | 600,000,000 | 630,000,000 | 661,500,000 | 694,575,000 | 729,303,750 | 765,768,938 | 804,057,384 | 844,260,254 | 886,473,266 | 930,796,930 | 977,336,776 | 1,026,203,615 | 1,077,513,796 | 1,131,389,485 | 1,187,958,960 | 1,247,356,908 | 1,309,724,753 | 1,375,210,991 | 1,443,971,540 | 1,516,170,117 | 1,591,978,623 |
|  | 27,500,000 | 44,250,000.00 | 86,488,636.36 | 126,807,334.71 | 165,293,364.95 | 202,030,030.18 | 237,096,846.99 | 270,569,717.58 | 302,521,094.06 | 333,020,135.23 | 362,132,856.36 | 389,922,271.98 | 416,448,532.34 | 441,769,053.60 | 465,938,642.07 | 489,009,612.89 | 511,031,903.21 | 532,053,180.34 | 552,118,944.87 | 571,272,629.19 | 589,555,691.50 |
|  |
|  | 572,500,000.00 | 528,250,000.00 | 486,011,363.64 | 445,692,665.29 | 407,206,635.05 | 370,469,969.82 | 335,403,153.01 | 301,930,282.42 | 269,978,905.94 | 239,479,864.77 | 210,367,143.64 | 182,577,728.02 | 156,051,467.66 | 130,730,946.40 | 106,561,357.93 | 83,490,387.11 | 61,468,096.79 | 40,446,819.66 | 20,381,055.13 | 1,227,370.81 | -17,055,691.50 |

(8)

Now, the insured can pay more premiums because he became homeowner and he doesn't require paying rent for house after winning the lottery. Because remaining installments of premium finish soon, we consider an extra premium after the acquisition of benefit. We assume amount of this extra premium is 3 percent of year k-1 benefit for this example. Thus we have:

We use excel software to calculate table of this insurance policy for an insured who win the lottery in first year. You can see these calculations result in Table 2.

People who can't win the first lottery wait for next years. We try to present all possible cases in separate tables. As you see in below tables, maximum waiting time in order that the insured became a landlord is 16 years. In this example, if he can't win the lottery in first 15 years, we have below inequality at insurance year 16:

For this reason, the insurer must choose him without lottery at year 16. We present complete settlement time based on benefit year in Table 3. For example according to this table, the insured who take the benefit in insurance year 9 have to pay premium for 8 another years.

*Table 3: Complete Settlement Time Based on Benefit Year*

|  |  |
| --- | --- |
| Benefit year | Complete settlement time ( ) |
| 1 | 20 years |
| 2 | 18 years |
| 3 | 17 years |
| 4 | 15 years |
| 5 | 14 years |
| 6 | 12 years |
| 7 | 11 years |
| 8 | 10 years |
| 9 | 8 years |
| 10 | 7 years |
| 11 | 6 years |
| 12 | 5 years |
| 13 | 3 years |
| 14 | 2 years |
| 15 | 1 year |
| 16 | Has been settled already |

Then, we give these results to interviewees and ask them to answer this question: "Does Your Willingness Increase If An Insurance Company Present Life Insurance Policy through Housing Promise?". Our research shows that, using Housing Promise as benefit in life insurance policy increase Iranians willingness toward life insurance (85.8%) from interviewee's point of view. If we define P2 as below:

Indeed P is our statistic for this hypothesis test. Now, we are going to do below test:

:

:

We do this test through Spss 20 software. We use binomial (ratio) test. As you see in the Table 4, p-value is equal to 0.000 for this test. Consequently, null hypothesis rejected with probability 0.99 and we can accept hypothesis 2. This is, Housing Promise as the life insurance benefit can increase Iranians willingness toward life insurance.

*Table 4: Binomial Test Output for Hypothesis 2*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | |
|  | | Category | N | Observed Prop. | Test Prop. | Exact Sig. (1-tailed) |
| Housing  Promise | Group 1 | Yes | 175 | 0.86 | 0.51 | 0.000 |
| Group 2 | No | 29 | 0.14 |  |  |
| Total |  | 204 | 1.00 |  |  |

**Conclusion and Suggestion:**

In this paper we studied the status of life insurance Demand in Iran. We saw it is very low and we must try to improve this critical status. Then we discussed about the most important reasons of the fact that why Iranians don’t have enough willingness to buy a universal life insurance. Our first hypothesis in this research was "The main reason for Iranians unwillingness toward purchasing universal life insurance is long-term inflation in Iranian economy". To know if this assumption correct or not, we designed a proper questionnaire.

Then we tested our first hypothesis by ratio test. Consequently, we became sure that our first hypothesis is true. This is, most important reason for Iranians unwillingness toward purchasing universal life insurance is long-term inflation in Iranian economy. But what can we do now for solving this problem. We suggest a way for elimination the negative effects of inflation from universal life insurance policies. In this research, we introduce one new life insurance policy based on Housing Promise. . The following points may be noted as the advantages of this plan: 1) Received premiums fully cover the project costs. 2) Insurance Company doesn't enter the building and construction Himself and they get help from a professional house construction company. 3) Those who receive the Benefit can increase amount of their premiums because they do not need to pay rent. Consequently, number of years that they have to pay premium will be decreased. 4) Benefit will bring appropriate annual interest for insured who get his benefit because of rising home prices. 5) This plan collects the peoples cash and moves them to an appropriate direction that to be beneficial to the economy. Indeed, this plan excludes the cash enters to markets such as currency market and creating a crisis in this section of economy.

Indeed this paper shows that: 1) Share of total business for life insurance in our country is 8.6 percent and it is very little in comparison with 57.2 percent share of total business for life insurance, in the world insurance industry and this value must be increase in future. 2) The main reason for Iranians unwillingness toward purchasing life insurance is long-term inflation in Iranian economy. 3) If we can eliminate bad effects of inflation from our life insurance policies, people willingness toward life insurance will increase. They will buy more policies. Consequently, number of insured will be increased and the insurance companies could collect more and more premium. They will invest these capitals and obtain more interest through investing. 4) Housing Promise as the life insurance benefit eliminates the negative effect of inflation. Thus, this paper suggests Housing Promise to be used as the life insurance policies benefit.

results of research are different from each other and after about six decades of despite the presentation of various theories In the field of capital structure, a comprehensive model has not yet been developed that is able to fully describe and predict the financing behavior and capital structure of companies. By studying similar researches, it can be seen that almost all researches have tried to test one of the theories of capital structure and certain variables through linear regression processes or neural networks and no comprehensive study has been done in this field. In this research, we have tried to identify the most important variables by reviewing the literature and provide a comprehensive model. And with the systemic dynamics approach, all the factors affecting the capital structure have been studied dynamically and non-linearly. The results of previous studies show that none of the current theories and models alone is able to fully explain the factors affecting the optimal structure of corporate capital because some of these theories believed that debt is in the capital structure of companies effective. While others believe is has no effect. Thus, it seems that the biggest problem is the lack of a comprehensive theory that can fully explain the financing behavior and capital structure of companies, so in this study, with a dynamic approach, a system for modeling this issue is selected. This problem has been solved largely. It is suggested that this modeling be completed by adding newer variables and simulated and tested in the real world.

**References:**

* *David C. M. Dickson, Mary R. Hardy, Howard R. Waters/Actuarial Mathematics for Life Contingent Risk/Cambridge*
* *Gh. Mahdavi, (2010)/The study of quantitative and quality factors that have effect on life insurance demand and solutions for extension of its dominance in Iran insurance industry/Allameh Tabatabaei University, Iran*
* *Investopedia Website:* [*www.investopedia.com*](http://www.investopedia.com/)
* *J. Alipour., 2012. The Study of Iranians Unwillingness toward Universal Life Insurance and Suggesting Efficient Solutions, M. S. thesis, Allameh Tabatabaei Univ., Eco College of Insurance.*
* *James C. H. Anderson,(1975) /The Universal Life Insurance Policy/ Published in EMPHASIS in November 1975*
* *Joharian M. V. /Life insurance/ Iran insurance company publication*
* *Sigma magazine/World insurance in 2011/Swiss reinsurance company Ltd*
* *Wikipedia Website: En.wikipedia.org*