AN EXAMINATION OF TURKISH INSURANCE INDUSTRY IN LIGHT OF INFORMATION ASYMMETRY

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MEHMET FIRAT AYGEN

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Prof. Dr. Sencer AYATA
Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Business Administration.

Prof. Dr. F. N. Can MUĞAN
Head of Department

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Business Administration.

Assist. Prof. Dr. Adil ORAN
Supervisor

Examining Commitee Members

Assist. Prof. Dr. Adil Oran (METU) _____

Assist. Prof. Dr. Seza DANIŞOĞLU RHOADES (METU) _____

Assoc. Prof. Dr. Zeynep Önder (Bilkent University) _____

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last Name : Mehmet Fırat AYGEN

Signature :

ABSTRACT

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Aygen, Mehmet Fırat

MBA, Department of Business Administration

Supervisor : Assist. Prof. Dr. Adil Oran

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The objective of this study is to understand information asymmetry concept with its causes and consequences and its effects on insurance business especially in Turkey. Perfect markets, moral hazard, adverse selection, market signaling, and guarantee concepts are important to have a better examination of asymmetric information as a whole and there are many examples of these concepts faced in insurance sector. In order to have a closer look to Turkish insurance business, some insurance companies are chosen randomly and their general performance, types of information they demand their customers to give and the relation between them are studied. Consequently, it is seen that both companies and customers suffer from asymmetric information. However, there are, of course, some solution suggestions to decrease information asymmetry. A number of these solutions are easy to apply in Turkish market and some others are not that applicable. Therefore, it can be said that the important thing here is to find adaptable solutions not to lengthen the list and waste time by suggesting brilliant but useless ones.

Keywords: Information asymmetry, insurance, Turkish Insurance Market.

ÖZ

BİLGİ ASİMETRİLERİ KAVRAMI IŞIĞINDA TÜRK SİGORTA SEKTÖRÜNÜN BİR İNCELEMESİ

Aygen, Mehmet Fırat
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Bu çalışmanın amacı bilgi asimetrileri kavramının neden ve sonuçları ile bir bütün olarak anlaşılması ve bu kavramın özellikle Türk Sigorta Sektörü üzerindeki etkilerinin incelenmesidir. Bu çalışma kapsamında bilgi asimetrileri kavramı ile Türkiye'de ve Dünya çapında sigorta sektörü derinlemesine anlatılmış, sigorta şirketlerinin bilgi edinme politikaları ve genel durumları ile bu iki değişkenin birbirleriyle olan ilişkilerini daha yakından incelemek amacıyla rastgele bazı sigorta şirketleri seçilmiş ve incelenmiştir. Buradan yola çıkarak, hem sigorta şirketlerinin hem de müşterilerin bilgi asimetrilerinden kötü yönde etkilendiği söylenebilir. Ancak, elbette asimetrik bilgiyi azaltmanın çeşitli yolları vardır. Bu yolların bazıları gerçekten Türk Sigorta Sektörü için gayet uygulanabilir olduğu halde bazıları ciddi anlamda araştırmalar gerektirir ki bunların uygulanması da bir o kadar zordur. Bu nedenle, önemli olanın çözüm yolları listesini genişletmek değil Türk Sigorta Sektörüne adapte edilebilecek olanları hayata geçirmek olduğu da bir gerçektir.

Anahtar Kelimeler: Bilgi asimetrileri, sigorta, Türk Sigorta Sektörü.

To My Family,

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CHAPTER I

INTRODUCTION

Insurance, in general, is a way to make large financial losses more affordable by diversifying the risks of many individuals and business establishments and transfer them to an insurance company or other large group in return for a premium. Insurance business, starting from its introduction, has obtained more interest of people day by day and meanwhile the number of different types of insurance has increased. These developments are mostly caused by the amplifying risks of the changing world and raising levels of financial losses in results of realized damages. In other words, insurance business is a living business. Whenever the lifestyles, working habits, eating habits, driving style of people change, it is compulsory for insurance business to alter its overall approach and adapt itself to the new situation.

As mentioned above, insurance business always shapes itself according to needs and wants of people. First, it started with marine insurance because in those years, shipping was the most important type of transportation and there were a number of dangers for sailors. Then fire insurance started to be underwritten after occurrence of great fires in great cities. After that life insurance came into picture, since people began thinking that their life is as important and valuable as their goods. Finally, casualty insurance appeared as a new type of insurance because people required to be covered for financial losses that are caused by unpredictable damages, especially accidents and natural disasters. The list of types of insurance is getting longer day by day and coverage scope of policies are widening. In other words, many of the risks which could not be covered in the past can be transferred to the insurer now.

Since the risks that are taken by the insurer are greater now, there are more unpredictable cases. Coverage of policies is wider and thus the number of factors that may cause occurrence of damage is increased. For example, automobiles are more powerful, number of automobiles in traffic is increasing day by day and these are the factors that increase the possibility of occurrence of auto accidents. Furthermore, the number of electronic devices used in houses is larger and this raises the likelihood of fire. Also, crime rates are getting larger, eating habits of people are moving rapidly to unhealthy fast-food, smoking rate is increasing, the time that is dedicated to sportive activities is getting smaller day by day and these factors increase the rate of mortality and possibility of chronic illnesses. All of these changes cause increases in risk levels of insurance business customers and they induce more differentiation between customers with respect to their risk potentials.

The concept of insurance is very attractive and is a win-win situation. For risk averse individuals will be willing to pay an amount in excess of their expected losses in return for an elimination (or reduction) of potential losses. Meanwhile, the insurer should also be better off as he should be making more money than he is paying out (thanks to the laws of probability and the independence or at least less than perfect correlation of the events) Of course this assumes that everyone is getting insured or at least the people getting insured are representative of the population. We shall see that this can be a problem and will examine it under various concepts.

As mentioned above, customers are much more differentiated according to their risk levels, now. Because of this differentiation, information is much more important for insurance companies in this day. Information can be thought as the backbone of insurance business since it is the major determinant in predicting risk potentials of customers and premium rate adjustments. Other than that, the number of insurance companies is increasing and information is significant for customers in order to determine

trustworthiness of the companies and so as to be aware of the coverage of their policy.

To understand information concept and its importance for insurance business, it is helpful to determine three main parties that are the players of insurance transactions; namely, insurance companies, agencies, and customers. Insurance companies have to acquire as much information as they can about their customers in order to perform better in risk and premium rate determination. Also, they have to be informed enough about the working principles and styles of their agencies since the agencies are the only bridges between customers and them. Moreover, customers have to know general conditions of an insurance company and coverage of their policies so as to really transfer their risks to the company.

Although the importance of information for all of the parties included in insurance business is obvious, sometimes it may not be easy to reach or truly analyze information. One party usually has more information than the other and asymmetric information concept comes into the picture. Asymmetric information influences almost all sectors in which information is significant for performance and it is similar for insurance business.

The main focus of this study is how information asymmetry influences insurance business. We examine topics such as which of the parties are affected by information asymmetry and how the problems caused by asymmetric information can be avoided or reduced.

At the beginning, information asymmetry concept is mentioned. In this part, the causes and results of asymmetric information, the difference between the markets in which information is free and simple to reach and the other markets, and the ways to convey information other than direct giving of it are stated.

In order to have a closer look, in the first part of the study, perfect markets are explained and this explanation is important since it is helpful to predict what changes if markets moves away from perfect markets. In addition to perfect markets, moral hazard and adverse selection concepts are mentioned. These two concepts are very significant for better understanding of information asymmetry because they show the results of asymmetric information and utility maximization behavior of the customers if they have the chance. In this manner, “Market for Lemons” (Akerlof, 1970) is included in the first part because it is the first approach and explanation of adverse selection concept. It is illustrative for understanding of market failures when adverse selection continues for a period of time, as well. Besides these, signaling is expressed as a well-known method of conveying information which may be on purpose or unintentionally. Lastly, guarantee concept is described as an effective way of giving signals in many production and service sectors.

Explanations on the above mentioned subjects are vital because understanding information asymmetry concept is one of the major parts of this study in order to recognize how momentous it is for insurance sector and grasp the effectiveness of suggestions to overcome or reduce it. In other words, these above mentioned concepts are important to notice the relation between insurance sector and information asymmetry.

In the second part of the study, a general look is made to the insurance business so as to have overall understanding of insurance business both in Turkey and around the world. For this purpose, first history of insurance in Turkey and in the world is described. This part also includes evolution of insurance and is significant since it is essential to see changing needs of insurance companies, the problems faced in the past and the evolution of problems, the importance of legislation and regulations, late development of the sector in Turkey, the differences of improvement stages between Turkey and the rest of the World. Then general structure of insurance business around the world and especially in United States is examined. In this

section, general descriptive numbers, global premium generation data, per-capita spending for life and non-life insurance types, insurance companies working around the world are mentioned. This section also includes comparisons between continents and countries in a more detailed manner. The data and comments in this section are helpful to understand the relation between the development level of the country, variation of insurance types and performances of insurance businesses. As mentioned above, American insurance business is examined in detail since it seems to have the greatest volume of business around the world and its system is important to inspect. Second, structure in Turkey is studied in a more detailed manner. Again general descriptive numbers and premium generation data are mentioned. Furthermore, types of insurance policies underwritten in Turkey, number of companies in business, the shares of insurance lines by direct premiums, premium generation trend in Turkish Lira, loss/premium ratios that are broken down according to the branches, performances of first ten and first twenty firms for years 2003 and 2004 are explained. As mentioned general overview of Turkish insurance business is more detailed and important for better understanding of Turkish insurance system and make it easy to resolve whether success or failure of the sector are expected or random. In the last section of the second part of the study, fundamental concepts of actuarial sciences are explained. The study includes such a part mostly to underline the significance of information in all components of the insurance business. In this section, economics of risk, random variables, time value of money, Generalized Individual Model, classification, selection and anti-selection and assumptions are mentioned.

In the last part of the study, a research is made including all of the three parties of insurance sector; customer, agencies and insurance companies. In the first section of this research, some ratios of four companies that are in insurance business are analyzed financial and insurance point of view. These ratios are in the table below.

Table 1.1

Financial ratios significant for insurance business

Shareholder's Equity/Total Assets
Current Ratio
Premium & Reins. Receivables/Total Assets
Receivables from Agencies/Shareholder's Equity
Loss/Premium(Net)
General Expenses/Received Premiums
Profit before taxes/Received Premiums
Technical Profit/Received Premiums
Financial Profit/Received Premiums

The main purpose of this study is to compare the overall performance of the four companies and have an idea about the risk levels of the companies. Also, the systems of the companies for policy writing for auto insurance, which is on-line and central, are investigated. In this part, the questions of the companies that are asked to the customers before premium rate determination and policy writing are studied. After that, the principles and policies of five agencies of these four companies with respect to auto insurance are examined. As a conclusion, these different studies are connected and it is found that whether generally risky companies continue to take risks by asking fewer number of questions to their customers and giving cheaper offers for a certain customer or not. The research including the agencies is done in order to determine the responsibilities of the parties in ignoring importance of information. At the last section of this part, some suggestions and recommendations to avoid or reduce asymmetric information and its undesirable consequences both for company, agency and the customer.

CHAPTER II
GENERALIZED MODEL OF INFORMATION ASYMMETRY

2.1 INFORMATION ASYMMETRY

Information asymmetry is the condition in which at least some relevant information is known to some but not all the parties involved. Information asymmetry causes markets to become inefficient, since all the market participants do not have access to the information they need for their decision making processes.

Examples of situations where sellers know more necessary information than the buyers are numerous. Some examples can be given for used car salespeople, stockbrokers, real-estate agents, and life and auto insurance transactions.

There are some well known applications and approaches of the bad effects of asymmetric information to markets.

First, Akerlof (1970) claims that the seller of a used car knows more about the condition of the car than the buyer. Second, it is known that consumers usually know more than insurance companies about their individual health risks. Third, Spence (1973) argues that job applicants know more than their employers about their ability to function in a corporate setting. Fourth, Kling (2001) claims that a company and its regular customers know the prices that it charges, but potential customers are not as aware of its prices.

These information asymmetries mentioned above causes some impacts in these markets. The asymmetrical information mentioned by Akerlof (1970), causes in used car market that buyers think that used cars are mistaken.

Thus owners having good cars to sell cannot deal in a fair price in the market. Other than that, because of the information asymmetries in insurance market, insurance companies try to classify customers in order to have a better determination of risks and premium rates and if this classification can be done in a proper way then people with the highest risks are not able to insure themselves. The case stated by Spence (1973) resulted in people going to business school to obtain a signal that they have the temperament to be a corporate sheep. Furthermore, the situation stated by Kling (2001) causes that the firms may prefer to fix its prices when there is lesser demand since they think the increase in demand due to price reduction is not profitable for them and this extends the length of recessions.

Other than the above stated specific examples for specific markets, information asymmetries generally result in problematic situations for any markets. In general, there are two types of problems. One is adverse selection and the other is moral hazard. Adverse selection briefly refers to a market process in which bad results occur due to information asymmetries between buyers and sellers: the "bad" products or customers are more likely to be selected. Moral hazard arises when people behave recklessly because they know they will be saved if things go wrong. Extended explanations and examples for these two concepts will be included in following sections.

Signaling is an important concept in overcoming some bad consequences, although it is not informative enough to diminish all the problems caused by asymmetric information. Another defective part of the signaling is its being open for misusage in favor of one party. Giving guarantee is an effective way of signaling and it is used widely in some sectors.

Information asymmetries are very important in determining the level of efficiency of the markets since any asymmetry remove markets from perfect market conditions. Perfect markets are described in following sections.

To conclude, it is very vital for sectors to understand and analyze the causes and results of information asymmetry in order to overcome problems. These problems require deep analysis of customers in cases of buyers have more information then the sellers (insurance). In the reverse case, in case sellers have more information than the buyers (used car sector), signals and guarantees should be used by sellers.

2.2 PERFECT MARKETS

Perfect markets are an idealized type of markets whose key features are as follows;

- Markets are frictionless (Copeland and Weston, 1988). In other words there are no transaction costs, all assets can be divided and are marketable and there are no regulations constraining the trade.

- There exists a perfect competition in all markets (Copeland and Weston, 1988). There are many sellers and buyers and no increasing returns. Goods and services are being sold at a minimum average cost. Also, all individuals are price takers in security markets.

- There is no border around information. All of the players of the market can easily reach the necessary information to make the right decisions without spending any effort and money.

- Bankruptcies are costless (Hull University Business School-Semester1-2002/2003 Lecture Notes).

- All individuals are rational expected utility maximizers (Copeland and Weston, 1988).

As mentioned above, perfect markets are imaginary. It is very hard to establish such a market structure in real world. In real world, there is usually imperfect competition including increasing returns, imperfect information, incomplete markets or a combination of them. In other words, there is no way to have a perfectly efficient market with respect to price, operations and allocation of resources; however, as Friedrich A. Hayek (1945) mentioned market economies may be relatively efficient compared to any other economy according to their ways of use and convey information.

2.3 MORAL HAZARD

In general, moral hazard is the name given to the risk that one party to a contract can change their behavior to the detriment of the other party once the contract has been concluded. Other than this general description, Frank (1991) explain moral hazard as the tendency whereby people expend less effort protecting those goods which are insured against theft or damage and it is described as “a hidden action problem” by Varian (1990) since it occurs in situations where one party of the market can’t observe the actions of the other party. Most important examples of moral hazard are faced in politics, and especially in insurance.

Most important way of shifting the risk is to pool and diversify it by using insurance. As the size of the insurance sector grows, it is more likely to say that people are getting more desirous to pay to prevent the risk. When being insured, they pay and get nothing unless the risk turns to reality, otherwise they breakeven because only the value of lost should be paid back by the insurer.

However, in some cases, insurer may give a commitment to the insured that he will obtain more than the value of the lost. In this situation, the insured person has no incentive to avoid the misfortune and may act to bring it on. In other words, individuals, in possession of private information, take actions which adversely affect the probability of bad outcomes as McTaggart,

Findlay & Parkin (1992) mentioned. Briefly, moral hazard is the result of maximizing behavior and sometimes dramatic. One of the most important examples for the moral hazard is arson when a person has fire insurance for his building. In these circumstances insured person may take an action after comparing the costs and benefits of it. In other words, he weights the value of operating a failing business and taking cash from the insurer subsequent to the fire. However this does not mean that when the physical value of the building is below the cash the owner will obtain from the insurer, he takes the action because there are other costs including cost for break one's moral code and cost of getting caught .Only in cases that all the costs are less than the benefit, he will take an action or become less careful about preventing fires. Another important example occurred in a small Florida town called "Nub City". $ 300,000 was paid by the insurers to more than 50 people having suffered accidents and losing various organs and many of the witnesses were relatives of the insured person.

Moral hazard also appears in other areas related with insurance. As an example automobile insurance makes it safer for people to have accidents that causes injuries or property damage and in some of these the legally innocent driver which is deliberately become a part of the accident uses insurance of the guilty car owner in order to make more parts of his car than those are hurt during accident repaired.

Government also suffers from moral hazard problem. It helps to the unemployed people however generally this aid encourages people not to search for work although such programs require the unemployed prove that they are seeking jobs. They submit sham applications for job they are not likely to get and try to deceive the government.

As a conclusion, as Cunningham (2005) said no one actually wins when a moral hazard is committed and one might get away with destroying your auto or home, but in the end when rates go up, he become of the cause and not the solution. As the moral hazard problems continue to rise both for the

private insurance companies and government, tougher restrictions will be imposed to both responsible of moral hazard and innocent ones and finally there will be no insurance coverage for the misfortune.

2.4 ADVERSE SELECTION

Adverse selection or anti-selection is a term used in economics and insurance. In general, it refers to a market process in which bad results occur due to information asymmetries between buyers and sellers: the "bad" products or customers are more likely to be selected. Information asymmetry is the most important cause of adverse selection since only sellers have knowledge about the quality of the product or the risks of situation, and buyers are always risk averse and do not want to take potential risks.

Adverse selection may be faced in any sector including buyers and sellers and most significant and problematic examples are seen in insurance sector. In insurance sector, the people who take out insurance are more likely to make a claim than the population of people used by the insurer to set their rates. For example, death rates for a certain age range and a certain area data are the only support in determining a customer's premiums; however, there are of course other factors that shaping that customer's remained length of life. One of the most important factors is being a smoker or non-smoker. However, it is very hard to differentiate people as smokers and non-smoker for an insurer and he has to believe the declarations of the customer about this habit. Thus insurer wants the same amount of premiums from smokers and non-smokers in many policies. As a result of this type of premium determination, after a while non-smoker customers start to think their premium rates higher with respect to their risks; however, smokers find their premiums not higher for themselves and more healthy and non-smoker customers begin to give their policies, while smoker customers continue to be insured. Finally, this results in that only less healthy and more risky customers hold on their policies and the number and the amount of health insurance claims gets higher and higher for

insurance firm. If the firm carries on not to finding better ways to determine risks, it will end up with no profits and fails.

Sometimes, the asymmetric information market process works reversely. In other words, some profit-seeking insurance companies having ways to determine most of these factors avoid underwriting policies to that risky people even these customers accept to pay higher rates and decrease their claim amounts and increase profits in a “cherry picking” or “cream skimming” manner. As a result of this behavior, these risky customers remain uninsured.

Most important reason for adverse selection is lack of classification especially for insurance. Better determination of risks and better premium rate arrangements are the best ways to solve or at least decrease the undesirable consequences of the problem.

Of course, there are other examples of adverse selection; however, the most significant one is given by Akerlof (1970) who introduces adverse selection problem first. In his article, Akerlof took a closer look to used car market in light of information asymmetry. In the following section of thesis, a more mathematical view of adverse selection problem is mentioned.

2.5 MARKET FOR LEMONS (George A. Akerlof, 1970)

The article of Akerlof (1970) was related with quality, uncertainty and market conditions in used car sector. Also, Akerlof (1970) mentioned about important problems faced by market theories due to existence of many grades of quality of goods.

According to Akerlof (1970), there are many markets in which buyers use some market statistic to judge the quality for potential purchases. In this case, merchandisers prefer to sell lower quality goods because selling high quality goods affects the above mentioned statistic for the entire group of merchandisers and individual effort become beneficial for all rivals. As a

conclusion, the quality of the goods in the market is being lowered day by day and at the end the market fails.

In Akerlof (1970)'s model of "The Market for Lemons", there are some assumptions before setting the model. The assumptions are following;

1. All the cars prospective to be sold are varying in quality on the range [0, 1].
2. Sellers value cars identically to the car's quality. For example, $q is as good as a car of quality q.
3. Buyers support for valuing the cars is also quality; however, cars are systematically worth more to buyers than the sellers. In other words, a car of quality q is worth $3q/2 to a buyer.
4. Information about the quality of cars is only available for sellers not for buyers.

If it is ignored the fourth assumption, in other words, if buyer can find a way to know the information about the value of the car then a car of quality can be bought at a price between an interval [q, 3q/2] according to the bargaining positions of the parties, the seller and the buyer. It seems here that all of the cars in the market will be sold at the end in case of all parties can reach the information.

In the reverse case, when the fourth assumption is in use, and there is no way for buyer to have information about the quality car, the buyer gives a random value to the car since the only information in buyer's hand is the quality distributions of the cars existing in the market. In this case, Akerlof (1970) claims that there will be no cars in the market to sell.

As an explanation, Akerlof (1970) assumed that there is a price p at which some cars are sold. All the cars that are worth less than p have an average quality of p/2 since quality of cars in the market is uniformly distributed between 0 and 1 and thus for any p, expected quality conditional on q<p is

p/2. In these circumstances the money that most of the buyer would accept to pay is the expected utility of a car, 3/2 * 1/2p = 3/4p < p for all p > 0. As seen no buyers will pay p for a car, and car trade at that price will collapse and no positive equilibrium price could be reached.

2.6 SIGNALLING

Market signals are activities of individuals in a market which by design or accident, change the beliefs of, or convey information to, other individuals in the market.

Signals are general tendency of the firms to have a positive and better reputation in their customers or their rivals' customers' point of view. Firms give signals to the market and these signals make customers think that the firm is in a good way to be better or if the firm is top of the market, then the signals are to make customers believe that the firm is powerful enough to stay at its existing position. In both cases, giving signals takes some cost; however, these costs are less than the benefit coming from giving that signal to the market.

Signals may be given in many ways. These ways may be totally different from one sector to other. In stock market, the companies are generally giving signals by releasing their statements of good financial positions, income statements, balance sheets, annual reports etc. Here, it is very important to make the people believe this released information by using GAAP, auditors, being in full harmony with the existing laws. Also, giving high amount of dividends to the investors is another important way of giving signals and affecting the investors' beliefs, behaviors and thoughts. However, in this case, it is a very strategic decision and action to arrange not one year later but years after today. Because once you give much higher dividends to your investors than the last year, you have to increase that amount in the next year otherwise even if you give still large amount of dividends, this behavior will be a negative signal for the customers. In

durable goods market, the signals are rather different than the stock market. In this case, opening a new plant or factory, having more certificates of quality than the competitors, having more export to the countries which are good at this technology are important methods of giving signals to the customers. However, in this sector, giving guarantees are the most important way to have a positive and good reputation in customers' point of view. The scope and the period is the most vital part of a guarantee. The longer and broader scope guarantee is the best for influencing the buying behavior and action of the customer.

Besides these, producers signal using advertising, job applicants spend money in education in order to be able to show diplomas, or careful drivers signal their low accident probability by accepting a large "deductible" when they take out automobile insurance (Phlips, 1988).

Job signaling concept was first introduced by Spence (1974). Spence (1974) first describes job signals as "manipulable attributes or activities" that transmit information. According to Spence (1974), job signals are appearance, diplomas, previous work experience in general. For example, a job applicant may have fit clothing and then a better impression on employee's view. There are another group of attributes which are called as indices. These also convey information to the other party; however, they can't be modified or manipulated. Another type of attributes is abilities. Abilities are inborn, and they are also unchangeable features; however, the one having these abilities can give appropriate and self-selected information to the other party. In other words, he can give whatever signal he wants.

In other sectors , the references of the firm , the partners and the links ,the relationship with the government , brand name , pricing policy , after selling services, how widespread the service after selling, trustworthiness of the company is the good signals to give the customers. Brand names are good signals if and only if the customers connect the brand name whenever they heard, and a good brand name can be build with time and effort. After a

brand name gains its importance on customers view than to save the position firms generally avoid to produce lower quality products and whenever a lower quality product is required to be produced, they use a different brand name in market.

Signals are often not fully informative, however, they are still good ways to transmit correct messages. For example, diploma shows nothing about the quality or content of education but it explains that the applicant made enough efforts to finish the school and organized sufficiently to get the diploma. Furthermore, accepting a large deductible has no relation about the driving skills or habits or the number of accidents made, however, it gives the required message to the insurer. Besides these, advertising gives very limited and positive information about the product and since it is believed that low-quality products are not worth enough to promote (Nelson 1974, 1975), the message easily reaches customers that the good is high quality. The mechanism is used by both parties. The one giving signals attempt to persuade people about the signal and the party taking and evaluating the signal thinks that he reaches to the good quality product, the low-risk driver and the more effective worker and finally an equilibrium is obtained.

Except for the above, there are some conditions that the signals are not as effective as the companies are looking forward. The most possible reason is that firms release or give signals and wait for the results and this approach may not work. Some firms; however, release the signal and take additional actions to conclude in better and effective results. These actions may be TV advertisements, newspaper declarations, and publications on official websites. All of these actions made customers see or perceive better.

As a conclusion, signals are very important for a good reputation and it is not enough just release or give the signal, some additional actions should be taken. Signaling is a good tool to influence customers in a positive way

and clear the doubts in their brains caused by asymmetric information between him and the seller.

2.7 GUARANTEES

Guarantee is generally an assurance or an agreement by which one person undertakes to secure another in the possession or enjoyment of something. Guarantees are most common in markets for large or expensive consumer durables, where there is a well-defined called a breakdown (Spence, 1974). A breakdown can be thought as a natural and random event that is unfavorable for customer. One purpose of guarantees is to reduce monetary loss of the customer in case of a breakdown (Spence, 1974). By decreasing the risks, people are directed to owning the good, and it may be possible for producer to raise the price and add the possible losses due to the guarantee to that price. If one thinks of the good as a lottery and a guarantee as a change in one of the payoffs, then a good with a guarantee and one without are just different goods (Spence, 1974).

Guarantees are very common in lots of markets, such as new and used car markets, durable consumer goods market, and electronics market. Most of the car producers and dealers of second hand cars are giving guarantees for their goods. One of the most effective ways to be competitive in new car markets are giving longer and more broad-scope guarantees - starting from spare parts guarantee to renewing the car in case of any deficiency - because longer guarantees may also be signaling higher quality and lower probability of breakdown. Furthermore, the above mentioned type of guarantees may be very profitable as Relias (2004) said, if guarantee program is managed successfully. Relias (2004) claims that an extended warranty is a way to generate extra income and, if done correctly, won’t add additional risk in terms of service costs. However, it is important here not offering lifetime parts and service in order to undertake lesser risks.

In used car market, it is very important that a sold car has a mechanic guarantee, and in this market the ones giving a guarantee are much more advantageous to have greater sales.

A guarantee is like an insurance policy whose premium is buried in the selling price and the seller sells good and an insurance policy (Spence, 1974). However, the situation is changing from one insurer to another. If the insurer does not have inside information, there is a presumption he makes. Hence one's assessment of the likelihood of the event is affected by the insurance policy offered. In this case, the line between giving a good and a bad signal is very thin because by using the insurance, the firm should give the customers the feeling that when the conditions mentioned in the policy occurs it will be very costly for the firm if it wants to give a good signal. Otherwise, customers may think the bad situation is very likely to happen and the firm is trying to diversify the risk by applying insurance. The situation is similar for air transportation, land transportation firms or courier firms. They make the goods or passengers insured before transportation. These insurance packages generally include compensation of any expense in case of an accident resulting in injury or paying a certain amount of money, that is determined before transportation, to the heritages in case of any death.

As mentioned above there are lots of types of giving guarantee and the sellers providing a broader scope guarantee are generally gaining a competitive edge than his rivals. The guarantee is playing that much important role in most of the sectors because it is usually an effective way of giving signals and being related with the reaction of the customers it increases the chance of the seller to be a better situation in the future.

CHAPTER III
INSURANCE SECTOR

3.1 HISTORY OF INSURANCE IN WORLD

3.1.1 HISTORY OF INSURANCE IN EUROPE

Although it is probable that something similar to insurance was used by the Babylonians, the Greeks and the Romans, insurance as we now today is of more recent origin (Mayerson, 1962) .Marine insurance, the oldest branch, probably started in Italy at the close of the 13th or the beginning of the 14th century (Mayerson, 1962). The business had by then become so profitable that some men were able to obtain a living only from their insurance transactions. According to a book of a Florentine merchant the premium rate for goods transported by land from Florence to Milan was 6 percent to 8 percent of the value of the merchandise, while the premium for shipments by sea from London to Pisa was about 15 percent (Mayerson, 1962).

Insurance contracts were written by professional scribes and soon became standardized in form and language. Much of the phraseology of 14th and 15th Italian insurance policies passed into English insurance business mainly for marine insurance, and some expressions have survived, practically unchanged, till today.

Marine insurance diffused to Spain from Italy and in 1435 a law was passed in Barcelona to regulate the business. This law is a milestone in insurance industry evolution in many ways. However probably the most important thing is that the law made it illegal to purchase insurance on foreign ships for more than one-half their value, while setting a maximum for Spanish ships of three-fourths of their value. As a conclusion, the law is the first recognition of moral hazard which is caused by overinsurance and at the

same time foundation of a practice that will often be followed in later centuries, giving more advantage to local industry than the foreigners.

Even though there is some evidence of the establishment of a Chamber of Insurance in Bruges, Belgium (then Flanders) in 1310, the evidence is not confirmed. However, marine insurance was jumped to Bruges by late fourteenth century, when wool started to be imported from there to northern Italy.

Marine insurance was first brought to England from Italy by the Lombard merchants who was settled themselves down in London and play a very important role in British commerce in 15th and 16th centuries. According to the information released by British Admiralty Court, marine insurance was started to be prevalent in England in 1500's however, the date of first policy written is not known accurately.

Even though there were some reasons which make us believe that life insurance policies had been issued before the first written life insurance policy was faced in 1536. In 1574 then, Richard Candeler, a mercer, got from Queen Elizabeth a right to make and register all manner of assurances, policies etc. made on any ship or goods or merchandise or any other thing, in the Royal Exchange in London or elsewhere in the city. After that time The Chamber of Insurance started to register all insurance policies, record their terms. However, the chamber and all of its records were vanished in the Great Fire of London in 1666 before when any fire insurance policy had written. Insurance was very important in England in these years that insurance building for Chamber of Insurance was seriously planned in scope of rebuilding of London.

3.1.1.1 Individual Underwriters

Almost all of the policies written before 18th century were written by individual underwriters. Everyone having a good, merchandise or a ship to insure approaches a group of merchants or other rich traders who might be persuaded to take some part or all of the risk and he decided the scope of insurance, the terms and the premium of the policy by himself. Underwriter, originally meant an individual who personally agreed to insure a particular exposure against certain dangers, and signified his personal acceptance of the risk by writing his name under the agreement (Mayerson, 1962). Nowadays, underwriter is still mean similar thing; however he is generally a salaried person who selects the risk for a corporate insurer.

In today's insurance sector, individual underwriters are almost disappeared, and all of the policies are written by corporate insurers. Now there are two types of corporate insurers, first stock companies and second mutual companies. Stock companies are owned by stockholders and they are similar to other beneficial organizations .The other one, the mutual companies are owned by policyholders who have rights to vote the management and so have power on management.

After a while, individual underwriters started to unite and they established Lloyd's in London. The base of these organizations was consisted in Edward Lloyd's Coffee in Lombard Street in London in early 1700's and they formed and organization in 1771 and this was the first step of the world-wide insurance corporation known as Lloyd's of London.

Lloyd's of London was very powerful in marine insurance business that about half of the market was managed by Lloyd's and the remaining was shared by the other organizations. However in other types of business corporate insurers write the lion's share.

In 1720 the first two insurance corporations were founded in England, the London Assurance Corporation and the Royal Exchange Assurance Corporation. These two always stayed in the first and second rank in marine insurance business among other corporations till 1824.However still almost 90 percent of the business was kept by individual underwriters.

In 1800's lots of fire and life insurance company were formed but none of them wrote any marine insurance. Individual underwriters did wrote very small portion of other types of insurance , but they were still stars of marine insurance mostly because of the monopoly granted to the London Assurance Corporation and the Royal Exchange Assurance Corporation.

In 1721, the London Assurance Corporation and the Royal Exchange Assurance Corporation changed their charters and they were permitted to write life and fire insurance as well. Both companies are still alive and great companies of the sector.

3.1.1.2 Fire Insurance

The first recorded suggestion for a fire insurance company seems to have been made in 1609 to Count von Oldenburg in Germany, but the company was not formed (Mayerson, 1962). In early 1600's similar suggestions were made but they became unsuccessful. One of these proposals made after 1660 by "several persons of quality and eminent citizens of London" was not accepted by Common Council of London because obtaining the profits of such an undertaking by private persons rather than the City of London was thought improper.

After the Great Fire of London in 1966, various mutual fire insurance clubs and small fire insurance companies were founded. Mutual fire insurers paid their claims by levying their assessments on all subscribers after each fire and small fire insurance firms were collected the premium in advance. Almost all of these small firms were one-man ventures.

The earliest of these small fire insurance companies was the one started in 1667 by Nicholas Barbon (Mayerson, 1962). Barbon carried on his one-man fire insurance company until 1680, and it became, the first stock fire insurance company under the name of “The Fire Office”. He died insolvent in 1698.

The most important feature of Barbon’s company was that it lived the first insurance rate war with the City of London in insurance history. City of London started to write fire insurance in 1681 and they began charging premium 2.4 percent of rental value of the property for brick buildings when Barbon charged 2.5 percent. After a while Barbon decreased its rate to 2.29. In November, 1682, City stopped writing and Barbon increased its rate to 2.75 since there was not competition any more.

The first mutual fire insurance company, Amicable Contributionship which was usually called the Hand-in Hand was established in 1696 and they charges about half of Barbon’s Fire Office charges. They could levy assessments if funds provided are insufficient to pay claims and profits were paid to the policyholders as dividends. It lived two centuries and was taken by a larger company in 1905.

The first substantial fire insurance company, the Sun Fire Office was founded in 1710 with 24 partners and still in business. They were the first company to protect goods and furniture and having own firemen to stop fires occurred in their policyholders’ houses.

3.1.1.3 Life Insurance

Life insurance is likely to be an out-growth of marine insurance, even though there is no scientific evidence about this. After some time the marine insurance sector started to grow, insurers recognized that proper shipment of a good or cargo is very closely related with the ability and health of the

captain and his crew. Therefore the first life insurance written was for Mediterranean sailors against pirates. If the ship was captured by the pirates, the insurer paid the ransom and provides secure release of the captain and sailors.

For life insurance policies, there was no scientific basis from late 16th century till 1693, the date which Edmund Halley prepared the first mortality table.

First Mutual Insurance Company was founded in 1699 in the name of the Society of Assurance for Widows and Orphans; however it failed in a little time. After that the Amicable Society was established in 1706 .In this company anyone between the ages of 12 and 45 was appropriate to be insured. Amicable boards of director interviewed with the applicants and they decided whether or not to insure him. There was no differentiation in premiums for ages and risk levels of customers.

Until 1762 there was no life insurance company working with proper scientific basis. Of course there were some studies like Halley's however these were not suitable for any customer and also they included many deviations. At that year the Equitable Society for the Assurance of Life and Survivorship was established. They were the first that took the age of insured into consideration. They were number one in the sector for nearly 30 years and they broadcasted the Northampton table, which was one of the first scientific mortality tables.

One of the most important life insurance structures was Friendly Societies which live in 18th and 19th centuries and pioneers of American fraternal benefit societies. These societies were that important because they started to use quite scientific methods and in many line of the business they released the latest actuarial methods.

Life insurance sector development was slower in other European countries. First life insurance company in France was Compagnie Royale d'Assurances sur la Vie and it was established in 1767.It failed after a little time and the second one was founded in the name of Compagnie d'Assurances Générales in 1819 and it is still operating. In Germany, first life insurance company was a mutual company founded in 1829.

3.1.2 HISTORY OF INSURANCE IN AMERICA

In United States, the first line of insurance was marine insurance as well. English underwriters were the only actors of the sector in early 18th century, however by 1750's Americans started writing insurance. In 1760 the London Coffee House constitute a meeting ground for underwrites, ship-owners and brokers in Philadelphia. As the business increased other cities like Boston, New York have such offices.

3.1.2.1 Fire Insurance

The first fire insurance company founded in United States in 1752 was Philadelphia Contributionship for the Insurance of Houses from Loss by Fire. Its structure was very similar to the English Hand-in-Hand. The company became successful because of two reasons. First they did not insure all applicants' houses; they always made an inspection of houses. Second, they determined the premiums according to type of construction, condition of building etc. In 1810 they started issuing perpetual fire insurance contracts. In other words, they collected a single lump-sum fee at the date of writing policy and they use the interest of this money as yearly premiums. They were the only fire insurance company for 32 years and they are still operating today.

First stock fire insurance company in America was established in 1792 and called Insurance Company of North America. They wrote fire, marine and

life insurance and they were the first in writing fire insurance including goods.

There were four stock and ten mutual companies by 1800 and by 1820 number of stock companies increased to 28.After a while, several weak companies were formed around all United States. These companies were very feeble and concentrated on very small geographic areas because there were heavy taxation for the larger companies in other states.

The end of this irregular growth of the sector came with the great fire of New York in 1835. Most of the geographically limited and financially weak firms failed after the fire and entrepreneurs recognized the importance of being grown to a certain size and diversifying the risks both geographically and financially. Lessons were taken; however, application was very slow and in efficient. Then in 1871 Chicago Fire and 1872 Boston Fire a total of 98 companies failed.

However at last the companies became financially tougher and having larger reserves and diversified regarding their exposures and they were well prepared to San Francisco earthquake and fire occurred in 1906. Although they were badly influenced they succeeded and paid 225 million dollars of insurance claims.

Since it was very difficult to determine the risks and scope of claims it was very hard to standardize, there were large varieties and deviations between different firms' policies and premiums. At last, in 1873 Massachusetts released a standard fire insurance policy and in 1886 New York drew up a standard and this became a model for most states. It was revised in 1943 and it is still used.

As the fire insurance sector developed rapidly and had a strong structure, some other types of disasters were included in fire insurance policies. In 1937, with the Extended Coverage Endorsement, tornadoes, hail, explosion,

riot and windstorm started to be included in fire insurance policies and in 1951 with Additional Extended Endorsement, glass breakage, vandalism, water damage, falling trees and other perils were included.

After the disasters mentioned above were included in fire insurance policies, two trials were lived in America. These were a hurricane and a windstorm occurred in 1950. After both of them, huge amount of claims were paid however almost no bottleneck was lived. These two events showed the difference of the situation of the sector in 1800's and in 1950's and how powerful it was after about 150 years of experience and development.

3.1.2.2 Life Insurance

The first life insurance company in United States was the "Corporation for Relief of Poor and Distressed Presbyterian Ministers and of the Poor and Distressed Widows and Children of Presbyterian Ministers" which was established in 1759 and it was the oldest company in life insurance business in the world. However, it was working for a very restricted number of people.

As mentioned above, the Insurance Company of North America was permitted to write life insurance but it declined life business in five years. In 1812, the Pennsylvania Company for Insurance on Lives and Granting Annuities was incorporated (Mayerson, 1962). The importance of this company was that it was the first company in America that wrote only life insurance policies and it continued its business till 1872. During first forty years lots of other stock companies were formed in life insurance business; however they had very short time of existence.

The first mutual life insurance company was the New England Mutual Life Insurance Company of Boston which was established in 1835 but it did not write any policy till 1843.Therefore, in fact the first mutual company issuing a policy was the Mutual Life Insurance Company of New York which was

founded in 1842. Between 1843 and 1851, 12 important company was formed in America and they're all still in business today.

3.1.2.3 A Period of Rapid Growth

During and after the Civil War, economy developed sharply and the insurance business got its share. Premium income of life insurance companies increased from $16 million to $98 million from 1869 to 1884, relatively. The period from 1870 to 1906 was the years for continual growth, severe competition, innovations and extension of insurance to poorer groups of society.

Many new companies were founded in 1870's but lots of them failed during the depression of 1873 and 1893. Fraternal organizations sold insurance to religious and nationality groups in this period. Assessment societies were founded but most of them failed because they were assessing the costs without taking the age of customers into consideration and their method was wrong.

The total amount of life insurance in force in United States increased by 577 percent between 1870 and 1906 and the assets of U.S. insurance companies rose tenfold in this period. Furthermore the opening of West, developments of railroads and high increase in population made American insurance market very huge in this period.

The competition that characterized the life insurance sector led to a liberalization of the terms and conditions of the business in order to make policies more appealing to existing and potential customers. Surrender values, a grace period, suicide clauses and reinstatement were the products of these liberalization motions. Also restrictions on travel, residence, and occupation were removed during this period. In late 1870, many of the insurers excluded death caused by hostile Indians from their policies however this and many other uninsurable item were included in this period.

The first mortality table was drawn up in 1868 with the name of the American Experience Table and it was used for 80 years after release. In 1889, the Actuarial Society of America was founded and it is still the most powerful authority of life insurance actuaries.

Industrial insurance, offering small policies to poor people at premiums having smaller rates resulted in spread of life insurance to all levels of American Society. Another important result of industrial insurance was rapid growth of two great and today's two largest life insurance companies.

3.1.2.4 Group Insurance

Group insurance concept was first appeared in Montgomery in 1911. At that time Equitable Life Insurance Company wrote a life insurance policy for 3,000 employees of Montgomery Ward & Co. After that, the National Association of Insurance Commissioners made a legal definition of group insurance in 1918 and first group health insurance was written in 1929 providing hospital insurance (Mayerson, 1962). Group insurance has spread to trade associations, labor unions and other organizations in a few years.

3.1.2.5 The Recent Past

Insurance in force increased from 12 billion to 106 billion dollars from 1905 to 1930, respectively. World War I and influenza epidemic in 1918 influenced the sector however development remained.

The depression also affected the insurance business but its negative effects were greater than the war and epidemic. Sales decreased, readily written policies were surrendered and investments reduced. The sector could ascend even to level in 1930 after seven years in 1937. However only 20 of 350 life insurance companies went bankruptcy and they were all small firms and the loss of customers due to unpaid claims was negligible.

Life insurance business did not face with great problems after 1937 and insurance in force increased by six times in twenty years. Although World War II and Korean War seemed to be bottleneck forming events, sector was more than enough powerful to overcome. In 1935 Social Security Act made the American public more aware of security and this was a driving force for life insurance sector and during the forties and fifties and share of life insurance business started to become regular in general economic perspective.

3.1.2.6 Casualty Insurance

There were three lines of insurance business in late 1800's in America; namely, marine, fire and life insurance. Most of other kinds of risks were thought uninsurable. However as the companies became stronger both in financial status and applying scientific methods to ratings, more perils was started to be taken. Furthermore, technology was being improved day by day and this development brought new requirements for insurance.

After the invention of railroads , the first company providing personal insurance against injuries occurred in railroad accidents was founded in England in the name of the Railway Passenger Assurance Company in 1849 and this was followed by many other company writing insurance for both railroad and non-railroad accidents.

The first railroad accident insurance company in United States was the Travelers Insurance Company which was founded in 1863. After three years, the Hartford Steam Boiler Inspection and Insurance company was established and it was writing accident, theft and burglary insurance. In 1898, two new lines of insurance were started to be underwritten and two of the most important branch of insurance business was born. They were automobile insurance and workmen's compensation insurance. Especially,

automobile insurance is very important and it covers almost 40 percent of the whole property insurance business.

According to the state law in many states, fire insurance companies were not permitted for writing casualty insurance and vice versa for a period. However, in 1940's it was noticed that this differentiation between fire and casualty insurance obstruct the growth of insurance business as a whole and in 1950 multiple-line underwriting legislation had been passed in practically every state. This law is still valid in states of America and an insurance company can write any type of casualty or property insurance. In other words they can write fire, marine, automobile, workmen's compensation, theft, burglary insurance any many other kinds. However, a casualty or property insurance still is not permitted to write life insurance policies.

Although there is a strict law of above mentioned differentiation, life insurance companies can buy a casualty or property insurance company or fire or casualty insurance companies can found life insurance companies easily.

3.1.2.7 Insurance Regulation

Regulations about insurance business were needed as the sector grew. Degree and quality of regulations always differ from state to state and this differentiation was also the size of the sector in that state. The earliest legislations about insurance were for giving competitive advantage to local insurers and for putting taxation system in an order. The first law in New York, in 1814, was entitled "An Act to Prevent Foreigners from Becoming Insurers in Certain Cases in this State" (Mayerson, 1962). By this law, foreign insurers were banned to write fire insurance in New York.

Many states had special legislation authorizing the incorporation of insurance companies by mid-1800s; therefore the need for special

legislation was terminated. In this time, special offices were established in order to control the insurance companies whether they were applying the laws or not. The first example of these offices was founded in New Hampshire in1851. This was followed by offices Massachusetts and Vermont and other states. The first enterprise of founding a separate department of insurance was in New York. Although there were great opposition of the insurance companies, New York obtained a Department of Insurance of New York in January 1, 1860. At that time insurance business was still in a chaos and the efforts of state was insufficient to avoid misusing of policyholders money, fly-by-night operations and company failures. After these staggers the Armstrong Investigation was made and it showed that insurance business should be inspected in a closer manner. Following this investigation, lots of the states made their laws stricter and insurance business had a linear, less deviated path in legal manner.

3.1.3 HISTORY OF INSURANCE IN TURKEY

It can easily be said that, there was no insurance activity in Turkey before the middle of 19th century. In these times, there were some unions established in order to help people when needed, compensate their losses, and support people in case of an illness or death. However, none of them was working as an insurer and the only motives of such foundation were providing safety and help and satisfying their socially conscious way of philosophy. These foundations appeared in very narrow areas in Anatolia and they weren't able to spread more than a hundred villages.

Although, insurance sector was developing very quickly in Europe, the same level could never be reached in Turkey because of social characteristics, religious structure and fiscal regime. However, fires occurred in second half of 19th century especially in Istanbul caused changes in Turkish people's view of insurance. Especially, the fire (the Big Pera Fire) occurred in Istanbul in summer 1870 was the milestone at which insurance sector started to develop in Turkey, because that fire caused important hazard for

foreigner, Turkish people who had good relations with foreigner traders and other wealthy citizens.

In 1872, the first insurance agency was opened in Istanbul as a branch office of an English insurance company and other continued to come, as well. After English companies started to underwrite, the first French company started to work in Turkey in 1878.These trend was carried on by German, Italian and Swiss companies. Although all of these companies were good for development of insurance sector, sometimes their actions resulted in hazardous because in those times there were no laws and even no regulations in Turkey related with insurance business. These companies were very effectively using these free spaces in laws and they were working without any supervision, with directions from headquarters, underwriting in English or French, accept English or hometown courts in any disagreement and terminating any policy whenever they wanted.

As a result, in first years they worked without no regulation and control, however they paid losses in time and in true amount in order to make their brand accepted by society and make people closer to insurance .However, after a while they started thinking that they could easily earn more and more money because there was still no regulation and capitulations were very advantageous to them. In that period, insurance ethic was injured seriously, unfair competition raised, expertise misuses were occurred. Companies started not paying any of losses, even regular fire losses, and disregarding the rights of insured people.

After all these nightmares, Ottoman General Insurance was founded in 1893 and became the first domestic insurance company. In succeeding years all of the foreigners were united in order to make insurance business regulated and in conclusion 43 foreigners and 1 domestic insurance company determined a common fire insurance tariff on June 12, 1900 and these was the first tariff in Turkish insurance history.

Upon that tariff, it was decided to establishing a union called Fire Insurance Companies Union and have a continuous supervision on the sector. After that decision, a union was founded and called as Fasman and it was directed by Fire Office Committee, London and had important contributions in developing controlling mechanism.

Although, Fasman had very good efforts, some of the companies did not join to that union and continued to compete unfairly and took opposite actions to the union's decisions. In 1908 and 1914, foreign companies were attempted to control by altering laws and regulations. With the changes made in 1914, denoting guarantee and paying tax became compulsory for foreign companies and the name of the union became "Insurance Companies in Turkey". After those changes, foreign companies tried to form partnerships with Turkish companies in order to withstand in new situation.

It can easily be inferred from above mentioned information that there was no locally financed and operated insurance company in Turkey until the declaration of foundation of new Republic of Turkey.

After the new state was founded, there occurred very important developments in insurance business both in legal and institutionalization manner. In 1924, Turkish became compulsory in any policy written in Turkey and in the same year The Insurers Club was established. In 1927, a law for "Supervision and Inspection of Insurance Business and Insurance Firms" came into force in order to supervise both foreign and domestic insurance companies and avoid foreign currency to be brought abroad. With this regulation, it was provided that the number of domestic insurer companies was increased and the development of insurance business in Turkey gained speed. Then, at the end of two years of investigation and preparation, incorporation was founded whose operating rights were belonged to Türkiye İş Bankası A.Ş. and in 1929, National Reinsurance Incorporation was established. By this event, insurance monopoly was started in Turkey and transferring a portion of their premiums to National Reinsurance

Incorporation was compulsory for all insurers doing business in Turkey. That monopoly was the first one in the world and although it took several reactions ,it was very beneficial in avoiding misuse, unfair competition ,late payments and it made insurance more reliable in view of society.

Parallel to that developments, all of the insurer firms were connected to the Ministry of Trade in 1939 and a law, that took into account insurance business seriously, came into force with number of 7397 and name of “Insurance Inspection and Supervision Law” in 1959.In 1987, that law was changed in order to reinforce insurer firms financially and reorganize the situation of underwriters with number became 3379. With that law, insurers were connected to Undersecreteriat of Treasury and Foreign Trade and recognized as an element in economic structure. In May, 1990, casualty insurance, engineering insurance and agricultural and in October, 1990, fire and transportation insurance were started to be arranged by free tariff.

While the number of insurer companies was increasing, demand for insurance was not rising that much. As a result some regulations were needed and in January, 1995, pursuing system for premiums was changed from agency current account base to policy base in order to find a solution for premium collecting problems.

After the earthquakes occurred in 1999, “Natural Disasters Insurance Foundation” was established in 2000 in order to supervise and operate compulsory earthquake insurance and its management responsibility was given to “National Reinsurance Incorporation”. Furthermore, compulsory reinsurance application was finished in December 31, 2001, after almost 73 years. In March 28, 2001, with the law of “Individual Retirement Savings and Investment System”, an individual retirement system was established and activated in October 27, 2003.

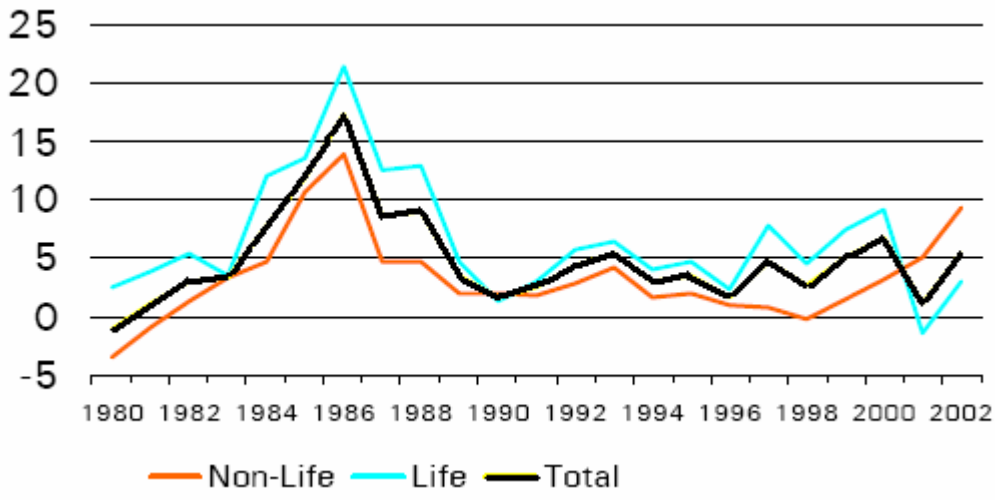
3.2 STRUCTURE IN THE WORLD

There occurs daily changes in insurance industry whole around the world and sector is growing day by day. In this section, current structure including bottlenecks, robust is investigated. First, the general overview of the industry is mentioned and then US insurance industry is examined since it is the largest market for this sector and it determines the trends all around the world related with insurance. Also there is a classification for life insurance structure and non-life insurance structure.

World insurance premiums (property/casualty and life/health) totaled $2.9 trillion in 2003.It was $2.627 trillion in 2002 and there was a 10.4 % increase between 2002 and 2003.Also the transaction value of insurance-related mergers and acquisitions totaled $58.5 billion in 2003, up from $9.7 billion in 2002 (Insurance Information Institute, Facts and Statistics- 2003 Industry Overview- www.iii.org). Although, the sector had a decreasing trend until 2000, after the terrorist attacks and people's increasing awareness of safety changes the trend to rise. The graph below shows the trend in global premium generation from 1980's up to now.

Table 3.1

Real growth rate in insurance industry in %

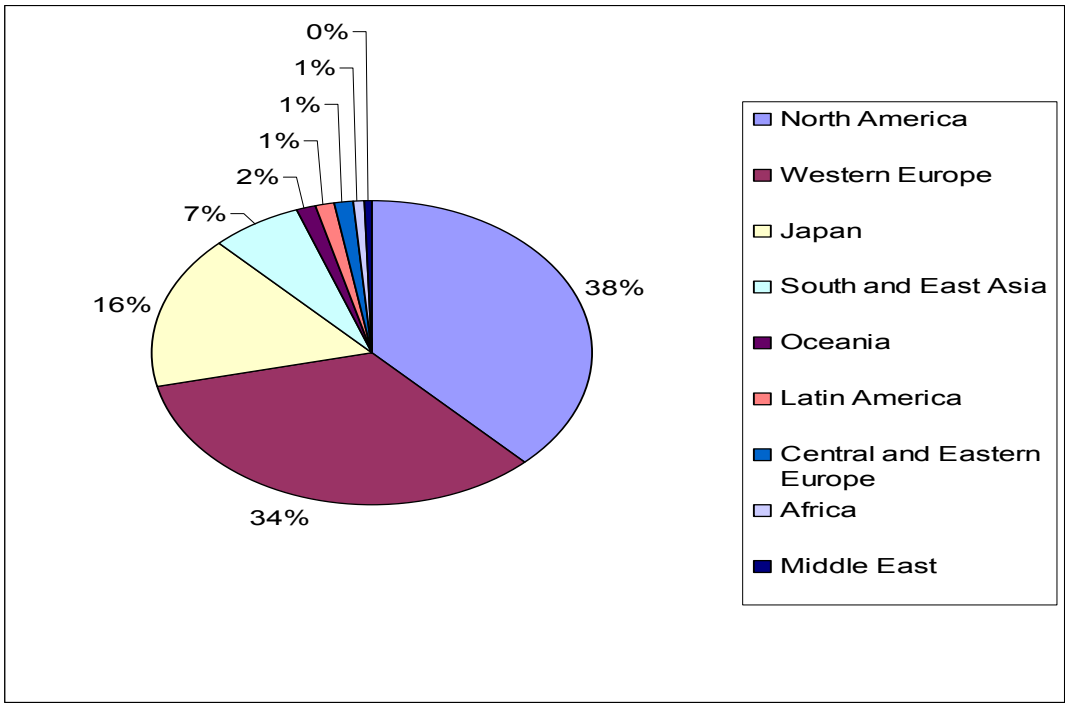


(New Swiss Re Sigma Study-World Insurance in 2002- Swiss Re Economic Research & Consulting- www.swissre.com)

The distribution of this match of premium generation is demonstrated on following graph. It can be easily inferred from the graph that in developed countries premium generation is much higher than that of underdeveloped or developing countries. This is because of both higher consciousness of diversifying risks, having more options and much better life standards.

Table 3.2

Premium volume by region



(New Swiss Re Sigma Study-World Insurance in 2003 sigma 3/2004- Swiss Re Economic Research & Consulting- www.swissre.com)

It is also possible to separate life business and non-life business in premium production. In the chart below, it is seen that Europe have the greatest insurance business/GDP ratio and this is mostly coming from Western European countries. Europe is followed by Asia and then America comes. However, the rank of Asia in premium production is dominated by Japan which is the first country in premium volume/GDP ratio in world ranking. That success of Japan life insurance business is mostly because of the high living standards of Japan people and earthquakes occurring frequently.

Table 3.3

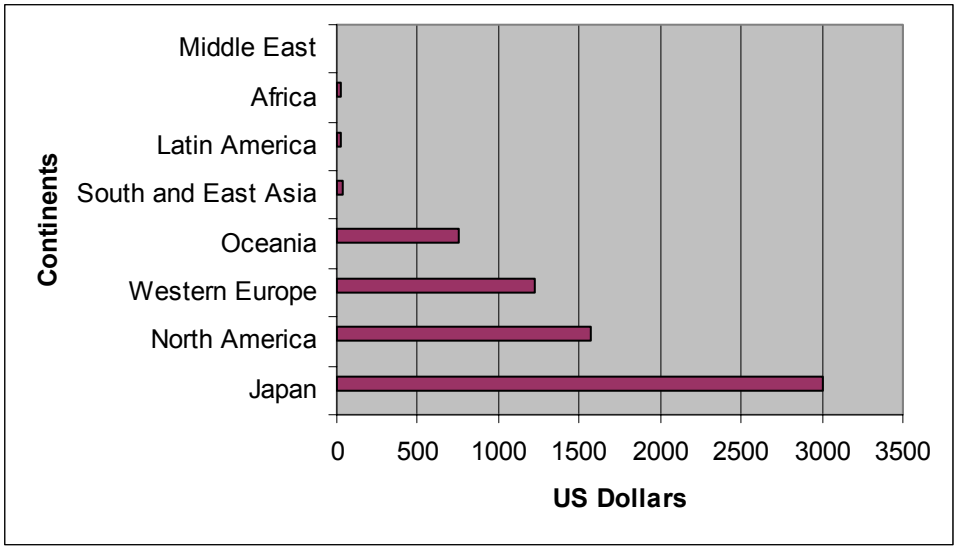
Summary life premium volume

	Premiums (USD m)	Change (in %) inflation-adjusted	Share of world market (in %) 2003	Premiums in % of GDP 2003	Premiums per capita (in USD) 2003
America	**519.829**	**-2,2**	**31,08**	**3,83**	**606,8**
North America	503.759	-2,2	30,12	4,25	1.565,70
Latin America and Caribbean	16.070	-0,4	0,96	0,94	30
Europe	**584.705**	**-2**	**34,96**	**4,64**	**726,9**
Western Europe	573.712	-2,3	34,3	4,99	1.230,10
Central/Eastern Europe	10.994	17,5	0,66	0,99	32,9
Asia	**522.340**	**2,7**	**31,23**	**5,74**	**140,1**
Japan	381.335	0,2	22,8	8,61	3.002,90
South and East Asia	137.207	10,2	8,2	3,5	41,3
Middle East/Central Asia	3.797	-3	0,23	0,5	13,4
Africa	**22.184**	**-14,8**	**1,33**	**2,93**	**26,1**
Oceania	**23.456**	**-8,4**	**1,4**	**3,99**	**750,7**
World	**1.672.514**	**-0,8**	**100**	**4,59**	**267,1**

(New Swiss Re Sigma Study-World Insurance in 2003 sigma 3/2004- Swiss Re Economic Research & Consulting- www.swissre.com)

Table 3.4

Per-capita spending on life insurance



In non-life insurance business the leading continent is America and the dominating force is North American insurance sector. In North America 4.69 % of GDP goes to insurance. This can be explained by luxury living style of

Americans and increasing trend of owning real estate or property rather than having investments on money markets or capital markets.

Table 3.5

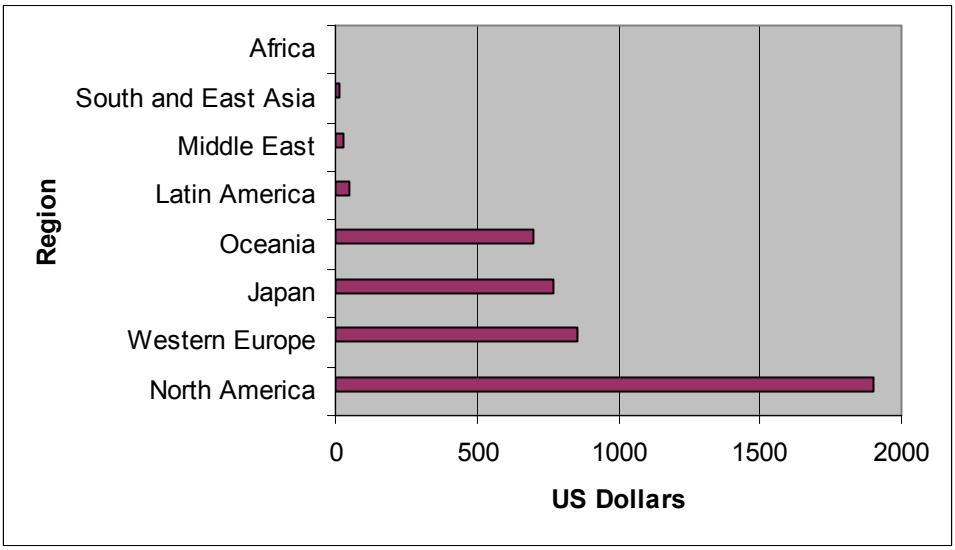
Summary non-life premium volume

	Premiums (USD m)	Change (in %) inflation-adjusted	Share of world market (in %) 2003	Premiums in % of GDP 2003	Premiums per capita (in USD) 2003
America	**636.683**	**7**	**50,21**	**4,69**	**743,2**
North America	610.882	7,2	48,17	5,15	1.898,60
Latin America and Caribbean	25.801	2,6	2,03	1,51	48,2
Europe	**437.452**	**5,7**	**34,5**	**3,35**	**524,9**
Western Europe	414.044	5	32,65	3,47	854,7
Central/Eastern Europe	23.408	18,8	1,85	2,11	70,1
Asia	**163.413**	**2,3**	**12,89**	**1,77**	**43,3**
Japan	97.530	-1,5	7,69	2,2	768
South and East Asia	57.255	8,8	4,51	1,41	16,7
Middle East/Central Asia	8.629	3,7	0,68	1,14	30,4
Africa	**8.784**	**6,8**	**0,69**	**1,16**	**10,3**
Oceania	**21.824**	**6,3**	**1,72**	**3,71**	**698,5**
World	**1.268.157**	**6**	**100**	**3,48**	**202,5**

(New Swiss Re Sigma Study-World Insurance in 2003 sigma 3/2004- Swiss Re Economic Research & Consulting- www.swissre.com)

Table 3.6

Per-capita spending on non-life insurance



In the table below, the ranking of top ten global life insurance companies is shown. The leader of the sector is AXA and it is followed by ING Group and Assicurazioni Generali.

Table 3.7

Top Ten Global Life/Health Insurance Companies by Revenues, 2004 ($ millions)

Rank	Company	Revenues	Country
1	AXA	$121,606	France
2	ING Group	105,886	Netherlands
3	Assicurazioni Generali	83,268	Italy
4	Aviva	73,025	U.K.
5	Nippon Life Insurance	60,521	Japan
6	Prudential	47,056	U.K.
7	Dai-ichi Mutual Life Insurance	44,469	Japan
8	MetLife	39,535	U.S.
9	Meiji Yasuda Life Insurance	38,835	Japan
10	CNP Assurances	36,943	France

(Insurance Information Institute, Facts and Statistics- Life Insurance- www.iii.org- Source: Fortune)

3.2.1 AMERICAN INSURANCE INDUSTRY

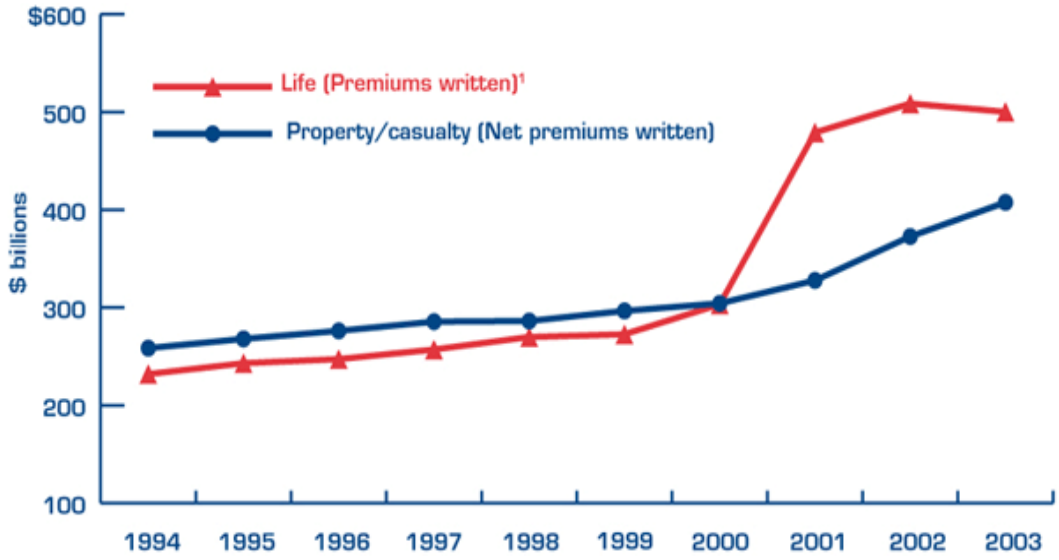
U.S. insurance premiums totaled $1,055.5 billion in 2003, up 4.9 percent from $1,006.0 billion in 2002. Premiums in the property/casualty sector totaled $574.6 billion, while life/health premiums totaled $480.9 billion. The U.S. insurance industry, which is made up of property/casualty and life/health companies and agents, brokers and service personnel for all sectors, employed 2.3 million people in 2004. There were 3,330 property/casualty insurance companies in the United States in 2002. Many of these companies were part of larger entities. The property/casualty insurance industry's rate of return on a statutory basis was 10.2 percent in 2003, up from 3.3 percent in 2002. The property/casualty insurance industry had a $30.4 billion after-tax net gain in 2003, up from $9.7 billion dollars in 2002. U.S. catastrophe losses rose from $12.9 billion in 2003 to $27.3 billion in 2004. The total for insured property losses from the September 11, 2001

terrorist attacks has been revised and now stands at $18.8 billion (Insurance Information Institute, Facts and Statistics- 2003 Industry Overview- www.iii.org).

In the table below, the trend of life insurance and property/casualty insurance premium generation is seen. After the terrorist attacks in 2001, life insurance business had a robust and than leveled and property/casualty insurance also caught an increasing trend but its increase is slighter and keep rising.

Table 3.8

Premiums of property/casualty and life insurance industries, 1999-2003



(Insurance Information Institute, Facts and Statistics- 2003 Industry Overview- www.iii.org- Source: NAIC Annual Statement Database, via National Underwriter Insurance Data Services/Highline Data)

In United States, the primary business of life/health insurance companies is no longer traditional life insurance, but the underwriting of annuities - contracts that guarantee a fixed or variable payment over a given period of time. Nevertheless, the sale of such life insurance products as whole life and term life policies in particular remains an important part of the business (Insurance Information Institute, Facts and Statistics– Life Insurance-

www.iii.org).

Life insurance is a good way to accumulate savings in order to have a tax-free total in the future. Government and corporate bonds, mortgage loans (mostly commercial) are used by insurance companies in order invest premiums.

In the table below, it is showed that the distribution of life insurance premiums in life insurance lines. According to the data, life was a very important line for Americans and it was followed by accident and health. However, in the period between 1998 and 2003, while life and accident and health line are preserving their position, annuity considerations have a great impact in American people's insurance choices.

Table 3.9

Life/Health insurance industry premium by line, 1999 and 2003

($ millions)

Lines of insurance	Net premiums written	Percent of total	Net premiums written	Percent of total
Life	$123,662.2	24.3%	$140,667.0	22.3%
Annuity considerations	51,931.3	10.2	206,481.3	32.7
Accident and health	103,893.1	20.4	120,794.9	19.1
Deposit-type contract funds	230,115.4	45.2	90,076.5	14.3
Other considerations	NA	NA	73,212.5	11.6
Total, all lines	**$509,602.1**	**100.0%**	**$631,232.2**	**100.0%**

(Insurance Information Institute, Facts and Statistics- Life Insurance- www.iii.org-
Source: National Association of Insurance Commissioners (NAIC))

Credit life insurance, a form of decreasing term insurance, protects creditors such as banks (Insurance Information Institute, Facts and Statistics – Life Insurance- www.iii.org). This insurance is made in order to diversify the risk in case of the borrower's death. The premium is paid by the borrower. The value of the policy decreases whenever a part of the loan is repaid. If the remaining section of the loan is paid in advance then the remaining part of the policy is paid to the borrower. There is also a very similar purpose

insurance, credit accident or health accident and these two are done in order to avoid risks realizing in case the borrower is disabled.

The trend in the graph below shows that, although the amount of credit used by Americans have not changed a lot, the amount written as credit life or accident/health has decreased. This is very likely because of less risky environment and because the amount of credit unpaid is decreasing day by day.

Table 3.10

Credit life and accident and health insurance direct premiums written 1998-2003, ($000)

Year	Life	Accident and Health
1998	$2,296,030	$2,414,150
1999	2,480,823	2,503,615
2000	2,372,473	2,515,554
2001	2,006,309	2,275,416
2002	1,486,992	1,893,662
2003	1,147,397	1,438,215

(Insurance Information Institute, Facts and Statistics- Life Insurance- www.iii.org-
Source: National Association of Insurance Commissioners (NAIC))

In the following table, top twenty life insurance companies in U.S. are seen. According to the table, MetLife Company is the most successful company in U.S. in life insurance business with its $39,535 millions of revenue. Although its assets are less than that of the second company Prudential Financial, it can generate more revenue with lesser assets.

Table 3.11

Top twenty U.S. Life/Health insurance groups and companies, by revenues, 2004, (**$millions)**

Rank	Group	Revenues	Assets
1	MetLife	$39,535	$356,808
2	Prudential Financial	28,348	401,058
3	New York Life Insurance	27,176	144,421
4	TIAA-CREF	23,411	347,58
5	Mass. Mutual Life Ins.	23,159	124,51
6	Northwestern Mutual	17,806	123,957
7	AFLAC	13,281	59,326
8	UnumProvident	10,611	50,832
9	Guardian Life of America	8,893	35,395
10	Principal Financial	8,756	113,798
11	Assurant	7,404	23,969
12	Thrivent Financial for Lutherans	6,445	53,541
13	Lincoln National	5,371	116,219
14	Pacific Life	4,93	77,137
15	Conseco	4,33	30,756
16	Jefferson-Pilot	4,102	35,105
17	Mutual of Omaha Ins.	4,08	16,409
18	Western & Southern Financial	3,695	26,032
19	Torchmark	3,072	14,252
20	Unitrin	3,041	8,79

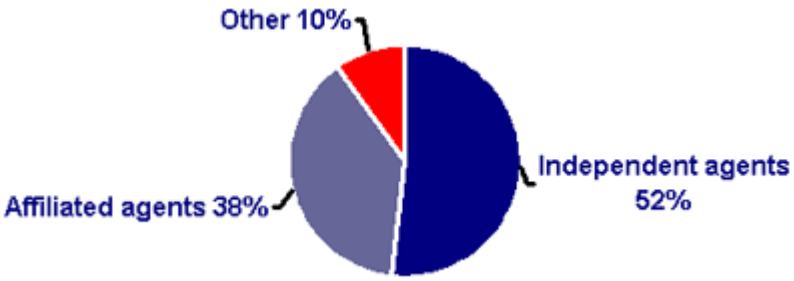
(Insurance Information Institute, Facts and Statistics- Life Insurance- www.iii.org- Source: Fortune)

In United States, life insurance was once sold primarily by career life agents, captive agents that represent a single insurance company and by independent agents who represent several insurers (Insurance Information Institute, Facts and Statistics – Life Insurance- www.iii.org). Now, there are lots of lines by which a policy can be sold directly to the public like, telephone, and the Internet, directly to the public. Other than those insurers has begun to use banks and financial advisors, professional organizations in order to sell annuities and term life insurance through and workplaces.

In the following table, the distribution of parties underwriting life insurance policies is shown. It can easily be inferred from the table that independent agents and affiliated agents are the leading forces of selling policies.

Table 3.12

Life insurance distribution (new individual life premiums), 2004



(Insurance Information Institute, Facts and Statistics- Life Insurance- www.iii.org-
Source: Limra International)

3.3 STRUCTURE IN TURKEY

After intensive efforts spent for years and increasing consciousness of people about having insurance and diversifying risks, Turkish insurance business seems to be in a good condition now and it is very likely to keep its increasing trend in coming years. Although its development period was started by foreign originated companies, locally based or alliance companies play a very important role for sector, and they are very important in determining the way sector goes and having better legal regulations.

Beyond these proud improvements, of course sector is faced with problems. Some of these problems are financial and some are about legitimacy. Financial problems are usually the ones generated after the economic crisis occurred in year 2001.The crisis caused vital problems for banking sector and insurance companies owned by banks whose stocks had been siphoned out are very badly influenced. Moreover, individually owned companies had been influence negatively, especially if their capital wasn't sufficient and their portfolio structure wasn't well balanced. Legal problems, however; appears both because of low efficiency of legislators, high barriers of bureaucracy and insufficient attempts of sector representatives.

There are three main lines of insurance. These are property, life and liability businesses. Property insurance is divided into six types, namely; fire, accident, marine, engineering, agricultural, and credit insurances. Life insurance is divided into four lines, namely; life, personal accident, health, and compulsory road passenger transportation personal accident insurance. The table below shows all the lines and subdivisions.

Table 3.13

Types of insurance in Turkey

Property Insurances	**Life Insurances**	**Liability Insurances**
Fire Insurances *1. Fire Insurance* *2. Loss of Profit Insurance Due to Fire* *3. Compulsory Earthquake Insurance*	**Life Insurances** *1. Term Insurance* *2. Saving Life Insurance*	**Motor Vehicles Compulsory Third Party Liability Insurance**
Accident Insurances *1. Motor Vehicle Physical Damage Insurance* *2. Theft Insurance* *3. Plate Glass Insurance*	**Personal Accident Insurance**	**Compulsory Third Party Liability Insurance for Road Passenger Transportation**
Marine Insurances *1. Hull Insurance* *2. Specie Insurance* *3. Cargo Insurance*	**Health Insurances**	**Motor Vehicle Facultative Third Party Liability Insurance**
Engineering Insurances *1. Machinery Breakdown Insurance* *2. Erection All Risk Insurance* *3. Construction All Risk Insurance* *4. Electronic Equipment Insurance*	**Compulsory Road Passenger Transportation Personal Accident Insurance**	**Elevator Accident Third Part Liability Insurance**
Agricultural Insurances *1. Crop – Hail Insurance* *2. Livestock Insurance* *3. Poultry Insurance* *4. Greenhouse Insurance*		**Employer Third Party Liability Insurance**
Credit Insurances *1. Credit Insurance* *2. Export Credit Insurance*		**General Third Party Liability Insurance**

Table 3.13 continued

	Compulsory Third Party Liability Insurance for LPG and Dangerous Materials *1. Compulsory Third Party Liability Insurance for Dangerous Materials* 2. *Compulsory Third Party Liability Insurance for LPG*
	Legal Protection Insurance

(Association of the Insurance and Reinsurance Companies of Turkey-2003 Annual Report-www.tsrsb.org.tr)

The numbers of insurance firms are different for different lines in Turkey. Although some of the firms underwrite various insurance business lines, there are firms that are specialists of one line, life/health business or casualty insurance etc. The following table mentions the number of firms in business since year 1999.

Table 3.14

Breakdown of Insurance Companies according to the branches

Branches	1999	2000	2001	2002	2003	2004
Fire	40	40	40	38	34	32
Marine	40	40	40	38	34	32
Accident	40	40	40	38	34	32
Engineering	40	40	40	38	34	32
Agriculture	15	15	15	14	14	11
Legal Protection	3	4	6	7	9	2
Health	40	40	40	39	36	39
Personal Accident	58	58	58	56	49	50
Credit	1	1	1	1	1	2
Life	35	35	33	28	28	51

(Association of the Insurance and Reinsurance Companies of Turkey-2003 Annual Report-www.tsrsb.org.tr)

The table clearly illustrates that the property/casualty group of insurance is made by the same firms. In other words, the firms making fire insurance are working in marine, accident, and engineering insurance business, as well. The table also shows credit insurance line of business is not developed well and the number of firms providing credit insurance is just two. Another important inference is that the number of life insurance firms in 2004 is twice as much as that of 2003, this is because Individual Payment, Savings and Investment System is introduced in 2003.And most of the readily existing firms established new firms rather than opening a division.

In the following table, the direct premiums generated from 1986 to 2004 and premiums are classified according to insurance business lines. Written fire insurance premiums always have increasing trend, however, its acceleration does not have a regular increase. Starting from year 1986, its acceleration had a peak point in years 1993 and 1994.After that time it seems to be leveled and decreased to 26.10% in 2004.Very similar trend is followed by

transportation insurance premium generation, transportation insurance had a peak in 1993 and 1994, as well. When we come to accident insurance, its increase trend is not regular and it started to decrease after year 2000 and it had a negative change in 2003.This is probably because of the increasing prices of new cars with additional taxes after 2001 economic crisis and decreasing demand to new cars and decreasing value of total number of cars in traffic. Engineering insurance has two peak points, first is in 1993 and 1994 and the second is in 1996 and 1997, however like fire and transportation insurance its increasing acceleration decreased to very low levels in 2003. First health insurance data came from year 1991 and after this year it was risen very sharply till year 2000 and it was influenced badly by 2001 economic crisis. Although individual accident insurance is a very important type in developed countries and it is rising day by day in Turkey, its generation is still very far from it should be. Credit insurance is very new for Turkish insurance sector and Turkish people but its increase in 2001 is really blinding and the most important reason for this robust is the increasing risk level of Turkish monetary environment caused by heavy economic crisis. In a general view, increases in non-life insurance branches are less than that of life insurance except for three years. However, according to the amounts generated is always greater for non-life business than the life business. When we come to the total amounts of Turkish insurance business, the total amounts have peaks in 1993, 1994 and 1996, 1997 and after 1997 its acceleration in upward direction has been getting slower. This trend is not only related with the consciousness and awareness of Turkish people about the importance of being insured but also the economic events and the parity of Turkish Lira and US Dollars and real market conditions. In normal conditions, the Turkish insurance sector should have a regular improvement trend. In fact, it was expected a greater decrease in Turkish insurance business premium generation in 2001 economic crisis because of terrible damage occurred in real markets however as mentioned above, increasing risk level of economic conditions of Turkey and thus the increasing premiums per policy and avoids sector from expected terrible results in Lira currency.

Table 3.15

Increase in direct premiums by insurance branches (billion TL)

Year	Fire		Transportation		Accident		Engineering	
	Amount	Inc. (%)	Amount	Inc. (%)	Amount	Inc. (%)	Amount	Inc. (%)
1986	52		47		69		12	
1987	83	61,0	66	39,0	116	69,6	21	70,9
1988	145	74,0	105	60,6	237	103,8	29	39,6
1989	259	78,8	161	53,1	407	71,8	49	71,0
1990	438	69,1	269	66,5	961	136,3	68	38,3
1991	632	44,4	407	51,6	1.917	99,4	133	94,2
1992	1.211	91,4	753	84,9	4.168	117,5	250	88,7
1993	2.777	129,4	1.544	105,0	9.325	123,7	579	131,5
1994	5.874	111,5	3.574	131,6	16.064	72,3	1.304	125,0
1995	10.917	85,5	6.936	93,3	31.088	93,0	2.563	91,5
1996	21.498	96,9	12.960	86,8	58.715	88,9	6.079	137,2
1997	42.577	98,1	22.025	69,9	133.306	127,0	13.900	128,6
1998	76.112	78,8	32.608	48,1	255.960	92,0	25.273	81,8
1999	156.505	105,6	43.616	33,8	423.566	65,5	37.742	49,3
2000	256.141	63,7	70.483	61,6	821.049	93,8	67.161	78,0
2001	440.561	72,0	107.561	52,6	1.016.402	23,8	120.561	79,5
2002	650.273	47,6	158.764	47,6	1.468.499	44,5	182.139	51,1
2003	820.218	26,1	193.200	21,7	1.461.995	(0,4)	206.652	13,5

Year	Hailstorm		Livestock		Health		Traffic	Legal Expenses	
	Amount	Inc. (%)	Amount	Inc. (%)	Amount	Inc. (%)	Amount	Amount	Inc. (%)
1986	1		0						
1987	2	54,8	1	206,5					
1988	3	99,0	3	146,6					
1989	6	87,5	5	59,9					
1990	17	188,1	6	16,7					
1991	35	110,3	14	127,5	48				
1992	39	11,2	38	172,6	141	193,9			
1993	68	73,9	68	80,1	352	149,4			
1994	80	17,3	82	20,0	922	161,5			
1995	153	91,8	452	450,9	3.022	227,9			
1996	346	126,7	1.396	209,1	8.358	176,6			
1997	808	133,6	1.366	(2,2)	24.198	189,5		153	
1998	1.968	143,6	998	(26,9)	53.566	121,4		313	105,1
1999	2.425	23,3	1.459	46,2	107.469	91,4		515	64,2
2000	4.146	71,0	2.312	58,5	188.450	75,4		1.533	197,9
2001	4.436	7,0	4.129	78,6	269.928	43,2		2.254	47,0
2002	9.761	120,1	5.531	33,9	408.959	51,5		2.878	27,7
2003	13.245	35,7	7.594	37,3	511.695	25,1	601.501,0	5.599	94,5

Table 3.15 continued

Year	Acci. Individ. Amount	Inc. (%)	Credit Amount	Inc. (%)	Non-Life Amount	Inc. (%)	Life Amount	Inc. (%)	Total Amount	Inc. (%)
1986					181		11		192	
1987					289	59,5	23	121,7	312	62,9
1988					522	81,0	50	112,9	572	83,4
1989					888	69,9	152	205,8	1.040	81,7
1990					1.759	98,2	452	197,3	2.211	112,7
1991					3.186	81,1	848	87,6	4.034	82,4
1992					6.600	107,2	1.571	85,4	8.172	102,6
1993					14.713	122,9	2.491	58,5	17.204	110,5
1994					27.899	89,6	3.866	55,2	31.766	84,6
1995					55.130	96,9	8.121	109,9	63.251	98,5
1996					109.353	98,4	18.815	131,7	128.168	102,6
1997					238.332	117,9	44.752	137,8	283.084	120,9
1998	9.803		0		456.599	91,6	93.138	108,1	549.737	94,2
1999	17.058	72,4	72		790.428	72,1	176.031	86,9	966.459	74,6
2000	37.025	117,0	83	16,0	1.448.385	83,2	326.193	85,3	1.774.578	83,6
2001	53.221	43,7	354	325,4	2.019.406	39,4	461.335	41,4	2.480.741	39,8
2002	76.786	44,3	444	25,4	2.964.034	46,8	686.694	48,8	3.650.728	47,2
2003	105.937	38,0	1.147	158,2	3.928.782	32,5	1.032.548	50,4	4.961.331	35,9

(General Directorate of Insurance, Turkey, Statistics about Insurance Sector, Table IV.8- www.sigortacilik.gov.tr)

In the table below the share of insurance lines by direct premiums is explained. It is seen from the table that the fire insurance share has been slowly decreasing since 1986 and transportation insurance line has followed the same trend however its decrease is sharper. Accident, engineering, hailstorm, livestock, legal expenses, credit, individual accident insurance types have leveled shares over years, however, health insurance sector has a gradually increasing trend. This is mostly because of more health conscious customers and bad movement in health system of our country. In general it is inferred that the shares of life and non-life premium generation is constant over years after 1990.The period of balancing before that year is both due to the types of insurance not being underwritten and low power of life insurance sector.

Table 3.16

Share of insurance branches by direct premiums (%)

Year	*Fire*	*Trans.*	*Acci.*	*Engi.*	*Hailst.*	*Livestock*	*Health*	*Legal Exp.*	*Acci. Ind.*	*Credit*	*Traffic*	*Non-Life*	*Life*
1986	27,0	24,6	35,8	6,3	0,5	0,2						94,5	5,5
1987	26,7	21,0	37,2	6,6	0,5	0,4						92,5	7,5
1988	25,3	18,4	41,4	5,1	0,5	0,6						91,3	8,7
1989	24,9	15,5	39,1	4,8	0,6	0,5						85,4	14,6
1990	19,8	12,1	43,5	3,1	0,8	0,3						79,6	20,4
1991	15,7	10,1	47,5	3,3	0,9	0,3	1,2					79,0	21,0
1992	14,8	9,2	51,0	3,1	0,5	0,5	1,7					80,8	19,2
1993	16,1	9,0	54,2	3,4	0,4	0,4	2,0					85,5	14,5
1994	18,5	11,3	50,6	4,1	0,3	0,3	2,9					87,8	12,2
1995	17,3	11,0	49,2	4,1	0,2	0,7	4,8					87,2	12,8
1996	16,8	10,1	45,8	4,7	0,3	1,1	6,5					85,3	14,7
1997	15,0	7,8	47,1	4,9	0,3	0,5	8,5	0,1				84,2	15,8
1998	13,8	5,9	46,6	4,6	0,4	0,2	9,7	0,1	1,8			83,1	16,9
1999	16,2	4,5	43,8	3,9	0,3	0,2	11,1	0,1	1,8	0,0		81,8	18,2
2000	14,4	4,0	46,3	3,8	0,2	0,1	10,6	0,1	2,1	0,0		81,6	18,4
2001	17,8	4,3	41,0	4,9	0,2	0,2	10,9	0,1	2,1	0,0		81,4	18,6
2002	17,8	4,3	40,2	5,0	0,3	0,2	11,2	0,1	2,1	0,0		81,2	18,8
2003	16,5	3,9	29,5	4,2	0,3	0,2	10,3	0,1	2,1	0,0	12,1	79,2	20,8

(General Directorate of Insurance, Turkey, Statistics about Insurance Sector, Table IV.9-www.sigortacilik.gov.tr)

The situation is as mentioned above until year 2003. After 2003, sector accelerated its growth and the following picture came out. In 2004, there is a total of 32.64% increase in direct premium generation of the whole sector with respect to 2003 data. In that increase the most attracting branches are traffic and accident types of insurances, both shares in total and yearly

change of these types were increased. Another important point here is that the share of life branch is decreased and its increase rate from 2003 to 2004 is below the sector average. This is mostly due to the newly introduced Individual Payment, Savings and Investment System.

Table 3.17

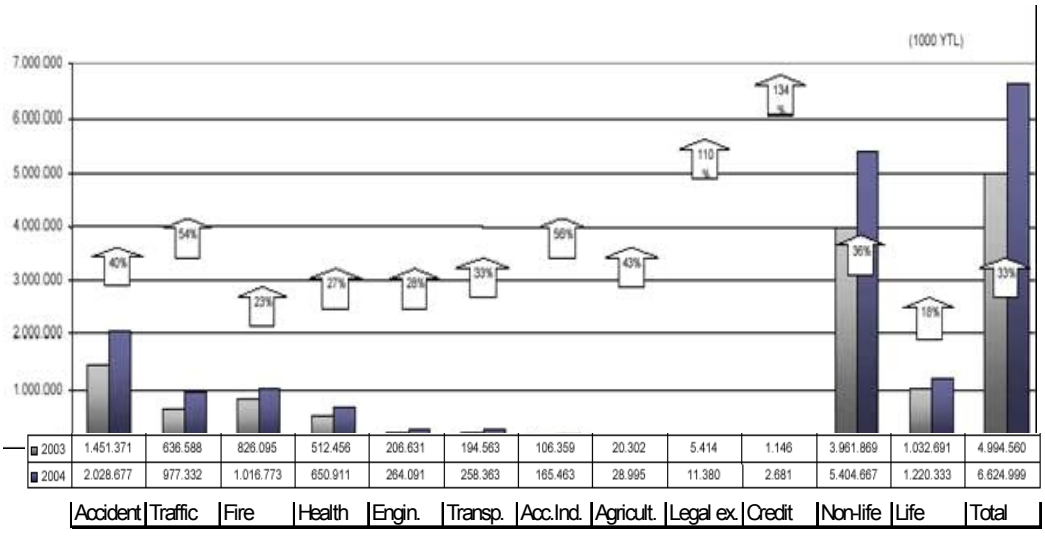
Compared Direct Premium Generations in Turkey

	2003		2004		
	AMOUNT	SHARE	AMOUNT	SHARE	CHANGE
FIRE	827.039.000 YTL	% 16,56	1.016.772.871 YTL	% 15,35	% 22,94
TRANSPORTATION	194.563.000 YTL	% 3,90	258.362.710 YTL	% 3,90	% 32,79
TRAFFIC	636.588.326 YTL	% 12,75	977.332.027 YTL	% 14,75	% 53,53
ACCIDENT	1.451.370.674 YTL	% 29,06	2.028.676.737 YTL	% 30,62	% 39,78
ENGINEERING	206.631.000 YTL	% 4,14	264.090.714 YTL	% 3,99	% 27,81
ACCIDENT INDV.	106.359.000 YTL	% 2,13	165.463.467 YTL	% 2,50	% 55,57
AGRICULTURE	20.302.000 YTL	% 0,41	28.995.341 YTL	% 0,44	% 42,82
LEGAL EXP.	5.414.000 YTL	% 0,11	11.380.186 YTL	% 0,17	% 110,20
CREDIT	1.146.000 YTL	% 0,02	2.681.342 YTL	% 0,04	% 133,97
HEALTH	512.456.000 YTL	% 10,26	650.911.211 YTL	% 9,83	% 27,02
LIFE	1.032.691.000 YTL	% 20,68	1.220.332.747 YTL	% 18,42	% 18,17
TOTAL	4.994.560.000,00 YTL		6.624.999.351,41 YTL		% 32,64

(Association of the Insurance and Reinsurance Companies of Turkey 2004 4th Term Statistics- www.tsrsb.org.tr)

Table 3.18

Compared Direct Premium Generations with respect to branches in Turkey



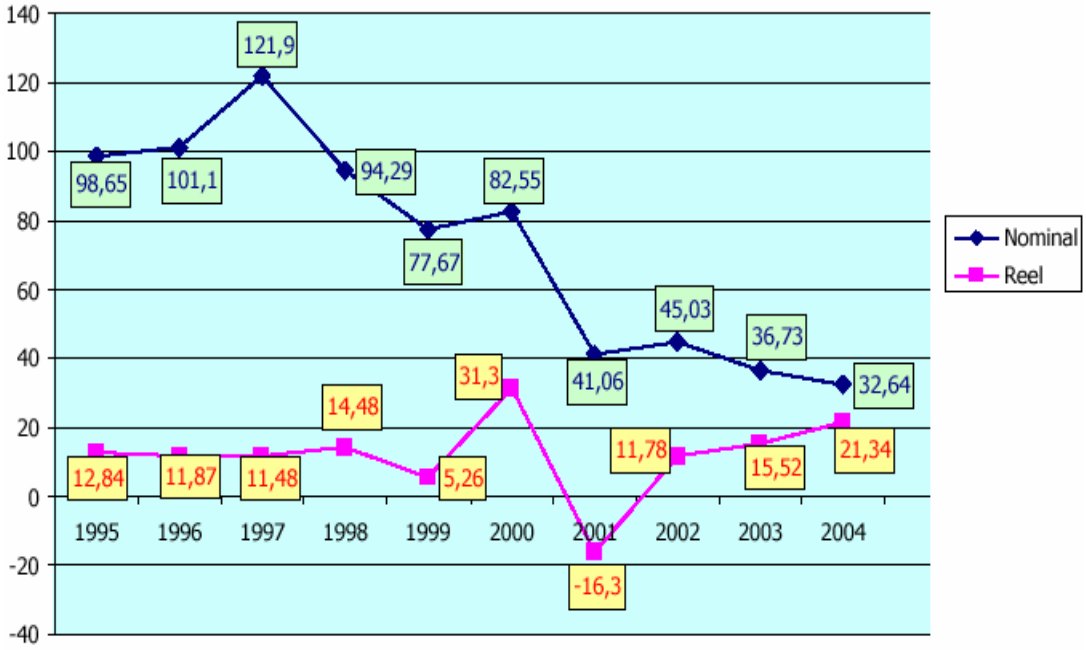
(Association of the Insurance and Reinsurance Companies of Turkey 2004 4th Term Statistics- www.tsrsb.org.tr)

Furthermore, it is seen that greatest changes are in credit, legal expenses lines of insurance and this is caused mostly because they have very low amounts and any changes make great increases

Insurance industry started to recover itself after 2001 economic crisis in relation with better economic conditions in reel sector, since the demand for insurance and premium payment power of insured parties are dependent to the situation of reel sector, and the growth in US Dollars rises to 40% from 2003 to 2004 both because of 20% reel improvement in premium generation and revaluation of Turkish Lira against US Dollars. In fact, this development is expected. The table below shows this growth trend after 2001.In the graph, it is seen that the nominal and real changes are getting closer to each other and the reason of this is decrease in inflation.

Table 3.19

Premium Generations trend in Turkish Lira in Turkey



(Association of the Insurance and Reinsurance Companies of Turkey 2004 4th Term Statistics- www.tsrsb.org.tr)

Of course developments in insurance business and the current circumstances are related with the macroeconomic and social conditions of the country however; especially in development criteria the loss/premium

ratio is very important. The ratios for various branches of insurance are included in the following table. In general in most of the branches there is no regularity in loss/premium rates over years. However, the branches constituting life business seem to have a leveled ratio. The reason is that in life business, the loss is directly related with the general statistical structure of illnesses, natural disasters, life styles of a country.

Table 3.20

Break down of Loss / Premiums by Insurance Branches

Year	*Fire*	*Transport*	*Accident*	*Eng.*	*Hailstorm*	*Livestock*	*Health*	*Legal Exp.*	*Acci. Ind.*	*Credit*	*Traffic*	*Non-Life*
1986	29,1	45,0	57,6	40,0	77,1	32,8						
1987	34,0	60,0	67,0	57,0	63,0	1,0						
1988	34,0	74,0	67,0	102,0	82,0	26,0						
1989	70,5	75,5	60,1	53,3	58,4	57,5						
1990	50,1	56,4	56,7	61,6	69,9	50,9						
1991	53,5	35,8	68,3	66,6	86,7	49,2	85,8					
1992	54,3	36,7	67,5	59,5	77,3	42,7	72,5					
1993	44,5	34,7	62,7	58,5	50,3	65,9	66,9					
1994	45,3	66,0	73,1	90,3	36,9	96,6	75,1					
1995	52,0	54,9	70,5	54,8	75,4	44,7	75,8					
1996	50,3	51,4	79,0	42,0	40,7	146,8	79,3					
1997	73,9	64,5	81,9	42,6	71,4	152,4	84,2	0,0				
1998	56,8	53,0	91,2	53,1	71,0	127,6	87,4	0,0	16,3			
1999	231,7	67,6	85,6	121,4	99,4	68,9	84,6	0,0	16,6	0,0		114,3
2000	39,5	56,8	69,2	69,4	19,0	70,6	76,3	0,1	14,0	0,0		62,1
2001	66,0	66,7	73,7	206,7	36,1	61,6	77,1	0,1	18,5	206,9		78,0
2002	42,2	49,6	70,0	66,9	42,7	92,5	74,8	0,3	17,0	117,4		61,4
2003	38,3	47,5	84,9	60,0	40,1	259,7	81,0	3,7	19,8	25,8	70,5	65,9

(General Directorate of Insurance, Turkey, Statistics about Insurance Sector, Table IV.10- www.sigortacilik.gov.tr)

Due to these irregular value of ratios materialized over years and since there is a non-decreasing trend of ratios it can be easily said that there is no real development in determining and evaluating risks of insured people. If there was such a development, there should have been a very slight but reducing trend of ratios. Of course, the role of general living standards of the country is important. For example, better highways, a better health system, more experienced and equipped fire extinguishing system, better and more quality conscious engineering and more educated people. However, better determination of risks is far more easy and effective way of reducing the loss over premium ratio.

There are lots of insurance companies working in various lines of insurance business. Some companies are underwriting more than one type of insurance in only one structure. The figure below is showing the names and premium productions of the firms doing insurance business in Turkey.

Table 3.21

Compared Direct Premium Generations with respect to companies in Turkey

		2003		2004		
		TOTAL(TL)	Market Share	TOTAL(TL)	Market Share	Increase in total
1	ANADOLU	431.842.000	% 8,65	665.384.726	% 10,04	% 54,08
2	AXA OYAK	430.778.000	% 8,62	641.136.177	% 9,68	% 48,83
3	KOC ALLIANZ	302.678.000	% 6,06	447.950.065	% 6,76	% 48,00
4	AKSIGORTA	358.444.000	% 7,18	416.458.907	% 6,29	% 16,19
5	ANADOLU HAYAT EMEKLILIK	422.206.000	% 8,45	410.572.822	% 6,20	-% 2,76
6	YAPI KREDI	305.350.000	% 6,11	385.491.391	% 5,82	% 26,25
7	BASAK	231.234.000	% 4,63	379.164.424	% 5,72	% 63,97
8	GUNES	285.663.000	% 5,72	368.146.962	% 5,56	% 28,87
9	ISVICRE	235.018.000	% 4,71	363.450.631	% 5,49	% 54,65
10	KOC ALLIANZ HAYAT VE EMEKLILIK	208.249.000	% 4,17	185.238.812	% 2,80	-% 11,05
	TOTAL OF FIRST TEN FIRMS	3.211.462.000	%64.30	4.262.994.916	%64.35	%32.74
11	AVIVA HAYAT VE EMEKLILIK	147.622.000	% 2,96	177.308.499	% 2,68	% 20,11
12	GARANTI	117.896.000	% 2,36	167.279.128	% 2,52	% 41,89
13	RAY	145.536.000	% 2,91	166.520.972	% 2,51	% 14,42
14	T.GENEL	111.874.000	% 2,24	166.161.839	% 2,51	% 48,53
15	YAPI KREDI EMEKLILIK	119.841.000	% 2,40	120.645.727	% 1,82	% 0,67
16	FINANS	74.510.000	% 1,49	119.422.355	% 1,80	% 60,28
17	AVIVA	85.276.000	% 1,71	117.648.328	% 1,78	% 37,96
18	ANKARA	54.492.000	% 1,09	115.236.386	% 1,74	% 111,47
19	GUVEN	68.222.000	% 1,37	108.680.148	% 1,64	% 59,30
20	AXA OYAK HAYAT	100.605.000	% 2,01	106.834.006	% 1,61	% 6,19
	TOTAL OF FIRST TWENTY FIRMS	4.237.336.000	%84.84	5.628.732.304	%84.96	%32.84

(Association of the Insurance and Reinsurance Companies of Turkey 2004 IV Term Statistics- www.tsrsb.org.tr)

As seen from the figure that the conditions is different than the past, in the past all of the market was dominated by foreign companies and they could easily insist on any regularity they wanted. However, Turkish companies are almost as powerful as the foreigners. The ranking seem to change in the future that Turkish companies will have more place in first 20 firms list.

3.4 INSURANCE MATHEMATICS

Starting from the earlier history of insurance industry, insurance people and independent institutions always tried to find a global system of premium and risk determination. They used probability, mathematics, interest rates, sociology, and psychology, economics in constituting the general structure. Forming the structure was not easy because it was required deep knowledge on all of the above mentioned disciplines. In the following paragraphs, fundamentals and subsidiary concepts are explained.

One of the most important concepts forming the general structure is the economics of risk. Risk has usually two meanings in people's mind, one is loss or injury and the other one is uncertainty. Loss can generally be measurable in monetary units and then the term "economic loss" is used.

Human being always has a risk averse behavior and usually trying to reduce risks and found some self-developed means in order to reduce risks. These self-developed means are police protection, safety equipments and rescue organizations for life threatening risks and fire departments, security systems for probable property risks. However, not all risks are avoidable with some precautions. And therefore people attempt to find a way to manage the financial results of losses successfully. Then they start to apply financial security systems. By applying such a system, they aim to pool their risks and prefer a smaller but certain loss rather than large but uncertain loss. This became the basis of insurance and actuarial sciences.

Organizations, even insurance companies, are risk averse. Insurance companies generally apply to reinsurance in order to diversify their risks after careful and intense determination of their risks.

As a conclusion, actuaries are the most important players of the financial security systems. They are –according to the situation- “the designer, the adaptor, the problem solver, the risk estimator, the innovator and the technician of the continually changing field of financial security systems” (Trowbridge, 1989)

Random variables are very important in decreasing the level of uncertainty and thus probability and statistics are one of the most important assistant of actuarial sciences. As stated by Trowbridge (1989) the first theory about random variables were belonged to Bernoulli, Gauss, and LaPlace in 17th and 18th centuries and the importance of having a sample that is large enough to be significant statistically and this requirement is still valid for actuarial sciences.

A number of random variables can be used for insurance risk and premium determination, however; there are four most important and used random variables. They are “Time until Termination”, “Number of Claims”, “Claim Amount” and “Total Claims” random variables.

Time until Termination random variable can be explained as the period of time lasting until a specific and determined event occurs such as, varying time between giving a medicine to a patient and seeing the effects of medicine. For actuary, time until termination random variables may be the remaining length of human life or a period of disability. For life insurance, disability programs, and pension plans, there is a mathematical model called “mortality table is used by actuaries. According to Trowbridge, 1989;

In its usual form, the table displays l_{x+t}, the number of persons alive at age x assumed to be still alive at age x+t, where t takes all integral values from 1 to some high age at which the number living is assumed to be 0.

Subtraction of any l_{x+t} from proceeding l_{x+t-1} shows the number assumed to die between age x+t-1 and age x+t, and hence one form of the probability distribution of T_x.

The second type of random variables is the number of claims and it is related with the number of claims in a given time period for a specific type of insurance. However, in this type, the number of claims is generally constant and it is more informative to take the frequency data for different insurance types. In this model, binomial, negative binomial, and Poisson distributions are used.

The next type is the “Claim Amount” random variable. It is the amount of claim with respect to coverage of the policy when a claim event occurred and this one has an asymmetric and heavy tail distribution. This variable is usually used for property/casualty or health insurance actuary.

The fourth mostly used random variable is the “Total Claims” random variable. This variable related with the total amount of claims in a specific time period. Its main application area is the situations that the insurer is directly exposed to the risk.

Besides these there is another type of random variables, the Rate of Interest random variable. Although it is not directly known as a random variable for actuary, the rate of interest or the rate of investment return, its distribution, means and variance are very important for a better analyze of financial security systems.

In using random variables, one of the most important things is having a data about the value of the random variables. Expected values were very important for actuarial science in the past because it was thought as the only measure of the magnitude of a random variable however now it is understood that especially for property/casualty and health insurance actuary the variance and the skewness of the distribution is important in

determining risks and premiums since they show the probability of differentiation from expected.

Other than random variables, actuaries use time value of money concept in their studies in development stages of actuarial science in actuarial present values estimation. Time value of money concept is built on the truth that same amount of money is more worthy today than it is in some day in the future (Trowbridge, 1989). The special relationship between actuary and the time value of money has two important reasons. First, actuaries have deep knowledge about mathematics and many of the tables for a better understanding of interest rate variations were first prepared by actuaries. Second, actuarial sciences are related with a long-time period and it is therefore required a very detailed analyze of the time value of money and interest rates. Time value of money concept is generally used with random variables and actuarial present values are found in order to have better judgments.

Actuaries establish a model (Generalized Individual Model) for the relationship between the financial security systems and the individual customers of insurance companies. This model is very useful and significant for determination of premium rates. The model is based on the cash flows of an insurance transaction. Premium payments for an insurance policy constitute the positive cash flows and paid claims form the negative cash flows.

For the claims to be paid (or disbursement), there are three elements. First is the time t at which the payment is done. Second is the amount of payment, A_t and the third is the probability of making the payment, p_t. The probability may have a value between 0 and 1 and it may be 0 or 1. According to Trowbridge (1989) the actuarial present value of the claims that will be paid in at year t is;

$$PV_d = (1+i)^{-t} p_t A_t$$

Here i is the assumed interest rate. The total of all possible future disbursement payments is;

$$V_D = \sum (1+i)^{-t} p_t A_t$$

Similar to the future claim payments, the premium income has three elements. First one is the time t' at which the payment is done. Second one is the amount of payment, $A_{t'}$ and the third one is the probability of making the payment, $p_{t'}$. Trowbridge (1989) made the calculation of present value of future premium income is made by the following formula;

$$PV_i = (1+i)^{-t'} p_{t'} A_{t'}$$

and the sum of these incomes is computed by the formula below;

$$V_I = \sum (1+i)^{-t'} p_{t'} A_{t'}$$

Most significant and informative outcome of the Generalized Individual Model is the difference between and total disbursement payments (V_D) and total incomes (V_I), Δ. Δ is altering with time since total values change with time and it should be written as a function of time, $\Delta(z)$. Therefore the formula for the difference is as follows according to Trowbridge (1989);

$$\Delta(z) = V_D(z) - V_I(z)$$

The above formula is used in order to obtain the reserve for a specific time t. Reserve here means the excess value of disbursements over incomes. Reserves are generally and naturally positive because disbursements generally occur later than the income flows.

The Generalized Individual Model can easily be adopted for long-term of short-term insurance transactions. Long-term applications frequently used for life, disability, or health insurance and short-term applications are used for property/casualty insurances.

The Generalized Individual Model –as it can be inferred from the name of the model- is suitable for financial security systems in which individual to individual transactions are made. However, in works that groups are in question, individual model may be insufficient. In these cases, group model or the defined benefit pension model which are based on the approach that groups are collection of a number of individuals is used especially for employee benefit plans. Group model is similar to the short-term applications of Generalized Individual Model and the defined benefit pension model is similar to long-term applications of that.

Besides these, classification, selection and anti-selection concepts are very important for actuarial sciences in determining risks and probabilities however, psychological component is very significant, as well, because human beings always act according to whatever is more beneficial to them.
Classification is generally for pricing purposes and for a better determination of risks and settling on the rates for policies, classification is very essential. The process of appointing a class to an individual customer is selection. Classification is usually based on homogeneity of risk principle (Trowbridge, 1989). Most crucial part of classification business is to put equally risky customers to the same rate or same opportunity group. Wrong classification brings improper selection and improper selection is resulted by anti-selection or adverse selection. As mentioned in Akerlof (1970), the market for used cars is exposed to be weaker day by day and faced with the danger of being exhausted at the end. The situation in Akerlof (1970)'s article is very similar for insurance business. If all of the customers are located in the same basket without proper determination of their risk levels and any classification, the same problem starts with an anti-selection and carries on with weakening. In other words, less risky customers begin objecting to pay

the same amount of premiums with more risky groups and withdrawing from the insured community.

This may be avoided if the risk averse customers have no other alternatives or there is no information about the other customer's risk levels. However, this is not possible in a competitive market. As a conclusion, it is not possible for insurance companies to succeed without a proper classification and selection.

Moreover, assumptions are very significant in actuarial sciences. Some practical considerations may affect the whole situation, premium rates, and determined risk levels in a positive or negative manner. However, it is the only way to overcome the problems including uncertainty. Therefore assumptions should be made very carefully and using experience.

Since these assumptions are generally predictive, actuaries always add a safety margin on their estimations found out by using assumptions. This safety margin is called in actuary literature as conservatism. For example, present values are generally inversely a function of the discount rate; thus the assumption of a low discount rate adds to the price or to the liability, and hence more conservative (Trowbridge, 1989). Also for life insurance, it is a more conservative approach to take a higher mortality rate. These examples may be increased for any kinds of insurances.

Actuaries and thus insurers have a conservative approach due to two reasons. First, they think that they better compensate the public interests by having a conservative approach and second they prefer to have mistakes in conservative side rather than the other side. In all conditions the level of conservatism should not disturb the view of people about insurance and the level should be reduced after gaining experience about future potential changes in any subject influencing actuarial calculations.

As a conclusion, actuarial sciences are the heart of insurance business and in order to be successful in insurance business all the requirements of actuary should be covered and all fundamentals should be carefully taken into considerations. Any one of the above concepts are more valuable than others and they are all rings of a chain and they work together in order to determine risks and premium rates for any of individual customers.

CHAPTER IV
INFORMATION ASYMMETRY AND STUDY ON TURKISH INSURANCE SECTOR

As information asymmetry influence any sector in a negative way both in survival and development manner, it directly manipulates insurance sector all around the world. Of course, it is impossible to distinguish Turkish insurance industry from the world and avoid it from the bad effects of asymmetric information.

Although it seems to be impossible to terminate asymmetric information totally, it can be reduced. However, in decreasing information asymmetries in insurance sector, it is very important to determine the problems caused directly or indirectly by asymmetric information.

Since the insurance business has various lines, and it is a very wide sector, it is very hard to study on the whole business. Thus it is better to choose a descriptive type of insurance in order to obtain facts about the whole business and produce solutions that are applicable for reducing asymmetric information in the sector and better determination of risks and premiums.

Auto insurance is a good choice because of the reasons mentioned above. Auto insurance is a rather standard type of insurance than the other lines of business and more applicable solutions can be suggested. Furthermore, auto insurance constitutes largest portion of insurance business in most of the companies in the sector. Therefore, problematic situations in companies general structure due to asymmetric information is very likely to be lived in auto insurance and suggestions are most probably able to solve overall problems of the company.

Besides these, auto insurance is descriptive enough to explain asymmetric information between insurance companies and their customers. This is because auto insurance is the most common type of insurance line in Turkish society and there are lots of alternatives.

As a conclusion, auto insurance is chosen since it is very suitable for a better determination of problems of the whole sector caused by asymmetric information which are both in favor of customer, agency or company itself and giving suggestions to solve these problems.

First of all a general look to some companies in business is made. This study includes ratio analysis of these companies and explaining their general policies applied in underwriting auto insurance policies. The examination of these companies shows whether generally risky companies continue to take risks by not using suitable risk and premium determination methods.

The table below shows the some calculated ratios which belongs to years 2000, 2001, 2002, 2003 and 2004 of Anadolu Sigorta A.Ş..

Table 4.1

Anadolu Sigorta Financial Ratios

	Industry Average 2004	2000	2001	2002	2003	2004
Shareholder's Equity/Total Assets	**0,27**	0,24	0,25	0,28	0,29	0,25
Current Ratio	**1,37**	1,61	1,66	1,71	1,60	1,55
Premium & Reins. Receivables/Total Assets	**0,32**	0,34	0,34	0,35	0,36	0,38
Receivables from Agencies/Shareholder's Equity	**0,98**	1,09	1,02	0,98	1,03	1,18
Loss/Premium(Net)	**1,19**	N/A	N/A	N/A	0,78	0,65
General Expenses/Received Premiums	**0,17**	0,13	0,13	0,12	0,13	0,09
Profit before taxes/Received Premiums	**0,07**	0,28	0,33	0,26	0,13	0,12
Technical Profit/Received Premiums	**0,10**	0,17	0,15	0,11	0,01	0,08
Financial Profit/Received Premiums	**-0,02**	0,24	0,31	0,27	0,21	0,13

(Loss/Premium ratios are taken from Undersecretariat of Treasury Insurance Supervisory Board 2003 and 2004 REPORTS ABOUT INSURANCE ACTIVITIES IN TURKEY and Industry average values are obtained from General Directorate of Insurance and the other values are calculated using balance sheets and income statements of the company belonging those years)

Anadolu Sigorta's shareholder's equity/total assets ratio has a leveled trend and below industry average which means that the firms credibility, productivity are around average. Its current ratio is greater than the industry average and thus the ability of the firm to compensate its requirements for debts as they come due is good enough. The company's receivables over assets and equity ratios are higher than the average and it can be said that company's efficiency on collection of receivables is not better than the average of the sector and its credit policy is loose. The company has smaller loss/premium ratios than the average of the sector and it has a decreasing trend from 2003 to 2004, and this suggests the company uses more effective ways to determine the risks of the customers. When general expenses over received premiums ratio comes into the picture, the company's ratio has a leveled trend and decreased to almost half of the average in year 2004. This shows that the company is good at management of personnel expenses, general administrative expenses, depreciation expenses etc. Lastly, profitability and overall performance of the company is searched by looking at the profit before taxes/received premiums, technical profit/received premiums, and financial profit /received premiums ratios. In profit before taxes/received premiums ratio, the company has very good statistics until year 2003, in that year there occurred a dramatic decrease in this ratio however it is still above the average. This decrease is mostly because of the decline in technical profit. In technical profit/received premiums ratio, the company has a decreasing trend from 2000 to 2003, however, it reached almost average in year 2004. The company's performance on financial profitability is very satisfactory, its ratios has a rather constant trend and it is above average in 2004 which means the company manage interest, rent, exchange incomes and expenses very well.

The table below demonstrates key financial ratios of Ak Sigorta A.Ş. for years starting from 2000 and industry averages for year 2004.

Table 4.2

Ak Sigorta Financial Ratios

	Industry Average 2004	2000	2001	2002	2003	2004
Shareholder's Equity/Total Assets	**0,27**	0,40	0,39	0,50	0,53	0,48
Current Ratio	**1,37**	2,32	2,45	2,46	2,71	2,62
Premium & Reins. Receivables/Total Assets	**0,32**	0,20	0,19	0,25	0,23	0,25
Receivables from Agencies/Shareholder's Equity	**0,98**	0,00	0,00	0,00	0,00	0,00
Loss/Premium(Net)	**1,19**	N/A	N/A	N/A	0,79	0,65
General Expenses/Received Premiums	**0,17**	0,07	0,07	0,07	0,09	0,09
Profit before taxes/Received Premiums	**0,07**	0,35	0,35	0,11	0,12	0,16
Technical Profit/Received Premiums	**0,10**	0,14	0,13	0,12	0,02	0,04
Financial Profit/Received Premiums	**-0,02**	0,35	0,43	0,12	0,18	0,20

(Loss/Premium ratios are taken from Undersecretariat of Treasury Insurance Supervisory Board 2003 and 2004 REPORTS ABOUT INSURANCE ACTIVITIES IN TURKEY and Industry average values are obtained from General Directorate of Insurance and the other values are calculated using balance sheets and income statements of the company belonging those years)

Ak Sigorta's Shareholder's Equity/Total Assets ratio has an increasing trend until 2003 and it is equal to 0.48 in 2004. It is above industry average which means, the company is not good at efficient usage of shareholders equity, however, its credibility is better than its rivals. Its current ratio is much greater than the industry average, even it reached to a value almost two times of industry average in years 2003 and 2004 thus the ability of the firm to compensate its requirements for debts is very good. In receivables over assets and equity ratios are the company seems doing well because its premium & reinsurance receivables/total assets ratio is lower than the industry average and its receivables from agencies over shareholder's equity ratio is zero which shows the company is effective in collecting receivables, however, the credit policy is too strict . The company has smaller loss/premium ratios than the average of the sector and it has a decreasing trend from 2003 to 2004, and this means the company's ability is good at determining potentially risky customer's premium rates. General expenses over received premiums ratio of the company has a leveled trend from 2000 to 2004. It can be inferred here that the company spends less than its rivals for personal expenses, general administrative expenses, depreciation expenses on average for the same amount of premium generation. When we come to the profit before taxes/received premiums, technical profit/received premiums, and financial profit /received premiums

ratios, it is seen that profit before taxes/received premiums ratio is really high in years 2000 and 2001; however that ratio decreased in 2002 sharply to 11%. After that year, the ratio started to increase again and became larger than the average in 2004. In technical profit/received premiums ratio, the company has a constant trend from 2000 to 2002, however, it decreased dramatically in 2003 and nevertheless it could not recover itself in 2004 and it stayed behind the industry average in year 2004.Lastly, the company's financial profitability is very good, the ratio is very high in 2000 and 2001. Although it decreases in from 2001 to 2002 most likely because of the financial crisis faced in 2001, the ratio is still much above the average in 2004 which means the company manages interest, rent, exchange incomes and expenses successful.

After evaluations on Ak Sigorta A.Ş.'s financial ratios, the ratios of Ray Sigorta that constitute the table below are examined in the following paragraph.

Table 4.3

Ray Sigorta Financial Ratios

	Industry Average 2004	2000	2001	2002	2003	2004
Shareholder's Equity/Total Assets	**0,27**	0,24	0,21	0,31	0,28	0,22
Current Ratio	**1,37**	1,49	1,39	1,59	1,39	1,27
Premium & Reins. Receivables/Total Assets	**0,32**	0,51	0,42	0,40	0,42	0,42
Receivables from Agencies/Shareholder's Equity	**0,98**	1,61	1,51	1,00	1,17	1,58
Loss/Premium(Net)	**1,19**	N/A	N/A	N/A	0,82	0,74
General Expenses/Received Premiums	**0,17**	0,14	0,16	0,12	0,09	0,14
Profit before taxes/Received Premiums	**0,07**	0,07	0,05	0,04	-0,01	-0,02
Technical Profit/Received Premiums	**0,10**	0,16	0,09	0,10	0,03	0,09
Financial Profit/Received Premiums	**-0,02**	0,09	0,16	0,08	0,05	0,05

(Loss/Premium ratios are taken from Undersecretariat of Treasury Insurance Supervisory Board 2003 and 2004 REPORTS ABOUT INSURANCE ACTIVITIES IN TURKEY and Industry average values are obtained from General Directorate of Insurance and the other values are calculated using balance sheets and income statements of the company belonging those years)

Shareholder's equity over total assets ratio of Ray Sigorta has changed between 0.20 and 0.30 since year 2000 and it was smaller than the industry average in 2004. This is good for company and means that the company uses shareholder's equity effectively, however, if this ratio is small because

of the lack of equity than it may decrease the credibility of the company. Current ratio of the company has a leveled trend from 2000 to 2004 and it is a little smaller than the industry average, by using this data, it can be said that the company's ability to cover short term liabilities is similar to the average of the sector. The company's premium & reinsurance receivables over received premiums ratio has not altered much for five years and it is larger than the average in year 2004. It can be said that the company's receivable collection policy is not effective in comparison with the average of its rivals. Receivables from agencies over shareholder's equity ratio is high and larger than the average in 2004 which means some part of shareholder's equity is used for agency receivables and receivables from agencies cannot be collected properly. Although company's loss/premium ratio is lower than the average in year 2004, it is high enough to decrease the profit and shows insufficient approach in determining risks. The company's general expenses over received premiums ratio has a constant trend and very close to the industry average in 2004 which means it is as successful as its rivals average, however, not doing well in managing personal, administrative, and depreciation expenses. In financial profit generation in comparison with received premiums, the company seems doing better than the average; however, this does not mean that it is very successful. According to technical profit over received premiums ratio, the company's performance has been turning around the average and finally if profit before taxes over received premiums ratio is studied, it is seen that the ratio has been reducing since 2000, and it became negative in 2003 and continued decreasing in 2004. As a conclusion, according to the profitability ratios, it can be said that the company's overall performance is bad and carrying on worsening.

The next company to be investigated is İsviçre Sigorta A.Ş. Its ratios are on the table below.

Table 4.4

İsviçre Sigorta Financial Ratios

	Industry Average 2004	2000	2001	2002	2003	2004
Shareholder's Equity/Total Assets	**0,27**	0,15	0,14	0,17	0,19	N/A
Current Ratio	**1,37**	1,30	1,30	1,38	1,33	N/A
Premium & Reins. Receivables/Total Assets	**0,32**	0,41	0,38	0,38	0,38	N/A
Receivables from Agencies/Shareholder's Equity	**0,98**	2,32	2,21	1,81	1,70	N/A
Loss/Premium(Net)	**1,19**	N/A	N/A	N/A	0,72	0,70
General Expenses/Received Premiums	**0,17**	0,08	0,08	0,08	0,07	N/A
Profit before taxes/Received Premiums	**0,07**	0,06	0,08	0,09	0,05	N/A
Technical Profit/Received Premiums	**0,10**	0,13	0,04	0,08	0,05	N/A
Financial Profit/Received Premiums	**-0,02**	0,06	0,17	0,14	0,10	N/A

(Loss/Premium ratios are taken from Undersecretariat of Treasury Insurance Supervisory Board 2003 and 2004 REPORTS ABOUT INSURANCE ACTIVITIES IN TURKEY and Industry average values are obtained from General Directorate of Insurance and the other values are calculated using balance sheets and income statements of the company belonging those years)

İsviçre Sigorta's shareholder's equity/total assets ratio has a leveled trend and a small value which means, the company is able to use shareholder's equity effectively but its credibility is very low. Its current ratio has also a leveled motion and it may be inferred its ratio does not alter a lot in 2004 and became very similar to the industry average. Thus the ability of the firm to compensate its requirements for debts is as good as its competitors' average in the sector. The company's receivables over assets and equity ratios seem to have a steady trend and it is expected they are above the average of the sector in 2004. Especially, receivable from agencies/received premiums ratio is much higher than the average which is an indicator of very poor receivable collection policy. The company has smaller loss/premium ratios than the average of the sector and it has a decreasing trend from 2003 to 2004. When general expenses over received premiums ratio comes into the picture, the company's ratio has a very stable trend and it is most probably less than half of the average in year 2004. This means that the company is very successful in management of personal expenses, general administrative expenses, depreciation expenses etc. In technical profit/received premiums ratio, the company has an oscillating trend from 2000 to 2003, and it does not seem to be larger than the average in year 2004 thus it cannot be said the company is successful in costs of the

policies from which the premiums are generated. The company's performance on financial profitability is good enough, which means the company manage interest, rent, exchange incomes and expenses very well. In profit before taxes/received premiums ratio, the company has values less than 10% until year 2003.

General overviews of these four companies' financial ratios which are significant according to insurance approach are done in previous paragraphs. In the following paragraphs, they will be compared with themselves in order to have a ranking between them.

According to shareholder's equity over total assets ratio, it is seen that İsviçre Sigorta is in the best place with its smaller ratios than the other three companies. However, in current ratio, Ak Sigorta and Anadolu Sigorta share the first two places with higher capacities of covering short term liabilities and larger ratios than the average of industry. The same two companies are also the most successful companies in premium & reinsurance receivables/ total assets ratio with lower or similar ratios with industry average in group of four companies. Receivables from agencies over ratio is similar to average for Anadolu Sigorta, it is very low for Ak Sigorta, larger than the average for Ray Sigorta, and very high for İsviçre Sigorta. Thus Anadolu Sigorta and Ak Sigorta are the companies who have the most effective receivables collection abilities although Ak Sigorta's credit policy is extremely strict. All of the companies were able to decrease their loss/ premium ratios from 2003 to 2004 but again Ak Sigorta and Anadolu Sigorta performed better than its rivals in 2004 with the same ratio of 0.65 which means they have a better and more proper approach in determining risks of the customers. As was mentioned above, general expenses include administrative, personal, and depreciation expenses and İsviçre Sigorta prove its ability to manage these types of expenses better than the other three companies with ratios around 0.08. After all these comparisons, at last, profitability ratios come into the picture. The table below shows whichever company/companies are dominating in performance.

Table 4.5

Comparison of four selected companies with respect to profitability

	Technical Profit / Received Premiums	Financial Profit / Received Premiums	Profit before taxes/ Received Premiums
2000	ANADOLU	AK	ANADOLU/AK
2001	ANADOLU/AK	AK	ANADOLU/AK
2002	ANADOLU/AK	ANADOLU	ANADOLU
2003	RAY/İSVİÇRE	ANADOLU/AK	ANADOLU/AK
2004	RAY	AK	ANADOLU/AK

Technical profit is the difference between technical incomes and technical expenses. Briefly technical incomes are the received premiums and technical expenses are the payments for claims. Financial profit; however, is the difference between interest, rent, compulsory earthquake insurance commissions, exchange incomes and expenses. As seen from the table Ak Sigorta and Anadolu Sigorta have the best values in financial profit/received premiums and profit before taxes/received premiums ratios. They are also in good conditions according to technical profit/received premiums ratio except for two years. Therefore, it can easily be said that Ak Sigorta and Anadolu Sigorta have the best performances and profitability among four companies.

After the comparison of these four companies according to their general financial conditions, it is mentioned their policy writing policies, the questions wanted agencies to ask to the potential customers before writing the auto insurance policies and declaring premium rates for customers. In the following table it is included the questions placed in the on-line system of the companies that have to be answered by customers.

Table 4.6

On-line system questions of four companies

ANADOLU SİGORTA	AK SİGORTA	RAY SİGORTA	İSVİÇRE SİGORTA
1- Name & Surname of Customer	1- Name & Surname of Customer	1- Name & Surname of Customer	1- Name & Surname of Customer
2- Turkish Republic ID Number	2- Turkish Republic ID Number	2- Turkish Republic ID Number	2- Turkish Republic ID Number
3- Tax ID Number	3- Tax ID Number	3- Tax ID Number	3- Tax ID Number
4- Adress	4- Adress	4- Adress	4- Adress
5- Telephone Number	5- Telephone Number	5- Telephone Number	5- Telephone Number
6- Father's name	6- Father's name	6- Father's name	6- Father's name
7- Date of Birth	7- Date of Birth	7- Date of Birth	7- Date of Birth
8- Underwriting Date of Policy	8- Underwriting Date of Policy	8- Underwriting Date of Policy	8- Underwriting Date of Policy
9- Starting Date of Insurance	9- Starting Date of Insurance	9- Starting Date of Insurance	9- Starting Date of Insurance
10- Type of Payment	10- Type of Payment	10- Type of Payment	10- Type of Payment
11- Vehicle Pawned or not	11- Vehicle Pawned or not	11- Vehicle Pawned or not	11- Vehicle Pawned or not
12- Vehicle Usage, Commercial/Private	12- Vehicle Usage, Commercial/Private	12- Vehicle Usage, Commercial/Private	12- Vehicle Usage, Commercial/Private
13- Earthquake/Flood exemption rate	13-Earthquake/Flood exemption rate	13-Earthquake/Flood exemption rate	13-Earthquake/Flood exemption rate
14- Discount of Harmlessness	14- Discount of Harmlessness	14- Discount of Harmlessness	14- Discount of Harmlessness
15- Abroad usage additional premium	15- Abroad usage additional premium	15- Abroad usage additional premium	15- Abroad usage additional premium
16- Dates that will be spent abroad	16- Dates that will be spent abroad	16- Dates that will be spent abroad	16- Dates that will be spent abroad
17- Any unoriginal parts	17- Any unoriginal parts	17- Any unoriginal parts	17- Any unoriginal parts
18- Motor & Chassis number	18- Motor & Chassis number	18- Motor & Chassis number	18- Motor & Chassis number
19- License number of vehicle	19- License number of vehicle	19- License number of vehicle	19- License number of vehicle
20- Optional Financial Responsibility rate	20- Optional Financial Responsibility rate	20- Optional Financial Responsibility rate	20- Optional Financial Responsibility rate
21- Personal Accident rate	21- Personal Accident rate	21- Personal Accident rate	21- Personal Accident rate
22- Model of Vehicle	22- Model of Vehicle	22- Model of Vehicle	22- Model of Vehicle
23- Production date of the vehicle	23- Production date of the vehicle	23- Production date of the vehicle	23- Production date of the vehicle
24- Driving License date of customer	24- Driving License date of customer		
25- Amount of exemption wanted by customer	25- Amount of exemption wanted by customer		

(Source: Companies' pricing and policy writing systems)

As seen from the table, there are common questions asked by insurance companies, and there are exceptional questions only asked by Anadolu Sigorta and Ak Sigorta. Other than some informational questions of the systems there are some other questions directly influence the premiums of any individual customers. The common premium determining questions are type of payment, vehicle private or commercial, earthquake/flood exemption

rate, discount of harmlessness, any unoriginal parts, license number of vehicle, optional financial responsibility rate, personal accident rate, model of vehicle, and production date of vehicle. Among these questions vehicle private or commercial, discount of harmlessness, license number of vehicle, model of vehicle, and production date of vehicle have no alternatives for the real answer, because all answers have to be based on legal documents. However the answers for any unoriginal parts, earthquake/flood exemption rate, type of payment, optional financial responsibility rate, and personal accident rate are based on customer's declaration and responsibility for these answers is solely on the customer. As mentioned above, there are some exceptional cases in Anadolu Sigorta and Ak Sigorta systems, they ask driving license date of the customer, how many people uses the car, any exemptions wanted by customer. The premium rate is determined also by using the answers of these two questions. Furthermore only these two companies make discounts on the date of birth of customer. In other words, they make reductions in premium rate if the customer is older than 30 and he is the only driver of the car or if the customer is older than 35 and if the customer have a driving license for more than 5 years. Moreover these two companies make adjustments or discounts, if the customer wants to take some parts of the risk. In detail, Anadolu Sigorta decreases the premium rate by 30% if customer accepts to cover losses up to 2% of total insured value and 40% discount is made if customer consents to pay losses up to 4% of total insured value. A very similar system is applied in Ak Sigorta; if customer accepts to pay 1%, 1.5% and 2% of total insured value in case of any loss, the premium rate is reduced by 20%, 30%, and 40% respectively. Besides these, Anadolu Sigorta has a record of license numbers of previously insured cars and when there is a new demand for auto insurance for a vehicle, the lists are investigated in order to find out previously occurred losses and in some cases the customer is rejected. Lastly, again in Anadolu Sigorta's system, if an agency gives an offer for auto insurance for a certain car, no other agencies can enter the on-line system with the same license number. In other words, more than one agency can not give an offer for the same car, if the license number is truly entered to the system.

As inferred from the studies on the systems of these four insurance companies, Anadolu Sigorta and Ak Sigorta have better systems to decrease asymmetric information, make more effective classification and selection and determine risk and proper designation of premium rates. Also, it is seen that they perform better than the other two companies (Ray Sigorta and İsviçre Sigorta) with respect to overall effectiveness and profitability. As a conclusion, it can be said that the companies having better systems of determination of risks and premium rates are more successful in their business in general. Thus, it is suggested that any newer and more effective method to determine the risks and premium rates increases the overall performance of an insurance company.

Up to now, current structure of insurance companies and the methods for determination of risks and premium rates are examined. These studies are made generally for understanding of information asymmetry problems between insurance companies and customers. In the next section, another study is explained in order to find out deficiencies in the relations between customers and agencies, and companies and their agencies. During this study, five agencies from each of four companies, total 20 agencies, are examined according to their policy selling, marketing and pricing procedures.

According to the study, it is seen that without using on-line system any policy can be underwritten. The first part of the system, personal data of the customer, is always filled properly by all of the agencies. Although sll of the data is based on customer's declarations, without a correct Turkish ID number and Tax ID number, the system doe not give any results (governmental obligation). Furthermore, agencies from Ak Sigorta and Anadolu Sigorta always asked customer's driving license date and and the date of birth. The factors here that are important in premium determination are driving license date and birth date of customer because both of these two companies apply discounts on premium rates as mentioned above.

Other than that, the second part, vehicle information is taken truly. The question in this part includes, mark and model of the vehicle, license number of the vehicle, motor and chassis number of the vehicle, vehicle pawned or not. Among these, mark and model of the vehicle influence the price because they are required to determine the price of the vehicle in the list that is published by government and thus total insured value. Also license number of the vehicle affects the premium rate since there are discounts for provinces in which traffic density is lesser than the greater cities.

The third part is the part in which guarantees, discounts and additional premiums are embraced. Almost none of the agencies from any companies does not require asking anything about the data except for harmlessness in this part. For instance, they do not try to learn actual needs and wants of the customer about the coverage of optional financial responsibility and personal accident which are the amount of payment for the medical treatment of passengers who are in the vehicle in the instant of accident, respectively. Furthermore, they do not ask whether the customer wants to undertake some of the risks in case of an earthquake or flood or he is ready to buy more for buying full coverage. Also, it is never inquired that whether the customer desires to take some part of the total risk of the policy for lesser premiums or not by Ak Sigorta and Anadolu Sigorta agencies although this is an important application to determine risks and premium rates and only applied by them among four companies.

Another purpose of this study is to comprehend whether there is a settled price policy used by firms and there are price differences between agencies belonging to the same insurance company. First, it should be mentioned that no policy can be underwritten out of knowledge of the regional directorates of the companies and any price for any policy is taken from the on-line system. Also for special discounts, regional directorate's permission is compulsory. Thus, prices given by agencies belonging to the same company are very close to each other and small differences are usually

because of different coverage of policies. However, there are differences in prices given by agencies belonging to different companies. These differences are caused by different multipliers of companies have policies for prices and they are very close to be successful in price standardization.

In conclusion, customers and companies are influenced worse than agencies when there is asymmetric information. Companies systems for determination of risks, setting of premium rates, classification and selection seem working but insufficient. In other words, bad results of asymmetric information still exist. Other than that, sometimes they cannot obtain actual data and actual needs of customers from agencies and it may be harmful in determining risk. For example, none of the agencies controls current situation of the vehicle (whether there is an existing damage or not) and if there is an existing damage, some of the customers may claim about that existing damage after they have auto insurance. Moreover, customers generally have very limited knowledge about optional financial responsibility, personnel accident, earthquake and flood coverage, and when damage occurs related with one of these coverage, agencies are not the one spoken to and customer and company come face to face. This is undesirable for both customer and company. Customer cannot cover his loss and company has to deal with a problem in which it has no mistake.

4.1 RECOMMENDATIONS AND SUGGESTIONS

The list related with potential problems can be extended, however, it is important here to find and apply effective and practical solutions. In the following paragraphs, there are some suggestions that will aid to decrease information asymmetric and thus information asymmetric problems which are mentioned above given.

In the beginning, some suggestions are made in order to solve problems faced by companies that are caused by lack of better classification and selection methods. In other words, the problems originated because of lack

of constituting groups having homogeneous risks and putting customers into right baskets. Auto insurance companies should narrow their customer groups according to their risk potentials. First, customers should be grouped with respect to sex of them and premium rates should be adjusted. Female or male customers should pay more whichever one is more likely to have an accident. Second, customers should be distinguished according to their training and occupation and premium rates should be decided as per this classification. Third, there is an application in some insurance companies in which customers are divided according to their ages and premium rates are lesser if the customer is older than 30 or 35 and this should be used by all of the companies. Fourth, companies should investigate past data of traffic punishment of the customers and charge more from the ones having more punishment than the averages (these investigations may be narrowed according to the type of punishment, i.e. alcohol, excess speed, or red light violation). Fifth, companies in Turkey make discount in premium rates for the vehicles that have a license number of a small province since that province has less traffic density. However, it is never inspected whether that vehicle is used in that province or not after the policy is sold. Sixth, there can be a classification according to mark and model of the vehicle. There are crush tests or researches about break down frequency of vehicles and these studies are helpful for making such classifications. Finally, psychological driving tests can be used in order to better determine the driving habits and risk level of a customer.

Secondly, there are information asymmetry problems that reduce the effectiveness of the companies and resulted by improper applications of agencies. First, as mentioned above, agencies never check the existing damages and harms on the car before a policy is underwritten and this causes undesirable situations if there is a claim just after the guarantee starting date. Companies should prepare a checklist with respect to the type of the vehicle and it should ask for a signed copy before the policy is underwritten. Second, companies should make it compulsory to agencies to take some of the risks of the policies that they have underwritten. In other

words, agencies should accept to pay a little (0 to 5%) portion of the loss in case of damage. This most likely forces agencies to investigate the risk level of the customer in a more serious manner. Third, it should be provided that customers know any detail about optional financial responsibility, personal accident, earthquake and flood coverage of their policy. This can be done by providing customers with small but comprehensive information catalogues or calling and informing customers after selling.

Finally, the problems faced after an occurred damage are worse for customers than the companies or agencies because if a guarantee or coverage is not written on the policy it can never be claimed. The most important thing for reducing these types of problems of customers is to be aware of the coverage and guarantees of the policy. Although the information is not given by the agencies properly, it is the responsibility of the customer to learn all the details of the policy. In fact, almost all of the details of the policy are written on the booklets published by the companies, however, sometimes these are not worth to read by the customers and sometimes agencies ignore their importance.

CHAPTER V

CONCLUSION

According to insurance business structure in Turkey section of this study, it can be said that Turkish insurance system is on a good way. However, of course, system has some weak points in both risk determination and premium rate standards. Some of these weaknesses are directly caused by asymmetric information appeared in favor of one of the parties of insurance sector that are mentioned above. This is because in all of the components of an insurance system, information is very important. Therefore most important and effective solutions can be created by better investigation of the information asymmetric character of insurance business.

As mentioned above, the research realized in the third part of this study is made for auto insurance system in Turkey. However, auto insurance seems to be representing the whole insurance business since for most of the insurance companies except for the Individual Retirement Savings and Investment companies, auto insurance constitutes the major part of the business. Then it can easily be said that the results of a study made on auto insurance systems of companies gives reasonable results for the whole system.

During the research, first some ratios that are significant in finance and insurance terms are analyzed. Shareholder's equity/total assets ratio is important to understand what percent of assets is financed by owner's equity and the company's credibility and productivity, current ratio is significant in evaluating liquidity of the company, receivables over equity and assets ratios are for assessment of effectiveness of receivable collection policies of the companies, loss/premium ratio shows how successful a company in determination of risks and premiums, general

expenses over premiums ratio gives an idea about the management ability of the companies of administration, personnel etc. expenses, and profit over premiums ratios describe overall performance and profitability of the companies.

Some of these ratios are calculated by using data on income statements and balance sheets and some of them are taken from governmental authorities. According to the analysis, it is seen that two of these companies, Ak Sigorta and Anadolu Sigorta, obviously perform better than the other two companies. They seem to do well in their business according to most of the ratios.

After the analysis of the ratios, the systems of the companies for auto insurance are investigated. All of the companies have on-line, standard systems that have to be used by all of the agencies. However, the questions on the systems are somewhat different. Ak Sigorta and Anadolu Sigorta ask more questions to their potential customers and also there are some questions used by all of the companies commonly but only these two uses the data as a distinction tool. Therefore their classification and selection methods are more effective than their rivals and they have more specialized niches.

The relation between two researches mentioned above shows that the companies which are in better overall situations have better methods for determination of risks of potential customers and making decisions on premium rates. In other words, it can be said that the companies having better methods of determination of risks, selection and classification perform better in insurance business.

Another research is made in the scope of this study. Five randomly selected agencies from four of the companies are investigated to determine whether the agencies obey general standards of their parent companies or not. In result of this research, it is seen that almost all of the agencies obey the

general rules because system is directed on-line from the headquarters or regional directories and they ask any questions whose answers cannot be changed by the customers. For example, date of birth of the customers, type and model of the vehicle are always requested from customers by agencies. However some options never be asked by any agency, like optional financial responsibility, personal accident, earthquake, flood coverage choices of the customers. This is mostly because agencies have no responsibility when damage occurs related with these types of coverage.

Companies are affected badly since they do not add necessary questions to their systems and both companies and customers are influenced because of the optional clauses which are almost never chosen by customers and asked by agencies. Companies suffer in this situation since they directly face with customers; however, the losses of customers are more serious because they cannot cover their losses in such cases.

After these it can be said that insurance companies suffer from asymmetric information mostly because of their own policies and loose control on their agencies although it is very important to keep company image in a good position by using agencies which are the only windows of companies to customers.

Furthermore, cases influencing customers badly are mostly caused by unawareness of them about their insurance policies and general conditions of the insurance company.

As seen asymmetric information obstructs insurance companies to perform better and customers can not cover as much financial losses as they expect. For these reasons, last part of thesis includes some suggestions to reduce or avoid asymmetric information in insurance sector.

Some of these suggestions are applied in developed countries, especially in United States. For example, risk determination by using historical traffic

punishment data of a customer is a method used in United States. Also, classification of customers according to their sex is applied in U.S. Other than that there are some discounts in premium rates in some provinces in U.S. with respect to the occupation of the customer.

Some of the suggestions are new ideas. For instance, determination of the city in which the vehicle is usually driven is a fresh idea. Moreover, using the data of frequency of break down and the results of crush tests to narrow the risk groups is not applied yet. Applying psychological test to determine driving habits of potential customers is also a new approach.

Some of the above mentioned suggestions are hard to apply. As an example, in Turkey there is no proper data of traffic punishment and even if there is such a system, it is not open to any citizen to learn such information. Moreover, there should be proper statistics of citizens' driving habits according to their occupation, if companies constitute market niches based on customers' occupation. This idea is a little easier to apply than the former approach because this type of survey can be prepared by insurance companies. However, some of the ideas are very simple to apply. For instance, break down frequency and crushing test statistics are not hard to obtain and thus better classification of customers can be done. Also, a simple psychological test is affordable to be applied regularly.

As known, above mentioned suggestions are introduced to reduce asymmetric information between insurance companies and their customers. When solution of asymmetric information problems between insurance companies and their agencies comes into picture, there are two solutions and both of them are easy to apply. First using a previously prepared existing situation checklist for vehicles, and second transferring some of the risk to agencies are suggested

Lastly, it is suggested customers to inform themselves about their coverage and system of the insurance company which are very easy to achieve.

As a conclusion, it is proposed that insurance companies that have better methods for risk and premium rate determination are more successful. Other than that, it can be said that asymmetric information and problems based on it appear since companies and their agencies are the ones to reduce or avoid these problems are them, at the same time. In other words, agencies and insurance companies are sharing the crime and its consequences. Therefore, applying suggestions are very important and beneficial especially for companies although a few numbers of them are hard to apply. Finally, it should be well-understood that information asymmetry may not be totally terminated, however there are a lot of ways to reduce it and being more successful in insurance business without unnecessary predictions, doubts and assumptions.

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