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Competition in markets for life insurance

Korte samenvatting

Dit rapport bevat een empirische analyse van concurrentie op de markt voor levensverzekeringen. Op deze markt spelen financiële adviseurs een belangrijke rol. Daarom wordt tevens uitgebreid ingegaan op de werking van de markt voor financieel advies. De belangrijkste uitkomsten luiden als volgt. Empirische concurrentie-indicatoren wijzen op een beperkte werking van concurrentie op de markt voor levensverzekeringen. Er zijn grote schaalvoordelen, de gemiddelde efficiëntie is laag en de zogenoemde Boone-indicator duidt op weinig concurrentie in vergelijking met andere dienstensectoren. Ook de hogere winstgevendheid van Nederlandse levensverzekeraars vergeleken met hun buitenlandse branchegenoten duiden op minder intensieve concurrentie, maar hierbij past de kanttekening dat deze indicator hoofdzakelijk het verleden weerspiegelt. Beter functioneren van tussenpersonen en adviseurs kan een sleutel bieden voor verbetering van de concurrentie. Uit de onderzoeksresultaten blijkt dat consumenten die via een tussenpersoon lijfrentes hebben aangeschaft, gemiddeld een lagere opbrengst realiseren dan consumenten die direct zaken hebben gedaan met een levensverzekeraar. De uitkomsten onderstrepen het belang van grotere transparantie van en onpartijdige advisering over levensverzekeringsproducten.

Steekwoorden: concurrentie, levensverzekeringen, tussenpersonen

Abstract

This report presents an empirical analysis of competition in the market for life insurance. In this market, financial advisors play a large role. Therefore, the report devotes considerable attention to the functioning of the market for financial advice. The main findings are as follows. Empirical indicators of competition find only weak competition in the market for life insurance. There are substantial economies of scale, large X-inefficiencies, and limited competition as measured by the Boone-indicator compared to other services sectors. Also the higher profitability of Dutch life insurers compared to their foreign peers suggests weak competition, although it should be pointed out that this indicator mainly reflects the situation in the past. Better functioning of financial advisors offers a key towards improving competition. Consumers who purchased annuities through advisors are found to achieve lower pay-outs than consumers who purchased directly from life insurers. This finding underlines the importance of more transparency of life insurance products and of independent advice.

Key words: competition, life insurance, financial advice
JEL code: L13, D14

Contents

Preface

Life insurance products play a very important role in the financial planning of many households. For this reason it is important that consumers have access to a well-functioning market for life insurance products. At the same time, many consumers view life insurance products as complicated. Therefore consumers often invoke the assistance of financial advisors who consequently play a central role in this market.

This study presents an empirical analysis of competition in the Dutch market for life insurance. A separate chapter discusses policy options for improving the functioning of this market. The study should be useful to policymakers responsible for designing appropriate policies for improving the functioning of markets for life insurance and financial advice.

The report is based on joint research of CPB and NMa. The research team consisted of Michiel Bijlsma (NMa), Machiel van Dijk (CPB), Michiel van Leuvensteijn (CPB), Marc Pomp (CPB) and Cora Zonderland (NMa). Jaap Bikker of the Dutch Central Bank (DNB) contributed a large part of chapter 4. Finally, we benefited from the work of Victoria Chorny, who wrote her Master's thesis during an internship at the CPB.

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Summary

The life insurance industry produces a wide range of financial products, from classical life insurance (insurance against living "too short") to pensions and annuities (insurance against living "too long") to products that combine an insurance and a savings element e.g. capital insurance linked to mortgages for owner-occupied housing. Thus, life insurance products play a very important role in the financial planning of many households.

It cannot be taken for granted that these markets function properly. Characteristics of the market such as concentration, barriers to entry, and high search and switching costs may raise concerns about anti-competitive behaviour. These potential problems may be exacerbated by the nature of the products involved. Many consumers base their choice of product and firm on financial advice, showing that consumers find it hard to make the right choice on their own. As a result, the functioning of the market for life insurances depends to a substantial degree on the functioning of the market for financial advice.

In this report, we present an empirical analysis of the functioning of the market for life insurance. The empirical analysis consists of two parts. In the first part, we focus on competition in the market for life insurance. In the second part, we focus on the market for financial advice.

Empirical indicators of competition in the market for life insurance

The empirical analysis of competition in the market for life insurance focuses on three indicators of competition. The first indicator is based on economies of scale. Estimates indicate that scale economies are substantial compared to what is usually found for other financial institutions such as banks. All existing insurance companies are far below the estimated (theoretical) optimal size. The present analysis therefore seems to suggest that further consolidation in the Dutch life insurance market may be efficient. Apparently, competitive pressure in the insurance market has been insufficient to force insurance firms to exploit the existing economies of scale.

The second indicator is based on so-called X-inefficiency. We find X-inefficiency estimates of around 25%, on average, a magnitude which would not be expected in a market with heavy competition. Incidentally, such inefficiencies are not uncommon for life insurance firms in other countries.

The third indicator is the Boone indicator. Estimates of this indicator point to weak competition in the Dutch life insurance industry compared to indicator values in other service industries. All our empirical analyses are based on balance sheet and profit and loss data from both new and old business. Although the annual premiums stem in large part from new policies, the portfolio of policies is built up over the years. Hence, an improvement of competition would show up in these figures only with some delay, depending on the type of indicator. However,

annual estimates of the Boone indicator for the most recent years find a weakening rather than a strengthening of competition.

Although the evidence from these three indicators does not allow us to draw strong conclusions on competition in the insurance market, all three indicators find only weak competition.

Empirical analysis of the quality of financial advice

On the basis of consumer survey data, we investigated whether and how product choices differ between consumers who use financial advisors and consumers who do not. By comparing the choices of these two groups, we are able to draw conclusion about the functioning of financial advisors. A first finding is that consumers who are aware of the fact that advisors are usually being paid on the basis of commission are much less likely to purchase through an insurance advisor. Moreover, the effect of commission awareness on choice of channel is very large. Second, a consumer's level of risk aversion is found to have a significant influence on product choice in the case of direct purchase. The higher the level of risk aversion, the higher the probability of purchasing a safe product. Surprisingly, this relation between risk aversion and product choice is absent in the case of purchase through an insurance broker. The most probable explanation for this is that a substantial number of insurance advisors do not take into account consumers' risk aversion when advising consumers on what product to purchase.

By combining the consumer survey data and data on quotations by life insurance companies, we also investigated the impact of search behaviour, financial advice and personal characteristics on the quality of the decisions that consumers make with respect to life insurances with a guaranteed pay-out. Only the use of an insurance advisor was found to have a statistically significant effect on how well consumers select an insurance company. This effect turns out to be negative: on average the respondents in our sample who bought a policy through an insurance advisor receive a significantly lower pay-out than the respondents who bought a policy directly from an insurer. Furthermore, we found that virtually all respondents could receive a pay-out that is substantially higher than the pay-out of the policies they have actually chosen, independent of whether or not they used financial advice. We conclude therefore that, within this type of life insurances, (i) consumers generally do not buy the best policies available, (ii) advisors do not advice the best available policies for their customers, and (iii) consumers who buy through a financial advisor are worse off than those who do not.

Policy options

The empirical analysis has raised doubt about the degree of competition in life insurance markets. Moreover, this analysis also indicates that financial advisors often fail to advise the best product to their clients. Government policy could play a role in improving the functioning of these markets. We therefore present a number of policy options that address these issues. A number of policies are already being implemented in one form or another, other options will be

implemented after the new law on financial intermediation (WFD) has entered into force by the end of 2005. In addition, we also consider a number of policy options that are currently not discussed in Dutch policy debates. Each of the policy options has potential benefits but also potential costs in terms of implementation costs or administrative burden. Before implementation an assessment of their costs and benefits is recommended.

We distinguish between policy options aimed at life insurance firms, policy options aimed at financial advisors and policy options aimed at consumers. In the first category, we argue that it will be important to evaluate whether the recent modifications to the Initial Disclosure Document (in Dutch: Financiële Bijsluiter) do indeed result in greater transparency. There is also a case for reducing reputational barriers to competition by improving the safety-net in case of failure of a life insurance firm.

Turning to financial advice, one policy option is to introduce certificates for independent advisors. A certificate of independence could be introduced which lays down certain minimum requirements such as the number of different firms to be included in the comparison on which the advice is based, the absence of financial ties other than commission, the obligation to keep records of the advice process for at least a certain period etc. A policy option that goes one step further would be to reserve the label 'independent' for advisors who are purely paid by consumers on the basis of fees per hour of advice. Another option is further improving the transparency of remuneration of advisors. One way of achieving this is along the lines of the approach recently introduced in the UK, where advisors must show the market average of the costs of advice for similar products. In addition to improving transparency, policymakers may also regulate the terms of the contracts between life insurance firms and financial advisors. By excluding certain types of contract conditions, it may be possible to better align the interests of consumers and advisors. Once again the UK example is relevant. So-called volume contracts are explicitly forbidden. In addition, financial advisors are not allowed to take out loans from banks or life insurance firms for which they sell financial products. Finally, presents, holiday trips, or bonuses from insurance firms to advisors are not allowed. Although the effects of these measures on the quality of advice are hard to predict, better aligning the interests of consumers and advisors would be expected to improve this quality.

Policy options aimed at consumers include improving consumer awareness of the need to shop around. One possibility is a policy experiment in which comparable information on financial products is made available to consumers for free. A second option is standardisation of products. This has been attempted in the UK with the introduction of so-called stakeholder products. The stakeholder approach can be summarised as "standardisation light" (since firms were still free to offer non-stakeholder products). There is at least one example from other markets were such a policy seems to work, namely the Norwegian energy market. A final option is to reduce switching costs. Because of front loading of costs, switching to another product or another firm is expensive. Reducing switching costs by disallowing front loading and replacing this by a system of annual commissions would give consumers the option to switch to

another product and/or another firm. However, reducing switching costs also has a possible disadvantage. Lack of consumer commitment can generate inefficiencies in insurance markets because short-term contracts do not offer insurance against reclassification risk (a change in health status resulting in increased premiums). This possible disadvantage must be traded-off against the advantages of reduced switching costs. Recently the Dutch government has decided to impose a maximum on front loading of 50% of the total commission received. This decision can be seen as a compromise between the advantages and disadvantages of switching costs in this market.

1   Introduction

The life insurance industry produces a wide range of financial products, from classical life insurance (insurance against living "too short") to pensions and annuities (insurance against living "too long") to products that combine an insurance and a savings element e.g. capital insurance linked to mortgages for owner-occupied housing. Thus, life insurance products play a very important role in the financial planning of many households. This important role is reflected in the size of the life insurance industry: spending on life insurance products accounts for almost 5% of GDP for all products combined. To put this figure into perspective, annual spending on new cars amount to about 2% of GDP. Clearly, it is very important for consumer welfare to have access to well functioning markets for life insurance products.

It cannot be taken for granted that these markets do indeed function properly. Characteristics of the market such as concentration, barriers to entry, and high search and switching costs may raise concerns about unilateral and/or coordinated anti-competitive behaviour. Moreover, these problems may be exacerbated by the nature of the products involved. Many consumers base their choice of both product and firm on financial advice, which shows that consumers find it hard to make the right choice on their own. As a result, the functioning of the market for life insurances depends to a substantial degree on the functioning of the market for financial advice.

In this report, we present an empirical analysis of the functioning of the market for life insurance. Before presenting these empirical analyses, we present our theoretical framework for studying competition in this market (chapter 2). This is followed by chapter 3 in which we lay out the main facts about the Dutch market for life insurance in an international comparative perspective. The empirical analysis consists of two parts. In the first part, we focus on the functioning of the market for life insurance as a whole (chapter 4). In the second part, we focus on the market for financial advice (chapter 5). Chapter 6 discusses policy options for improving the functioning of the market for life insurance.

2 Analytical framework and literature review

2.1 Introduction

In this chapter we present our analytical framework for analysing competition in the market for life insurance. The starting point of our framework is the vertical structure of the market, which is characterised by the presence of financial intermediaries as an important link between final consumers and life insurance companies. The next sections discuss determinants of competition for the three actors in this vertical structure: life insurance firms, financial intermediaries and consumers. Where relevant, empirical results from the literature are mentioned.

2.2 The vertical structure of the market and the pivotal role of financial advice

The starting point of our analytical framework is the vertical structure of the market (see Figure 2.1). As is well known, financial advisors play a very important role in these markets. As indicated by the arrows with label C, life insurance companies sell some of their products directly to consumers but a large share (on average about 60%) of total sales is channelled through financial intermediaries acting as agents for consumers (the various types of advisors will be discussed in chapter 3).

Figure 2.1   Vertical structure of the market
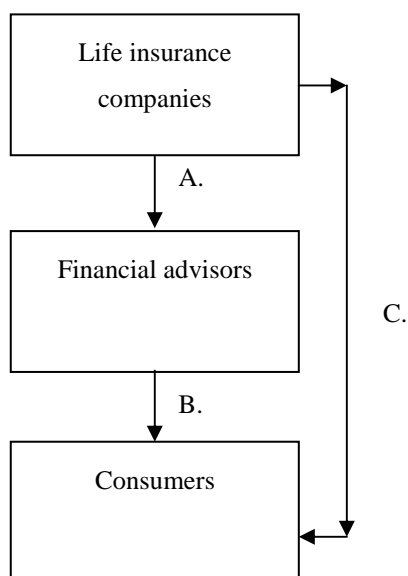
This vertical market structure has clear implications for our research strategy. For an overall assessment of competition in the market, it will not be enough to analyse the market in which insurers sell directly or indirectly to consumers (indicated by A. and C. in figure 1). Even if these markets would function properly, this may still not lead to acceptable market outcome from a consumer perspective if financial advisors do not compete (or compete on the wrong product dimensions) in the consumer market (depicted by B. Figure 2.1).

This suggests that in assessing the level of competition in the market for life insurance, we should distinguish between traditional supply side factors that affect competition between life insurance companies on the one hand, and factors that affect competition from the demand side on the other. Therefore, we start with an overview of determinants of competition on the supply side (section 2.2), and then move on to determinants of competition on the demand side (2.3).

2.3   Determinants of competition: structure & conduct of life insurance firms

In order to assess the functioning of markets for life insurance and annuities, we will apply the diagnostic framework developed in CPB (2003). That framework can be used to assess empirically whether a given market structure constitutes a tight oligopoly. A tight oligopoly is defined as follows

A tight oligopoly is an oligopoly of which the market characteristics facilitate the realisation of supranormal profits for a substantial period of time.

'Supranormal profits' refers to a profit level that exceeds a 'fair' rate of return on capital invested. A 'fair' rate of return is a profit level that is market conform relative to the firm's risk profile. The term 'facilitate' indicates that firms do not necessarily gain supranormal profits, but that it is easier due to the market characteristics. It is 'easier' in the statistical sense, i.e., the probability that one observes welfare reducing actions in a tight oligopoly is higher than on a more competitive market.[1] Finally, 'substantial period of time' is an important addition. We are interested in oligopolies in which the market structure, without government intervention, will be stable for a number of years.

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[1] We stress that welfare reducing actions are not intrinsic to all tight oligopolies. A tight oligopoly refers to structural characteristics of the market and therefore only to the feasibility of welfare reducing behaviour. In other words, there may exist tight oligopolies in which competition is fierce. Thus, if we would conclude that the markets for life insurance have characteristics that warrant the label tight oligopoly, this does not in itself imply limited competition. Nevertheless, if these markets qualify as tight oligopolies, then it becomes relevant to assess structural remedies that reduce the probability of anticompetitive behaviour - in other words actions that make these oligopolies less tight (e.g. reducing entry barriers).

Economic theory suggests factors that raise the probability that we are dealing with a tight oligopoly. These factors are summarised in Table 2.1. The table draws a distinction between coordinated effects on the one hand, and unilateral effects on the other hand. Coordinated effects refer to both explicit and tacit collusion, while unilateral effects refer to actions undertaken by individual firms without any form of coordination with other firms.

Table 2.1 Determinants of competition: supply side factors[a]

Relevance	Coordinated effects	Unilateral effects
Essential	High entry barriers	High entry barriers
	Few firms	Few firms
	Frequent interaction	Heterogeneous products
Important	Transparency	

[a] Source: CPB (2003), p. 34 (except adverse selection).

High entry barriers

It is intuitively clear (and supported by economic theory) that a high degree of concentration combined with high entry barriers is conducive to the realisation of supranormal profits. Data on concentration and actual entry will be presented in chapter 3.

High entry barriers may derive from several sources. First, efficient risk management requires scale and scope. This follows immediately from the basic idea behind insurance, which is risk pooling. Risk pooling requires a sufficiently large customer base with uncorrelated risks. Furthermore, as was pointed out in the introduction, since the mortality risks influence the value of annuities and life insurance in opposite ways (a higher than expected life expectancy leads to profits on life insurance and losses on annuities and vice versa), offering both products enables the firm to reap economies of scope in risk management.[2] Empirical research finds that economies of scale are important in life insurance. Chapter 4 will summarise the literature and present new estimates for the Netherlands.

Second, entry barriers may derive from reputation effects. Purchasers of life insurers may be willing to pay more (or receive less) if the firm has a proven reputation. This may make it more difficult for new firms to enter the market. The German experience with the so-called Riester pension (a tax-favoured supplementary pension) indicates that such reputation effects can be important.

[2] If re-insurance is cheap and easily available, scale and scope become less important. However as long as the insurance company retains some risk, scale and scope effects will play some role.

One reason for the low take-up of the Riester pension was that consumers questioned the viability of the life insurance companies that were selling the relevant policies (Casey 2004, p. 7).[3]

The importance of reputation, and hence its effect on entry, may be lessened through insurance guarantee schemes that protect the policy holder against bankruptcy of their insurer see chapter 3).

Differences in regulation across countries are a third possible source of entry barriers. Although within the EU important steps have been taken to harmonise insurance regulation, representatives of insurance companies within the EU still complain about large differences in regulation (CEA 2004). These differences may apply to various types of regulation (Davis 2002, p. 20-21):

- Balance sheet regulation which stipulate which assets (and in what proportion) life insurers should hold.
- Mandatory use of standardised mortality tables (e.g. in Belgium).
- Mandatory adoption of prudent assumption about rates of return on assets.

Some regulators have gone further, and put limits on the type of products that can be sold. Also, some countries have adopted regulations that limit the guaranteed returns that insurers may offer on annuities (Davis, 2002, p. 20). This limits the scope for exploitation of uninformed consumers. For example, in the US, the interest rate assumed by salesmen in advising customers on variable annuities is not permitted to be over 5% per year, thus seeking to limit aggressive sales tactics by salesmen promising high returns. Recent research on business services (excluding financial services) has shown that differences in regulation constitute an important barrier to international trade and foreign direct investment (CPB 2004). This may also be the case for life insurance. One possible route towards harmonisation that has been implied in the recent directive in trade in service is the so-called home-country principle, which stipulates that firms only have to comply with regulation in the country where they are incorporated (CPB 2004). However, in the case of life insurance, the EU-insurance directives stipulate that the law of the country of commitment applies (CEA 2004). Given the important interactions between private life insurance and annuities and public pensions, it seems unlikely that this will change. Nevertheless, Member State legislation could be made more transparent e.g. by putting it on a simple and immediately accessible internet site (CEA 2004).

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[3] However, the UK experience suggests that reputation provides no guarantee for financial soundness. The Equitable Life crisis was one of the oldest firm in the market (established in 1762) with an excellent reputation. As a result, its failure resulted in a general loss of confidence in annuities – and also in life insurance companies who are largely responsible for running personal pensions (Casey, 2004, p. 7).

Transparency and frequent interaction

Transparency and frequent interaction are conducive to a tight oligopoly since they make it easier for firms to coordinate their actions and to detect and punish deviations from the (explicitly or tacitly) agreed upon behaviour. Under EU-competition law, several forms of cooperation between (life-) insurance firms are allowed on efficiency grounds, even if such forms of cooperation would normally be considered undesirable because they would entail a risk of anticompetitive behaviour. In order to allow such efficiency-increasing cooperation, insurance companies are partially exempted from article 81 of the EC-Treaty (the article that deals with anti-competitive cooperative behaviour of firms). The exemption is laid down in directive no 1534/91 and block exemption no 358/2003. The block exemption allows insurance firms inter alia to cooperate on:

- The establishment of common risk premium tariffs based on collectively ascertained statistics or the number of claims,
- The establishment of common standard policy conditions,
- The common coverage of certain types of risks,
- The settlement of claims,
- The testing and acceptance of security devices.

These exemptions are motivated on the grounds that they make it possible to improve the knowledge of risks and facilitates the rating of risks for individual companies. This can in turn facilitate market entry and thus benefit consumers. Nevertheless, this exchange of information on costs, mortality and premium calculations also facilitates communication among firms with less noble (i.e. anti-competitive) intentions. That this is not a purely theoretical possibility is shown by a case brought by the Italian competition authorities in 2000, involving Italian car insurers. In this case, information exchange went much further than needed for the tasks envisaged in the EU-directives. The Italian competition authorities concluded that the aim had been to establish a cartel, and imposed a fine on the companies involved of EUR 50 million (NMa, 2003, p. 51).

Heterogeneous products

With differentiated products, consumers are less likely to switch to another firm in response to differences in price. Therefore, if products of different firms are hard to compare, it is easier for an individual firm to raise its price independently of competitors. Life insurance products may differ in many dimensions, including:

- Duration of the contract
- The underlying investment portfolio
- Coinsurance rate of partner (in case of annuities)

- With or without a bequest element (in case of annuities)
- Cost of early termination of contract, including the amount of frontloading of costs
- Financial soundness of the insurance company
- Annuity or lump-sum (in case of private pensions)
- Constant or inflation-linked policies (in case of annuities)

This plethora of options makes it hard for consumers to determine what is the right product for them, and explains the large role of financial advisors. Nevertheless, some of the products traded in these markets are highly standardised. An example is the single premium direct annuity. For such a simple product, the market is quite transparent and the available evidence (e.g. Mitchell et al. (1999)) suggests that in these cases the market usually functions quite well. However, a large segment of the market consists of differentiated products. For example, consumers opting for a unit-linked or with-profit product will find it much harder to compare products because of the differences in the risk of the underlying assets or in the performance of the fund managers. In these cases, product heterogeneity may facilitate unilateral departures from competitive prices.

2.4   Determinants of competition: consumer search and switching behaviour

Whether firms are able to realise supranormal profits for a substantial period of time by unilaterally raising prices depends on the firm-level elasticity of demand. If demand at the firm level responds only weakly to a change in the firms' price (assuming other firms keep their prices constant), then it will not be very attractive for an individual firm to raise prices. If, on the other hand, the demand response to such a unilateral increase in price is large, then firms may find it attractive to raise prices above competitive levels.

Prominent causes of a low firm-level elasticity of demand include high search and/or switching costs. The fact that many consumers use intermediaries to compare and select the appropriate product for them suggests that search costs are indeed substantial. Furthermore, switching costs in life insurance are often high. One important reason is that life insurance firms allocate most of the costs to the early years after the start of the policy (so-called front-loading). As a result the policyholder accumulates fewer funds during these early years compared to later years. This leads to lock-in of existing consumers. It is not obvious that this is to the detriment of consumers. Hendel and Lizzeri (2003) show that frontloading may even benefit consumers. They show that in the US, contracts that are more frontloaded have lower present value of premiums for the same insured capital. This is explained by the lower likelihood of early termination (which is made more costly by frontloading) and by the fact that frontloaded contracts retain better risk pools (from the perspective of the insurance firm). Without frontloading, people would want to modify or terminate their contracts if they discover that their health is above average, and this would force insurance companies to raise premiums ex

ante. This possible advantage of frontloading must be set against the disadvantages in the form of high termination and switching costs.

Fundamental errors in decision making

Imperfections in decision making by consumers may also take on more fundamental forms. If consumers are prone to cognitive errors in planning for the future, over-insurance or underinsurance may result. The text box below discusses these possibilities in some detail. These possibilities, although they may have severe welfare implications, do not classify as barriers to competition except to the extent that people fail to shop around for better deals. For this reason, we will not analyse these cognitive limitations (or their policy implications) in this report.

2.5   Determinants of competition: financial advice

According to a recent survey by Forrester Research (a consultancy), "..53% of European consumers use financial advisors. But most of them believe that they don't pay for that advice and aren't willing to pay for it. Hidden product commissions lie at the heart of the advice industry's problems." [4]

This citation includes three factual statements:

1. Many consumers feel they need advise in order to choose the right financial products.
2. Many consumers do not know how advisors are being paid. As a result, they fail to appreciate the possibility that advisors may give self-serving advice (commission bias).
3. Advisors often have strong incentives to provide biased advice.

Survey evidence also indicates that people hardly shop around for the best deal. This would not be a problem if financial advisors did the shopping-around for them. However facts 2. and 3. suggest that this might often not be the case. As a result, consumers may not end up with the product that offers the best value for money. Moreover, if customers and their financial advisors fail to shop around, this leads to an uncompetitive market.

    This state of affairs – where many consumers feel they need a financial advisor - may change under influence of the internet. If the internet makes it easier for customers to shop around, then the problems of biased advice and a lack of competitive pressure may be alleviated. Indeed, Brown and Goolsbee (2002) find that Internet comparison shopping sites led to lower prices for term life insurance in the USA. Using micro data on individual policies, they

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[4] http://www.forrester.com/Research/Document/Excerpt/0,7211,35259,00.html

find that in the period 1992-97 "..the growth of the Internet has reduced term life prices by 8-15 percent." (p. 481).

Errors in decision making in life insurance

In addition to search costs and switching costs or imperfections in financial advice, there may be intrinsic limits to the ability of individuals to make the choices that maximise their long-term welfare. Such limits may cause people to underinsure, over-insure, or to choose the wrong insurance product. While such imperfections have potentially large adverse effects on welfare, they do not in general affect competition in markets for insurance.

Underinsurance

There is a considerable body of evidence suggesting that people tend to buy too little life insurance and annuities. For example, Bernheim et al, 1999, 2001 argue that too few families have life insurance, a conclusion which they base on the large decline in income suffered by families who lose a wage earner. Extremely risk-loving preferences are required to explain this as the outcome of rational decision making. Furthermore, although theory strongly suggests that annuities ought to play an important role in the portfolios of elderly households, this is not the case in practice. In the words of Brown (2004): " If ever there were a prediction of economic theory that was blatantly violated by the empirical evidence, it is that of full annuitisation. Indeed, outside of Social Security and traditional defined benefit pension plans, very few assets in the United States are converted into life annuities."

Overinsurance

The bias in consumer choice does not only go in the direction of too little coverage but also in the direction of too much coverage. Indeed it has been argued that many of the elderly seem to have too much life insurance (Cutler and Zeckhauser, 1999).

Other errors in product choice

Money illusion: In the UK-context (where inflation indexed annuities are available) it has been argued that there is money illusion: individuals prefer nominal-fixed (level) annuities given the higher initial income, whereas inflation protected (index linked) would give better protection over the long term.

Mortality drag: often individuals delay purchase of an annuity, although such a strategy is vulnerable to "mortality drag": some annuitants will die earlier than expected, receiving less than their fund value. In effect, their remaining funds are then used by the provider to cross-subsidise those who survive longer. By delaying the purchase of an annuity, an investor will not benefit from this cross-subsidy.

Failure to buy impaired annuities: Impaired life annuities are life annuities for people with below average life expectancies, which offer a higher income per euro invested. In the UK it has been found that very few individuals buy impaired life annuities, although 40% were eligible (due to health conditions, smoking history etc.).

The overall impression is that consumers are not fully rational in their purchase or non-purchase of life insurance products. Although this may be true for many other markets as well, the consequences of this seem more serious in financial markets such as life insurance where errors have large effects on income, learning is limited due to long time lags, an choices are hard to reverse due to lock in.

Still, it is a distinct possibility that many customers will continue to depend on financial advisors. Therefore, the quality of advice, and in particular the possibility of biased advice, remains an important topic. In sections 7.3 and 7.4 we summarise the evidence on commission bias. Section 7.5. looks at the experiences with regulating advice in the UK, the country that has been at the forefront of this type of regulation. But first we ask whether commission bias is always a bad thing.

Is commission bias necessarily a bad thing?

One may ask whether commission bias is always a bad thing. Recent theoretical research has shown that under certain circumstances the answer may be negative (Bentz, 2001). Borrowing ideas from the economics of advertising, he points out that insurance companies that offer higher commission rates may be signalling that their products are of better quality than those of the competition. He also shows that this will only work if, after having purchased the product, purchasers find out the true quality of the product. It is questionable whether this condition in fulfilled in the case of life insurance products, e.g. because of the long time lag between purchase and payout. Reputation may not always work either, since firms that have a good reputation now may perform much worse one or two decades into the future (witness again the Equitable Life episode in the UK). Thus, theory suggests that commission bias might be a problem, especially for these types of financial products.

Evidence on commission bias I: UK private pensions

The experience surrounding the large-scale introduction of private pensions in the UK provides a much-discussed case of bad financial advice with disastrous consequences (see CPB, 2000, p. 137-8). The story starts in 1988, when the government made it possible for workers to opt-out of their occupational pension scheme. By 1995, some 5 million workers had indeed opted out. As it turned out, many of these workers were badly informed by financial advisers and as a result made severe errors in their pensions savings. According to Davis (2004), "500,000 individuals were persuaded by commission-driven salesmen to leave occupational funds, of whom 90% received inappropriate advice (owing to high transfer costs and no employer contribution). The response has been massive fines on insurance companies and tightening of regulations on selling. This issue continues to affect confidence in personal pensions, compounded by comparable concerns over misselling of endowment insurance policies to back mortgage loans for house purchase." (Davis, 2004, p. 16) In 1997, the government started a large-scale program aimed at compensating the victims. Estimates of the costs of this programme amount to 5-25 billion pounds.

Evidence on commission bias II: studies using micro-data

What do we know empirically about the importance of commission bias, apart from the UK experience with private pensions? Unfortunately, the amount of empirical research on this issue is very limited. To our knowledge, there are only two studies that assess the presence of commission bias empirically.

The first study is an empirical analysis of commission bias in the UK by Charles River Associates (CRA), for the UK Financial Services Authority (2002). CRA present two types of evidence. The first consists of an econometric analysis of the relationship between market share and the level of commission. Here the hypothesis to be tested is that higher commissions lead to higher market share. This would be interpreted as evidence in favour of commission bias. The results of this analysis indicate that for most financial products (20 out of 24), the null hypothesis of no relationship was not rejected. However, for two important products, pension annuities and unit-linked endowments (a kind of life insurance to pay-off the mortgage), clear statistical evidence of commission bias was detected. In the case of annuities, the effect was quite small, with a 10% increase in commission rates (say from 5% to 5.5%) relative to competitors' rates leading to a 6% increase in market share (say from 10% to 10.6%). However, in the case of unit-linked endowments, the corresponding effect was much larger: in this case a 10% increase in commissions is predicted to result in a 4.5% larger share of the market for these products. These results, although interesting, still leave unanswered the question whether commission bias is really to the detriment of consumers.

The second type of evidence presented by CRA consists of a 'mystery shopping' exercise. 'Shoppers' were sent to 250 financial advisors with instructions to get advice on either a lump sum inheritance to invest, or a private pension scheme. This yielded 179 complete observations (the remaining 61 could not be completed 'in a timely fashion')

 Advisors included both tied advisors (with financial ties to one company) and independent financial advisers (IFAs). The advice received was then compared to what would constitute the best advice (according to a group of advisors consulted by the researchers). In the first case (an inheritance to invest) these advisors agreed that an ISA (a tax-favoured individual saving account) plus cash savings account would be optimal, in the second case (pension) the advisers agreed that a stakeholder pension would be optimal (see section 6 for a description of stakeholder pensions). The outcomes of the mystery shopping exercise showed that in the case of the inheritance to invest, 1 in 5 advisers failed to recommend the right product. Surprisingly, the wrong advice came predominantly from IFAs, not from tied advisers. In 9 out of 72 cases, the researchers concluded that wrong advice was given. In these cases, the products that were recommended on average carried much higher commissions (6.5% instead of 2.8%). Although no statistical test is performed, this suggests commission bias. However, no relationship was found between provider choice and the level commission.

Turning to the pension case, again the tied advisors performed better than the IFA, with the former in over half of all cases advising a stakeholder pension and the latter in less than a 25%

of all cases. In only 5 out of 95 cases the wrong advice may have been due to commission bias, as in the remaining cases the level of commission for the two types of products was almost the same.

The second empirical study on commission bias looked at advice for mortgages in The Netherlands (Bruggert et al., 2004). This study uses data from a survey among 418 households who had recently taken out a mortgage. Of these 418 households, 241 consulted an advisor while the remaining 177 took the mortgage directly from their bank or other mortgage provider. The main finding of the study is that households who consult an advisor tend to purchase more frequently a complex type of mortgage, in particular equity-based mortgages (with these mortgages, monthly premiums are invested in equity funds; there is no guaranteed capital). The difference is large: 36% of those who consult one or more advisors had purchased an equity based mortgage, compared to only 17% of those who did not consult an advisor. Those who did not consult a advisor tended to buy much more frequently mortgages without redemption (29% compared to 18%). Commission rates on mortgages without redemption were much lower than on mortgages with redemption (0.5-1% compared to 2%).

In the next step of their analysis, the researchers assessed whether respondent had obtained the lowest interest rate available in the market (given their product choice). They assess this separately for the group that did use one or more advisors and the group that did not use any advice. The standard errors from this exercise imply that they cannot reject the null hypothesis that both groups received the lowest interest rate available.

They also looked at the fit between the type of mortgage the household "should" have taken (on the basis of stated preference) and the actual mortgage type chosen. This is achieved by feeding answers of respondent about the desired product type into a internet-site that gives financial advice. They find that there is no difference in fit between those who do and those who do not consult a financial advisor. However, after removing five cases from their dataset in which a worse fit goes hand in hand with a lower interest rate, they do find that those who used an advisor pay on average significantly higher interest rates.

2.6   Possible drawbacks of competition

Competition does not only have beneficial effects. One reason is that competition forces firms to focus on measurable product attributes. If products have attributes that are hard to measure or difficult to understand for (many) consumers then these attributes may be neglected as a consequence of competition. In this respect, in the case of life insurance the most relevant adverse effect is that too much competition may induce firms to adopt less prudent standards of behaviour (Davis, 2002, p. 29). This could take several forms:

- Assuming relatively high (for annuities) or low (for life insurance) mortality risk
- Investing in riskier assets
- Assuming higher rates of return on assets

Because of the long time lag between purchase of these financial products and pay-out, the consequences of such prudential slackening will in all likelihood be detected when it is too late. In order to prevent this scenario from becoming reality, the behaviour of life insurance firms is regulated in various manners (see chapter 3).

2.7   Conclusions

In order to analyse competition in markets for life insurance, it is useful to draw a distinction between life insurance firms on the one hand and the market for financial advice on the other hand. It is also a good idea to devote special attention to search and switching behaviour of consumers since these are likely to be important determinants of competition in these markets.

With respect to the structure and conduct of life insurance firms the discussion in this chapter points to the important role of entry barriers and market concentration, transparency and frequency of interaction, and the heterogeneity of products. These factors will be analysed in detail in the two chapters that follow.

Turning to consumers of life insurance products, the literature has pointed to various sources of search and switching costs. As a result, consumers exert only limited competitive pressure on life insurance firms. Many consumers may also face cognitive barriers to making decisions on the optimal amount and mix of life insurance. Competition will probably not eliminate these barriers so this calls for a policy response different from stimulating competition. In this report, we do not pursue this important issue further.

In the area of financial advice the literature points to the difficulty of aligning the interests of advisors and customers, the so-called principal – agent problem. This misalignment of incentives may give rise to commission bias, i.e. financial advice that maximises the income of advisors but that is not in the best interest of customer. The limited empirical literature on this issue indicates that commission bias is a real possibility.

Too much competition in markets for life insurance may force firms to adopt less prudent standards of behaviour. This explains the important role of prudential supervision in these markets.

3 The life insurance market in the Netherlands

3.1 Introduction

As a background for the following chapters, this chapter presents a brief overview of the Dutch market for life insurance. Section 3.2 describes the types of products that are sold by life insurance companies. Section 3.3 looks at the size of the market and at developments over time. Section 3.4 presents figures on profitability of life insurance firms, a rough and ready measure of competition. Section 3.5 describes the market structure of life insurance. Section 6 discusses the role of financial intermediaries in life insurance. Life insurance is subject to various types of regulation. In recent years there have been important changes in regulation. This is the subject of section 3.6. Section 3.7 concludes.

3.2 What is life insurance?

In order to protect the standard of living of their relatives, people may insure against early death. This is perhaps the most obvious definition of life insurance. However, life insurance firms also sell many different products besides classical life insurance. Many of these products include a savings element in addition to insurance. For example, life insurance related to mortgages - a very important part of the market - often consists of an insurance component that pays out in case the mortgager would die before maturity of the loan, and a savings component that accumulates a sum of money to be used for redeeming the mortgage either fully or partly. More generally, life insurance products can be classified along the following dimensions:

- *Individual versus group insurance*
  Individual life insurance offers cover for one individual person and his or her family members. Group insurance consists mostly of pensions for a group of employees and are usually taken out by employers without pension funds. Life insurance companies are the main players in the market for individual pensions and also play an important role in group pensions for certain industries or professions. Moreover, some pension funds have reinsured their risks through a life insurance company.

- *Unit linked versus fixed sum*
  With a fixed sum, an insured person receives a fixed predetermined amount of money at the end of a specified term. This sum is sometimes supplemented with profit sharing. In the case of a unit-linked insurance policy the risk rests with the policyholder. In 2003 33% of all new policies were unit linked and 67% were fixed sum. Measured by the amount of insured capital in 2003 unit linked contracts accounted for 41% and fixed sum for 59% of new policies.[5]

[5] Dutch Central Bureau of Statistics (CBS).

- *A once-only payment of the premium (so-called single premium insurance policy) versus periodic payment of premium*

  With single-premium life insurance, the policyholder pays a premium only once. With periodic payment, premiums are usually paid annually for a fixed number of years.

- *Risk versus saving insurance*

  Risk insurance covers the risk of 'living too short' and provides relatives with an income in case of death of the insured. Saving insurance covers the risks of 'living too long' and guarantee a fixed capital or an annuity upon reaching a certain age, for example an old-age pension.

- *Capital insurance versus annuity insurance*

  As just indicated, within the class of saving insurance a further distinction may be drawn between capital insurance, in which case the policyholder or his beneficiaries receive a fixed capital payment at the end of a term, and annuity insurance, in which case the insurer receives a recurrent allowance.[6] Annuity insurance can be started immediately or can be deferred, which means that the policyholder will get a payment after a pre-arranged number of years usually when reaching the pension age. A special type of a capital insurance is a life insurance linked to mortgages. Another type of capital insurance is the lifetime death insurance, which pays out in case of death of a policyholder. In 2002, 32.3% of all households had one of more life insurance policies linked to a mortgage and 23.2% had one or more life insurance policies for pension build-up (in 1996, these percentages were 26.8 and 13.9%).[7]

Table 3.1 presents a breakdown of total premium income along the first three dimensions mentioned above

Table 3.1   Premium income of life insurance companies for own account in 2002

	Fixed sum	Unit linked	Total
	mln euro		
Total Periodic payment of premium	5,708	6,563	12,271
Individual	3,990	4,872	8,862
Group	1,718	1,691	3,409
Total Single premium	7,555	3,090	10,645
Individual	6,591	1,533	8,125
Group	964	1,557	2,521
Total direct business	13,263	9,653	22,917

Source: CBS.

[6] This periodical payment usually ends at the moment the insured person passes away.

[7] Dutch association of insurers (Verbond van Verzekeraars), 'Verzekerd van Cijfers 2004', 2004.
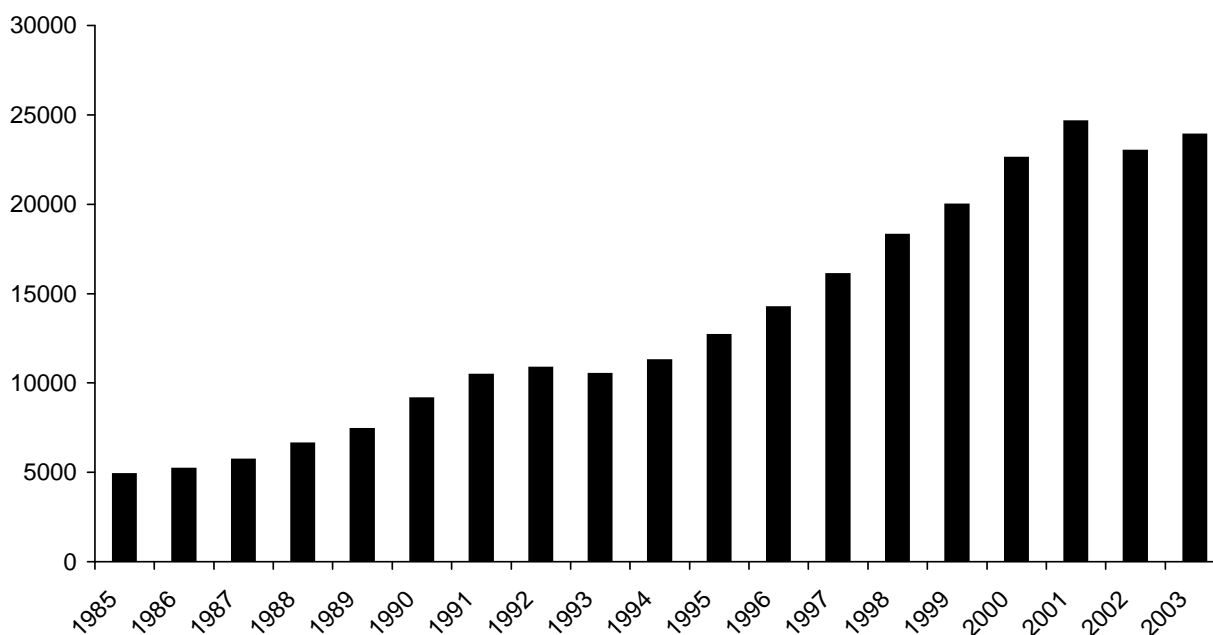
3.3   Size of the market

Life insurance is a *very* large industry. In 2003 total annual premium income for own account[8] of Dutch life insurance firms was about 24 bln euro, or approximately 5% of GDP.[9] Over the past two decades, total premium income has increased very rapidly (see Figure 3.1).

The growth of premium income in the early 1990s was influenced by changes in tax policy. The major tax reforms affecting life insurance will be discussed in paragraph 3.7. For now we note the development of single- premium insurance policies in 1990 and 1991, just prior to the tax reform called 'Brede Herwaardering'. The production of single-premium insurance showed strong growth anticipating the introduction of the 'Brede Herwaardering', while production fell in 1992.

In the late nineties, the volume of new insurances declined (see Figure 3.2). The tax revision of 2001, the reduction of fiscal facilities concerning the special saving possibilities (*spaarloon*) and the recent abolition of the standard tax deduction for life insurance premiums played a role here, but also the economic downswing and the decreasing returns on shares have contributed to the decline.

Figure 3.1   Premium income for own account (mln euro)

Source: DNB/PVK and Assurantiemagazine Yearbook 2000-2004.

[8] In 2002, the total reinsurance premiums amounted 912 million euro.
[9] AM Yearbook 2004. Excluding premium for reinsurance.

Size of the market in international perspective

The gross premium per capita in the Netherlands, that is an indicator of the turnover of the life insurance companies, is substantial but not among the highest in Europe as is shown in table @. Denmark, Ireland and the United Kingdom have a higher average life insurance premium per capita, ranging from 1652 euro per capita to 2837 euro per capita. The turnover of the life insurance companies can better be compared to France. Belgium, Italy and Spain have lower production levels per capita. These differences are the result of different types of pension systems within Europe. The population in some countries is more dependent on life insurance products for their pension schemes than in other countries. Furthermore, different fiscal systems also explain the variation in production between the different countries.

Premium per capita

	Premiums Life Insurance (2003)	Average Life Premium per capita (2004)
	mln euro	euro
Belgium	18,138	1,390
Denmark	9,678	1,652
France	93,100	1,434
Germany	68,600	788
Ireland	7,978	1,845
Italy	62,261	797
The Netherlands	24,300	1,484
Norway	5,227	1,178
Spain	17,675	654
United Kingdom	132,431	2,837

Source: CEA , 2004.

Figure 3.2   Number of on new life insurance policies, (x1000)
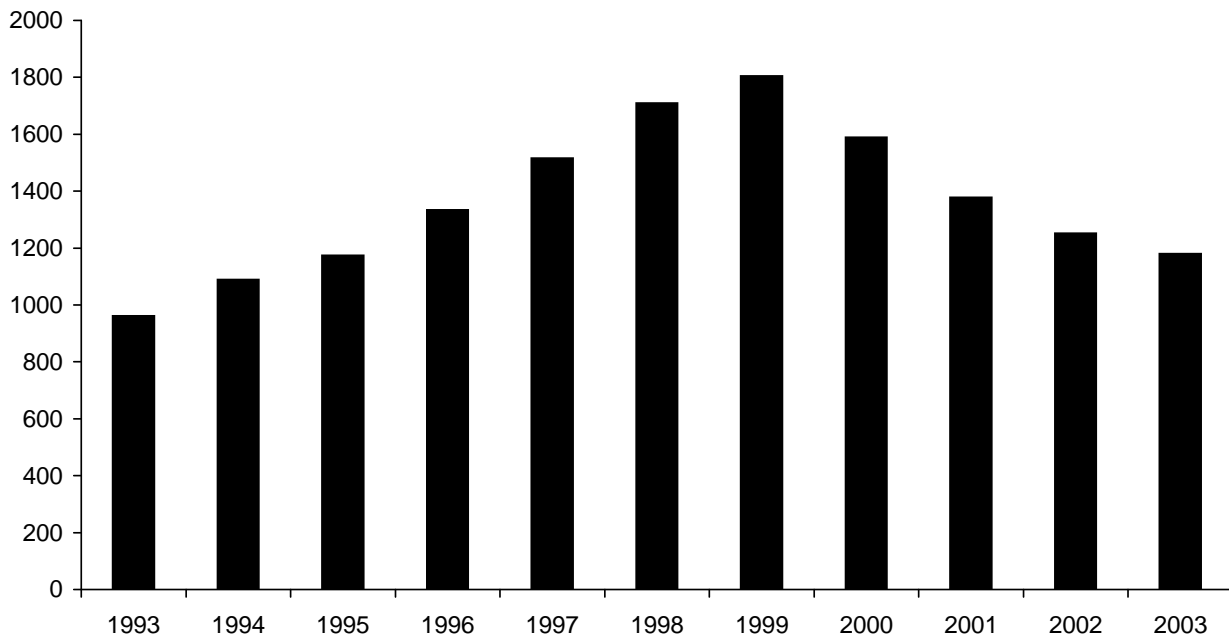
Source: CBS.

3.4 Market Structure

Judging from the number of firms that are active in life insurance in the Netherlands, the market is not very concentrated. In 2003 87 life insurance companies were under supervision of the Dutch Central Bank (DNB, the Dutch supervisory authority on insurance companies). Of these companies, 84 had their statutory seats in the Netherlands.

Table 3.2 Admitted life insurers in the Netherlands

	1980	1985	1990	1995	2000	2003
With license	67	69	89	96	101	87
Statutory seat in the Netherlands	55	59	79	92	98	84
Sub-office in the Netherlands	12	10	10	4	3	3
By notification	.	.	.	77	153	160
Total	67	69	89	173	254	247

Source: DNB.

Table 3.3 Market shares life insurance firms (as a percentage of premium income)

	1996	1997	1998	1999	2000	2001	2002
ING	25.6	25.5	24.4	23.1	24.1	22.4	21.5
Aegon	12.8	12.5	12.3	15.2	13.1	13.3	15.3
Fortis [a]	6.6	6.9	8.6	6.7	6.0	13.3	13.3
ASR [b]	4.7	5.0	5.7	4.2	5.9	.	.
Aviva (Delta Lloyd)	8.2	8.8	9.0	10.2	10.4	10.0	10.8
Rabo-Interpolis	6.6	7.6	7.8	8.0	8.5	8.2	7.5
Achmea	8.1	7.4	6.9	9.6	7.1	7.2	7.6
SNS reaal	4.9	5.0	4.7	3.7	4.8	4.8	6.1
Zwitserleven (Swiss Life)	4.4	4.4	3.7	4.7	4.3	4.7	4.3
AXA [c]	2.0	1.7	3.6	2.3	2.9	2.5	2.5
Allianz	.	.	.	.	.	1.6	1.8
Rest	16.1	15.2	13.3	12.3	12.9	12.0	9.3
C4	54.7	54.4	54.3	58.1	56.1	59.0	60.9
C6	67.9	68.7	69.0	72.8	69.2	74.4	76.0
C8	77.5	78.7	79.4	81.7	79.9	83.9	86.4
C10	84.8	84.8	86.7	87.7	87.1	88.0	90.7
HHI [d]	1129	1079	1103	1146	1115	1153	1256

[a] From 2001, incl. ASR.
[b] Until 2000.
[c] In 1996 and 1997 still UAP.
[d] Herfindahl-Hirschman Index.

Source: AssurantiemagazineYearbook.

However, if we look at market shares we find that the market is much more concentrated. This is because the very uneven size distribution of life insurance firms. Table 3.3 presents an overview of the market shares of the ten largest life insurance companies (based on gross premium income).

Clearly, the market for life insurances is dominated by a few large conglomerates. The top-ten players in table 4.3 are groups of several licensed insurance companies. These conglomerates have strengthened their market position in recent years. The ten largest conglomerates account for almost 91% of the total gross premium income in life insurance in 2002 (in 1996 the C10 amounted 85%). The four biggest players, ING, Aegon, Fortis and Delta Lloyd, had almost 61% of the market in 2002 (in 1996 the C4 amounted 55%). Although its market share fell somewhat since 1996, ING is by far the largest life insurer with a market share of 22%. Fortis has gained most market share since 1996, mainly as a result of the take-over of ASR in 2001.[10]

With an HHI-index of 1226 in 2002 and a C4 of 61%, the concentration rate on the life insurance market can be qualified as moderate. However, the degree of concentration in some submarkets is substantially higher. For example, for collective life insurance, the concentration is considerably higher than for individual insurances (C4 of 68.5 and 58.1 respectively, HHI of 1383 and 1089 respectively in 2001). ING and Aegon together own almost fifty percent of the collective life insurance market. On the individual life insurance market, Aegon's market share is much smaller.

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[10] Market shares of firms working by notification without a license in the Netherlands (not included in table 4.3) are very small.

International comparison: Number of firms and entrants

In the Netherlands, the number of firms operating in the life insurance market increased in the period between 1990 and 1999. As can be seen in the table below, this trend is not shared by other European countries. For instance, the life insurance markets in the UK and Germany have seen a decrease in the number of firms. In these markets the number of firms declined strongly due to mergers. Probably consolidation started later in the Netherlands. The number of entrants as percentage of the total number of firms is in the Netherlands is relatively high around 4%. Also in absolute numbers the Dutch life insurance market has a large entry compared to other European markets like for example in Germany and the UK.

Number of firms and entrants

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
UK										
Number of firms	205	202	196	194	191	174	177	177	176	Na
Number of entrants	9	4	3	4	2	6	2	2	Na	Na
Entrants %	4.4	2.0	1.5	2.1	1.0	3.4	1.1	1.1	Na	Na
Germany										
Number of firms	338	342	326	327	319	323	320	319	318	314
Number of entrants	Na	Na	Na	3	3	7	5	4	4	5
Entrants %	Na	Na	Na	0.9	0.9	2.2	1.6	1.3	1.3	1.6
The Netherlands										
Number of firms	96	96	97	98	95	96	99	107	108	109
Number of entrants	0	4	2	5	5	3	6	9	3	4
Entrants %	0.0	4.2	2.1	5.1	5.3	3.1	6.1	8.4	2.8	3.7
Canada										
Number of firms	Na	Na	Na	Na	Na	Na	146	151	150	143
Number of entrants	Na	Na	Na	Na	Na	Na	3	5	1	1
Entrants %	Na	Na	Na	Na	Na	Na	2.1	3.3	0.7	0.7
Japan										
Number of firms	30	30	30	30	31	31	44	45	46	47
Number of entrants	0	0	0	0	1	0	13	1	1	2
Entrants %	0.0	0.0	0.0	0.0	3.2	0.0	29.5	2.2	2.2	4.3

Source: OECD, IMF, Group of Ten.

International comparison: degree of concentration

Concentration in the Dutch life insurance market is high compared to most other countries and comparable to Japan, Australia, and to a lesser extent France. Concentration ratios have declined during the nineties. The market share of the 5 largest firms fell by nearly 8 percentage points.

Concentration ratios for some industrialised countries (percentages)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Largest 1										
USA	.	.	9.7	9.5	8.9	8.7	8.1	8.0	7.5	.
Canada	.	.	.	.	.	17.9	18.9	18.6	18.5	18.6
Japan	21.1	20.8	20.8	20.8	20.9	21.1	21.2	22.2	22.6	.
Australia	32.4	33.0	28.3	28.9	26.6	27.2	25.9	32.7	27.9	.
France	12.8	15.0	15.6	18.0	17.8	18.4	19.8	19.7	22.0	20.0
Germany	12.1	11.7	11.8	12.3	12.4	12.3	12.2	12.2	13.4	13.2
The Netherlands	25.9	25.0	25.7	25.9	26.2	25.4	26.5	26.0	26.3	.
United Kingdom	13.0	12.1	13.6	13.3	14.6	13.0	15.2	13.4	13.2	.
Largest 5										
USA	.	.	28.2	27.5	26.0	25.3	25.7	25.5	25.2	.
Canada	.	.	.	.	.	65.6	68.4	70.6	73.1	73.3
Japan	63.9	63.6	63.8	63.8	64.1	64.2	63.7	65.1	53.7	.
Australia	73.5	70.9	65.8	64.1	61.5	60.0	58.3	61.6	60.0	.
France	48.2	48.9	51.3	49.2	48.5	49.6	53.9	53.2	58.4	56.0
Germany	29.9	29.1	29.4	29.6	29.5	29.5	29.1	28.9	29.9	29.4
The Netherlands	65.7	63.3	63.6	63.3	63.1	61.4	60.5	59.0	57.7	.
United Kingdom	36.3	35.3	34.2	38.1	35.9	34.7	35.6	34.8	38.6	.
Largest 10										
USA	.	.	40.2	39.6	38.3	38.4	39.8	39.7	39.4	.
Canada	.	.	.	.	.	82.8	86.1	80.0	82.0	82.1
Japan	85.4	85.1	84.9	84.6	84.8	84.8	83.7	85.0	73.6	.
Australia	87.1	85.0	81.5	80.6	78.4	76.2	76.3	76.9	76.3	.
France	68.3	68.8	75.5	69.7	68.9	69.7	73.4	75.5	80.2	79.0
Germany	43.9	42.5	43.4	43.6	43.5	44.3	43.9	43.6	45.5	43.8
The Netherlands	77.5	75.3	76.1	75.9	76.0	74.6	74.3	73.0	71.7	.
United Kingdom	50.5	50.5	49.5	53.5	51.3	49.1	52.1	51.1	58.0	.

Source: OECD, IMF, Group of Ten.

3.5 Profitability

As a prelude to the analysis of competition in the market for life insurance in the chapters that follow, this section looks at profitability. Profitability is a rough-and-ready measure of competition. However, there are several problems with using profitability figures as indicators for profits. First, accounting measures of profits depend heavily on accounting practices. Second and more specifically for life insurance, a large part of current profitability is

attributable to past sales of insurance policies (so-called embedded value).[11] Third, fluctuations in profitability are potentially heavily influenced by stock valuations (depending on whether or not fair value accounting rules have been adopted). As a result of these factors, current profitability only partly reflects the current degree of competition.

With these caveats in mind, we calculate the average profit margin as the ratio between profits before taxes and gross premium written. Using figures from the ISIS dataset, we compare the Netherlands with some major European economies (see Table 3.4).[12] Profit margins in the Netherlands amount to some 9% of premiums during 1995–2002.[13] This is relatively high compared to other countries like France, Germany, Italy and the UK, with profits of around 7%, 2%, 5% and 4% respectively. Measured Dutch profits may be biased upwards, because the ISIS dataset does not include many of the smaller insurance companies which may be less profitable. However, even if we use data published DNB, which includes all licensed firms, figures for the Netherlands are still high at around 7%.

Table 3.4   **Average profit margins of insurance firms in various countries (in %)[a]**

	ISIS[b]					DNB
	Germany	France	UK	Italy	The Netherlands	The Netherlands
1995	2.2	.	5.0	.	.	8.1
1996	2.3	12.9	4.2	.	10.2	8.1
1997	2.6	6.3	4.9	7.2	8.1	7.3
1998	2.9	5.6	5.1	5.3	10.0	6.6
1999	3.0	5.8	3.9	4.2	12.6	7.1
2000	2.0	6.9	3.1	6.1	12.0	7.3
2001	1.3	6.2	2.4	4.7	10.9	6.8
2002	1.3	2.1	1.0	2.8	2.2	3.2
2003	.	.	.	.	.	8.9

[a] Weighted averages.
[b] Sources: Own calculations based on ISIS (first five columns) and DNB (last column).

3.6   Distribution channels

Financial intermediaries play an important role in the distribution of life insurance policies. In 2002 53% of the life insurance policies was sold by intermediaries. About 25% of all life insurance policies is sold through *direct writing*.[14] This share is higher for non-life insurance, because non-life products are less complex and therefore consumers feel they need less advice

[11] This measure can be defined as $PCM = \sum_{i=1}^{n} s_i (p_i - mc_i)/p_i$ where p_i denotes the firm's equilibrium output price and mc_i its marginal cost and s_i is market share.

[12] The ISIS dataset will be described in Chapter 4.

[13] The fall in profit in 2002 is due to large losses on stock market. The fall is exacerbated by accounting practices which enabled insurers to postpone losses in previous years (profit smoothing).

[14] Source: Verzekerd van Cijfers 2004, Dutch insurance industry in figures. Other distribution channels that are distinguished are: distribution by bank insurance (12,1%), employers (1,8%) and other (7,9%).

for buying non-life products. The share of direct writers and banks in the total distribution of life insurances increased from 29,9 % in 1996 to 37,1% in 2002.

Table 3.5	Distribution channels as % of the total market			
	Life		Non-life	
	1996	2002	1996	2002
Intermediaries	58.0	53.2	54.3	49.0
Direct writing	20.6	25.0	25.4	30.3
Banks	9.3	12.1	12.9	12.7
Rest	12.0	9.7	7.4	8.0

Source: Dutch Association of Insurers (Verbond van Verzekeraars), 'Verzekerd van cijfers 2003', based on research of GFK / TOF.

Most intermediaries in the Netherlands are insurance brokers. Insurance brokers give advice to consumers when they purchase insurance policies. The broker acts as an intermediary between the consumer and the insurer with regard to the purchase of insurance. Brokers also provide services such as processing of claims and changes in the policy. In addition to brokers, there are also intermediaries that are tied to and work on behalf of a certain insurance company; these are called agents.

Brokers are paid on the basis of commission: the insurer pays the insurance broker a commission on the policy which the insurance broker sells to the consumer. The fee which the consumer pays for the services of the insurance broker is indirectly included in the insurance premium. The insurance broker therefore has a double role: he is both an advisor and a sales channel.

Unfortunately, data on the number of insurance brokers diverge considerably across different sources. Examples of public sources which can be consulted to obtain an overview of the number of active insurance brokers include the register of brokers under the Insurance Brokerage Business Act [*Wet assurantiebemiddelingsbedrijf*] maintained by the Socio-Economic Council, Dutch Central Bureau of Statistics (CBS), the registers of the Chambers of Commerce and research carried out by the Economic and Social Institute of the Vrije Universiteit (ESI-VU). On the basis of these sources, we conclude that there are at least 6500 active insurance brokers in the Netherlands. The introduction of the Financial Services Act in 2005 [*Wet financiële dienstverlening (Wfd)*] and the obligation arising from this law to obtain a licence from the Netherlands Authority for the Financial Markets (AFM) will probably provide a more precise estimate of the number of active brokers.

International Comparison of the use of distribution channels

In most of the countries listed in the table, banks are the main distribution channel for life insurance products. In Ireland, the United Kingdom and the Netherlands intermediaries (brokers and agents) are most important.

Distribution channels for life-insurance products (2002)

	Insurance companies employees	Agents and brokers	Other networks (banks, post offices)	Other
Belgium[a]	2.0	27.9	52.6	17.5
Spain	.	22.6	66.9	10.5
France	16.0	17.0	61.0	6.0
United kingdom	29.3	64.3	.	6.4
Ireland	19.5	78.5	.	2.5
Italy	8.9	20.5	70.6	.
The Netherlands	28.0	58.0	.	14.0

[a] 2001.

Source: CEA 2004.

3.7 Regulation and tax treatment

3.7.1 Two types of sector-specific regulation

The market for life insurance is subject to two types of sector-specific regulation. The first type is prudential regulation aimed at safeguarding the financial soundness of the sector. From a prudential point of view, very intense competition may be undesirable if this results in a reduction of the financial soundness of individual firms, which may be undesirable in this particular sector. The second type is the favourable tax treatment of life insurance products, which has a large effect on the demand for these products as well as on the degree to which life insurance products with a savings component are substitutes for (and thus compete with) non-life insurance savings products. Both types of regulation will briefly be described in what follows.

3.7.2 Prudential supervision

Prudential regulation is based on the Wet Toezicht Verzekeringswezen (WTV). This law stipulates solvency requirements in line with the relevant EU-directive. Member states may choose to impose stricter solvency requirements, but since 1995 within the EU the so-called single licence principle applies. According to this principle, an insurer is granted a licence in its home country for the entire European market and supervision is only carried out in the home country (home country control). The insurance company may enter the Dutch market with this licence obtained elsewhere and only needs to inform the DNB (former PVK) that activities are being conducted (notification procedure). Insurance companies from outside the EU must apply for a licence from the DNB.

If a life insurance firm becomes insolvent, then consumers are to some extent protected by so-called safety net regulation for life insurers. This safety net regulation stipulates that a life insurer which has become insolvent can be forced by the DNB to reinsure or hand over his portfolio to the so-called safety-net. Other life insurers are under a legal obligation to contribute to this fund to a maximum of 200 mln euro. Moreover, the maximum amount that can be used for safeguarding the customers of a single firm is 100 mln euro. The Dutch Central Bank has recently argued that these amounts should be increased (DNB 2005, p. 83).

3.7.3 Tax treatment of life insurance

Life insurance products traditionally receive favourable tax treatment in the form of deductibility of premiums paid from taxable income.[15] Since the early nineties, a number of steps have been made to limit this deductibility.

The tax reform called "Brede Herwaardering" (1992)

- Annuities

The 'Brede Herwaardering" limited the unconditional tax deduction of annuity premiums (and also single premium). Until 1991, it was possible to deduct life insurance premiums each year up to a fixed amount of 7 923 euro (Dfl. 17 459 in 1991) irrespective of the purpose of the capital build-up. With the 'Brede Herwaardering', this was reduced to 2 337 euro (Dfl. 5 150).[16] Larger deductions were available in case of pension shortage. If the built-up pension (including AOW) was less than 70% of their last wage after making use of the standard deduction, then extra deduction of annuity premiums were allowed.

Until 1992 premium deduction was possible without regard to the beneficiary party and the commencing date of the capital payments. For example before the 'Brede Herwaardering', this money could also be used for a cash allowance or as a gift to children. Since 1992, tax deduction is only allowed for a few specific purposes, for example a annuity till retirement in favour of the person who paid the premium.

- Capital insurance

Until 1992 the interest received on the capital built up on life insurance policies was free of tax provided at least 12 years annually premiums were paid, and provided that during the term the maximum annual premium and the minimum annual premium remained within a certain

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[15] In principle, the special tax treatment is limited to insurers who count the annuity insurance obligation to their domestic company capital. However, if premiums are paid to an insurance company that does not have its statutory seat or a branch-office in the Netherlands, then tax deduction is only available if the insurance company has accepted the obligation to provide information to the Dutch fiscal authorities and is also liable for unpaid taxes related to the insurance. Also immigrants who want to continue an annuity policy in their home country can apply for tax reduction.

[16] The amount is annually adjusted for the rate of inflation.

range.[17] This range was wider if the duration of the insurance was longer. Since 1992 the interest was only free from tax if the capital payment was not higher than EUR 23.598 (in 1992) after 15 years or EUR 103.466 (in 1992) after 20 years.[18]

The income tax reform of 2001

- Annuities

The reform of 2001 left the regime introduced with the Brede Herwaardering basically unchanged. However, the standard deduction for annuity premiums was reduced to EUR 1036 (annually adjusted for inflation). Supplementary deductions remain conditional on a pension shortfall. If the supplementary deduction has not been used within a certain year, it may be carried over to the 7 next years.

- Capital insurance

From 2001, tax exemption of interest on capital built up in life insurance is only allowed for capital insurance intended for redeeming the mortgage of an owner occupied house. Each taxpayer obtains a once-in-a-lifetime exemption of a maximum of EUR 125.500 (Dfl 276566 in 2001). The exemption is adjusted for inflation every year.

Further restriction of tax deduction of annuity premiums in 2003

Deduction for annuity or single-premium insurance is only tax-deductible if pension shortage can really be indicated. The standard deduction of euro 1069 for annuity premiums has been abolished in 2003.

3.8   Conclusions

Life insurance covers a large number of different products. Apart from offering insurance, many life insurance products also incorporate a savings element. This is also the case for the largest product (in terms of insured capital), life insurance intended to pay off the mortgage. Life insurance is a very large industry, accounting for roughly 5% of GDP. For the market as a whole, the degree of concentration can be classified as moderate. However, a very large share of sales takes place through financial intermediaries, mainly independent advisors (brokers).

Competition in the market for life insurance is influenced by two types of sector-specific regulation. The first type is prudential regulation aimed at safeguarding the financial soundness of the sector. From a prudential point of view, very intense competition may be undesirable if this results in a reduction of the financial soundness of the sector. The second type of regulation is the favourable tax treatment of life insurance products, which limits the degree to which life

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[17] In the case of a term of 12 year the range that was allowed was 1:5 (minimum premium: maximum premium). In the case of a term of 30 year the allowed range was 1:20.
[18] In both cases the allowed proportion between the minimum and maximum premium was 1:10.

insurance products with a savings component are substitutes for (and thus compete with) non-life insurance savings products.

Profitability is a rough-and-ready indicator of competition. According to this indicator, profits of Dutch life insurance firms have been relatively high compared to other countries. However, for a number of reasons profitability is not a good indicator of the current state of competition. Therefore, a complete picture of the intensity of competition in the market for life insurance will have to await the analysis in the chapters that follow.

4 Competition and efficiency in Dutch life insurance

4.1 Introduction

This chapter investigates competition in the Dutch life insurance market using three different empirical indicators. All three indicators are based on econometric analyses of the same dataset, described in the next section. The analysis in this chapter complements the descriptive analysis of market structure and profitability presented in chapter 3.

Our first two indicators look at efficiency. Competition forces firms to operate more efficiently, so that low efficiency indicates limited competition. We distinguish between two types of efficiency: scale efficiency and X-efficiency. Scale economies are related to output volumes, whereas X-efficiency reflects managerial ability to keep down production costs, after controlling for output volumes and input price levels. Large non-exhausted scale economies and low levels of X-efficiency raise questions about the competitive pressure in the market. The existence of scale efficiency is also important for the potential entry of new firms, an important determinant of competition. Strong scale effects would put new firms into an unfavourable position.

Our third measure of competition is the so-called Boone indicator. The Boone indicator makes use of the fact that an increase in competition rewards efficient firms relatively more than less efficient ones by increasing their performance in terms of market shares or profit.

As indicated in chapter 3, the life insurance industry consists of several submarkets. The degree of competition may vary across these submarkets. For instance, submarkets where parties bargain on collective contracts and submarkets for direct writers may be more competitive than submarkets where insurance agents sell products to uninformed but trusting customers. Unfortunately, a lack of sufficient data on prices of life insurance products, market shares of products and distribution channels, makes separate analyses of the various submarkets impossible. This has the following implication. If the analysis in this chapter would indicate that overall the level of competition is satisfactory by some standard, then there may still exist some submarkets with low intensity of competition and *vice versa*.

The chapter proceeds as follows. Section 4.2 gives an overview of the data by describing the life insurance industry. Section 1.3 measures scale economies, while the next section introduces the measurement of X-efficiency. Section 4.5 discusses the Boone indicator. The last section sums up and concludes.

4.2 Description of the data

The empirical analysis in the sections that follow is based on data of the former Pensions and Insurance Supervisory Authority of the Netherlands (PVK), which recently merged with the Dutch Central Bank (DNB). The data refer to Dutch life insurance companies over 1995–2003

and consists of 867 firm-year observations. In our dataset, the number of active companies in the Netherlands was 84 in 2003 and 105 in 1998. A number of insurance firms are owned by a holding company and, hence, not fully independent. The average size of a life insurance company in terms of total assets on its balance sheets is around € 2.5 billion. This firm has around half a million policies in its portfolio, insures a total endowment capital of 7 billion euro and current and future annual rents of almost 400 million euro. Profits are defined as technical results, so that profits arising from investments are included, and are taken before tax. Profits of an average firm amount to 5.5% of their premium income. An average firm uses five percent of its gross premiums for reinsurance. Roughly 63% of premiums are from individual contracts, the remainder is of a collective nature. More than half of the insurance firms have no collective contracts at all. Two-thirds of the contracts are based on periodic payments. Annual premiums reflect both old and new contracts. Because on average 48% of the premiums paid are of the lump sum type, whereas, on average, 15% of the periodic premiums refer also to new policies, the majority of the annual premiums stems from new business. Note that also cost and profit figures are based on a mixture of new and old business. Balance-sheet and profit and loss data for new policies only is not available. So called unit-linked fund policies, where policyholders bear the investment risk on their own deposits (that is, premiums minus costs), have become more popular: 44% of premiums are related to this kind of policies. Endowment insurance is the major product category, as 57% of all premiums are collected for this type of insurance. This type of insurance policy is often combined with a mortgage loan. The total costs are around 13% of the total premium income, half of which consists of acquisition (or sales) costs. The medians and the differences between weighted and unweighted averages reflect skewness in the size) distributions. Larger firms tend to have higher profit margins and relatively lower acquisition cost, lower management cost, less individual contracts, less periodic payments, more unit-linked funds policies and less endowment policies.

Table 4.1   Description of the data on Dutch insurance firms. 1995-2003

	Median	Mean weighted	unweighted	Standard deviation
		mln euro		
Total assets	521.5	.	2472.5	6991.6
Annual premiums	66.0	.	247.7	588.9
Annual costs, total	18.2	.	32.8	63.2
Annual profits	2.6	.	15.7	47.6
		number		
Number of policies	168.672		522.421	973.601
		mln euro		
Total endowment capital	2.229		7.376	13.483
Amount of annuity rent [a]	9		387	1.397
Total unit-linked capital	67		246	589
		ratios		
Profit / premiums	0.05	0.08	0.06	0.25
Reinsurance	0.01	0.03	0.05	0.11
Acquisition costs / total costs	0.53	0.34	0.53	1.86
Individual contracts	1.00	0.63	0.90	0.21
Periodic payments	0.72	0.52	0.67	0.27
Unit-linked funds	0.25	0.44	0.33	0.32
Endowment premium	0.93	0.57	0.82	0.26
Acquisition costs	0.09	0.06	0.16	0.29
Management costs	0.18	0.13	0.23	0.22

Number of firms per year	number
1995	94
1996	103
1997	104
1998	105
1999	101
2000	94
2001	93
2002	89
2003	84
Total	867

[a] Annual payment .

Source: see text.

4.3 Indicator I: Scale economies

The first indicator for competition that we analyse is the existence of unexhausted scale economies. In the present market, we expect that scale economies would reduce under heavy competition.[19] The existence of non-exhausted scale economies is an indication that the potential to reduce costs has not been employed fully and, therefore, can be seen as an indirect indicator of (lack of) competition. This is the first reason why we investigate scale economies in this chapter. A second one is that we will correct for (potential) distortion by possible scale economies in a subsequent analysis based on the Boone indicator. This correction can be carried out using the estimation results of this section.

We measure scale economies by estimating a translog cost function (TCF). In a translog cost function, costs are related to output and input factor prices. To ensure flexibility, quadratic terms and cross terms are added for these explanatory variables. Furthermore, some correction factors are added to correct for heterogeneity in products between firms. In our case, the costs of production are explained by output, the reinsurance ratio, the acquisition ratio and some correction factors like the individual premiums ratio, the periodic premium ratio, the unit-linked fund ratio and the endowment insurance ratio.

In the literature, measuring output in the life insurance industry is much debated. Where in many other industries, output is equal to the value added, we can not calculate this figure for insurances. [20] Most studies on the life insurance industry use premium income as output measure. Hirschhorn and Geehan (1977) view the production of contracts as the main activity of a life insurance company. Premiums collected directly concern the technical activity of an insurance company. The ability of an insurance company to market products, to select clients and to accept risks are reflected by premiums. However, premiums do not reflect financial activities properly, as e.g. asset management represented by the returns on investment is ignored.[21] Despite shortcomings, in this section we also use premium income as output measure.

From the estimations of the TCF we can derive both the marginal costs and the scale economies. Scale economies which are smaller than one, correspond to economies of scale, that is, a less than proportionate increase in cost when output levels are raised, whereas scale economies which are greater than one indicate diseconomies of scale.

Table 4.2 presents the TCF estimates. We assume that costs are explained by production (in terms of total premiums), reinsurance and acquisition, so that these variables also emerge as squares and in cross-terms. To test this basic model for robustness, we also add four control variables in an extended version of the model (see column 3 in table 4.2) . Periodic premium

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[19] This interpretation would be different in a market with only few firms. Further, this interpretation would also change when many new entrees incur unfavourable scale effects during the initial phase of their growth path.

[20] Some insurance firms can approximate their value added by comparing their embedded value over time. These data are not publicly available.

[21] The definition of production of life insurance firms is discussed further in Section 1.4.

policies go with additional administration costs, whereas unit-linked fund policies save costs. The bottom lines of Table 4.2 shows that life insurance companies, on average, enjoy scale economies of 18%. After correcting for differences in the product mix or the share of unit-linked funds and so on, we find a similar average of 21%. We also calculated average scale economies for various size classes with size measured as the companies' premium income. Scale economies appear to be larger for the smaller size classes. According to the extended model, small firms – in the lowest 25 percentile class – may realise average scale economies of 42%, where large firms – in the highest 25 percentile class – enjoy just 10% economies of scale.

Table 4.2   Estimation results of the translog cost function[a]

	Basic model		Extended model	
	Coefficient	T-value[b]	Coefficient	T-value[b]
Premium income (production)	0.50	5.5**	0.16	1.3
Reinsurance ratio	0.26	2.6**	1.13	0.9
Acquisition ratio^2	– 0.18	– 1.3	0.05	0.2
Premium income^2	0.01	2.6**	1.03	4.9**
Reinsurance ratio^2	0.04	0.6	1.01	0.9
Acquisition ratio	– 0.03	– 1.9*	– 0.02	– 0.7
Premium income * reinsurance ratio	– 0.03	– 3.0**	– 0.01	– 1.1
Premium income * acquisition ratio	0.03	1.7*	0.02	0.9
Reinsurance ratio * acquisition ratio	0.01		0.06	2.5**
Individual premiums ratio			– 0.09	– 0.7
Periodic premium ratio			0.27	7.9**
Unit-linked fund ratio			– 0.05	– 3.1**
Endowment insurance ratio			0.15	2.1*
Intercept	2.24	4.4**	4.10	5.5**
Adjusted R^2	0.89		0.89	
Number of observations	607		456	
Economies of scale	0.82		0.79	
Idem, small firms (25%)	0.72		0.58	
Idem, small to medium-sized firms (50%)	0.77		0.68	
Idem, medium-sized to larger firms (75%)	0.80		0.74	
Idem, large firms (100%)	0.87		0.90	

[a] All terms are expressed in logarithms.

[b] *: level of confidence is 95%; **: level of confidence is 99%.

Decreasing scale economies with firm size have also been found by Fecher et al. (1993) for the French life insurance industry. The comparison between the basic model and the extended model makes clear that the average scale economies per size class depend (only) slightly on the model specification. Although the average economies of scale for both models are rather similar, the dependency of the scale economies on size classes in the basic model is less than in the extended model.

The optimal production volume in terms of gross premium is defined as the volume where an additional increase would no longer diminish marginal costs, so that the derivative of marginal costs is zero. According to the basic model, the optimal size can be calculated as far above the size of all actual life insurance firms.[22] This implies that (almost) all firms are in the (upper) left-hand part of the well-known U-shaped average cost curve. This suggests that consolidation in the Dutch insurance markets is still far from its optimal level.

The TCF estimates make clear that average scale economies of around 20% are an important feature of the Dutch life insurance industry. These scale economies are generally higher than those found for Dutch banks (e.g. Bos and Kolari, 2005), but not uncommon in other sectors. Similar figures were found in other countries. Fecher et al. (1991) find 15% for France and Grace and Timme (1992) observe 4% to 27% for the US, depending on type and size of firm. The existence of substantial scale economies might indicate a moderate degree of competition, as firms have so far not been forced to employ all possible scale economies.

4.4   Indicator II: X-inefficiency

Our second indirect measure of competition is X-inefficiency. It is expected that heavy competition forces insurance firms to drive down their X-inefficiency. Therefore, X-efficiency is often used as an indirect measure of competition. X-efficiency reflects managerial ability to decrease production costs, controlled for output volumes and input price levels. A firm's X-efficiency is defined as the difference in costs between that firm and the best practice firms of similar size and input prices (Leibenstein, 1966). Errors, lags between the adoption of the production plan and its implementation, human inertia, distorted communications and uncertainty cause deviations between firms and the efficient frontier formed by the best-practice life insurers with the lowest costs, controlled for output volumes and input price levels.

For our estimations we use the stochastic frontier approach, a parametric method. The stochastic frontier approach assumes that the error term is the sum of a specification error and an inefficiency term. These two components can be distinguished by making one or more assumptions about the asymmetry of the distribution of the inefficiency term. Although such assumptions are not very restrictive, they are nevertheless criticised for being somewhat arbitrary. A flexible alternative for panel data is the distribution-free approach, which avoids any assumption regarding the distribution of the inefficiency term, but supposes that the error term for each life insurance company over time is zero. Hence, the average predicted error of a firm is its estimated inefficiency. The assumption under this approach of – on average – zero specification errors for each company is a very strong one, and, hence, a drawback. Moreover, shifts in time remain unidentified. Finally, this method does not compare single life insurers with the best-practice life insurers on the frontier, but produces an inefficiency measure for the whole sample. The 25th percentile of the life insurer cost distribution is taken as the 'thick'

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[22] Of course, the accuracy of this optimal size is limited, as its calculated location lies far out of our sample range.

frontier and the range between the 25th and 75th percentile as inefficiency. This approach avoids the influence of outliers, but at the same time assumes that all errors of the 25th percentile reflect only specification errors, not inefficiency.

Various approaches are available to estimate X-inefficiency (see, for example, Lozano-Vivas, 1998). All methods involve determining an efficient frontier on the basis of observed (sets of) minimal values rather than presupposing certain technologically determined minima. Each method, however, uses different assumptions and may result in diverging estimates of inefficiency. In the case of banks, Berger and Humphrey (1997) report a roughly equal split between studies applying non-parametric and parametric techniques. The number of efficiency studies for life insurers is small compared to that for banks and a similar extensive survey is not available for the former sector. [23] Non-parametric approaches, such as data envelopment analysis (DEA) and free disposable hull (FDH) analysis, have the practical advantage that no functional form needs to be specified. At the same time, however, they do not allow for specification errors, so that such errors if they do exist may be measured as inefficiency, raising the inefficiency estimate. The results of the DEA method are also sensitive to the number of constraints specified. An even greater disadvantage of these techniques is that they generally ignore prices and can, therefore, account only for technical, not for economic inefficiency.

All approaches have their pros and cons. All in all, the stochastic frontier approach, which has been applied widely, is selected as being – in principle – the least biased. This chapter will also use this approach. Berger and Mester (1997) have found that the efficiency estimates are fairly robust to differences in methodology, which fortunately makes the choice of efficiency measurement approach less critical.

From our estimations it follows that the average cost X-efficiency is 72%, so that the inefficiency is, on average, 28%. That implies that costs are, on average, 28% higher than for the best practice firms, conditional on production composition, production scale and input prices. The average cost X-efficiencies fluctuate irregularly over time, so that apparently no clear time trends emerge. The inefficiencies are assumed to reflect managerial shortcomings in making optimal decisions in the composition of output and the use of input factors.

A possible reduction of cost by at least one quarter does not seem plausible in a competitive market. However, it should be remembered that these inefficiency figures set an upper bound to the measured inefficiencies, because they may partly be the result of imperfect measurements of production and input factor prices. Particularly in the financial sector, production is difficult to measure, while our data set also suffers from none-too-exact information on input prices.

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[23] See Bikker, Bos and Goldberg (2005) for a short survey.

Table 4.3   Average cost X-efficiency in 1995-2003

Year	X-efficiency
1995	0.72
1996	0.73
1997	0.74
1998	0.72
1999	0.73
2000	0.71
2001	0.73
2002	0.73
2003	0.72
Total	0.72

Instead of drawing very strong conclusions regarding competition, it is better to compare these results with benchmarks. In the literature, the insurance inefficiency figures in other countries range from 10% to 65%. This implies that our inefficiencies are quite common and even lie earlier towards the lower end. They are similar to the inefficiencies that have generally been found in the banking literature, which spread – widely – around 20% (Berger and Humphrey, 1997; Altunbas et al., 2001). Bikker (2004, p.218) reports an average X-inefficiency for Dutch banks in 1997 of 26%, remarkably similar to the figure for insurance firms.

Table 4.4   Average cost X-efficiency over size classes

Size class	Cost	Average size x 1000 euro
1	0.747	13,261
2	0.763	94,907
3	0.731	277,937
4	0.693	548,474
5	0.696	936,795
6	0.701	2107,749
7	0.742	14479,608
Total average	0.724	2447,891
Median		519,970

Table 4.4 shows average cost X-efficiency for seven size classes. Here we observe a clear U-curve for cost efficiency: higher efficiency for small insurance firms, lower efficiency for medium-sized companies and, again, increasing efficiency for larger firms. A possible explanation could be that smaller firms generally profit from their orderly structure and neatly arranged composition of products, so that differences in managerial inability across smaller firms are limited (as has also been found for banks, see Bikker, 2004, p. 209 ff.). The largest firms operate more than others on competitive submarkets such as pensions and on the competitive international markets which has forced them to become more efficient.

4.5   Indicator III: The Boone indicator

Recently Boone has presented a novel approach to measuring competition.[24] His approach is based on the idea that competition rewards efficiency. In general, an efficient firm will realise higher market shares and hence higher profits than a less efficient one. Boone shows that when profit differences are increasingly determined by marginal cost differences, this indicates increased competition. An advantage of the Boone indicator is that it is more directly linked to competition than measures such as scale economies and X-inefficiency, or frequently used (both theoretically and empirically) but often misleading measures as the concentration index.[25]

The Boone indicator can be used to answer two questions. The first question asks, 'how does competition evolve over time?', the second, 'how does competition in the life insurance market compare to competition in other service sectors?'. Since measurement errors are less likely to vary over time than over industries the fist question can be answered with more confidence than the second. For that reason, Boone focuses on the change over time within a given sector. Comparisons across sectors are possible, but unobserved sector specific factors may affect this indicator. The Boone indicator requires data of fairly homogeneous products. Although our data describe a fairly homogeneous product compared to other studies, we try correct for possible heterogeneity in products by adding variables which reflect product differences.

The Boone indicator is the parameter reflecting the relationship between relative marginal costs and relative profits. Following Boone (2004) and Creusen et al. (2004), we also introduce a dummy variable for each insurance firm and for each year into the model. The advantage is that these firm dummies pick up all company-specific characteristics, including scale, that are not captured by the other variables, so that part of the disturbances is eliminated. The time dummies eliminate unobserved specific time dependent factors. Furthermore, some control variables are added: the percentage of individual policyholders, policyholders with periodic payments, unit-linked fund policies and endowment insurances to correct for product differences between firms.

To obtain a comparable scale for the dependent variable (profits) and the independent variable (marginal costs) and to avoid that outliers have to much effect on the estimated slope, these variables are both expressed in logarithms. Consequently, all observations of companies with losses – instead of profits – have been deleted, introducing a bias in the sample towards profitable firms. This introduces a focus towards profitable firms, but the competitive effect of firms with losses is still present in the behaviour and results of the other firms in the sample.[26]

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[24] See Boone and Weigand in CPB (2000) and Boone (2001, 2004).

[25] More competition can force firms to consolidate (see our scale economies discussion). Claessens and Laeven (2004) found in a world wide study on banking that concentration was positively instead of negatively related to competition.

[26] Suppose that the negative profit firms are price fighters. In a well functioning market the price fighters will influence profitability of the other firms.

Finally, we adjust the Boone model also by replacing often-used proxies for marginal costs, such as average variable cost, by a model-based estimate of marginal cost itself. We are able to do so using the translog cost function from Section 4.3. Moreover, this enables us to correct the marginal cost for the effects of scale economies. The correction is based on an auxiliary regression wherein marginal costs are explained by a quadratic function of production. The residuals of this auxiliary regression are used as adjusted marginal costs.

Figure 4.1 presents estimates of the Boone indicator with profits and marginal costs in logarithms. Marginal costs are represented in three ways: average variable cost, defined as management costs as share of the total premium as in the traditional Boone model (see e.g. Boone, 2004; Creusen et.al., 2004), marginal cost, derived from the translog cost function of Section 1.3, and adjusted marginal costs, i.e. marginal costs adjusted for scale economies.[27] Average variable costs have the advantage of being less complex, since they are not model based, but they are less accurate because we can not distinguish between variable and fixed costs.

As indicators of competition, the annual estimates are, of course, pivotal in the analysis. The estimates of the Boone-indicator based on average variable costs, which range from -0.2 to -0.7 and are significant in all years but one. The model-based marginal costs estimates are slightly higher and only significant in four out of nine years. Although the level of the indicator is difficult to interpret, its low degree of significance suggests moderate competition. When marginal costs are adjusted for scale economies, none of the betas are significant. This indicates that scale economies are an important component of the observed Boone indicator.

Figure 4.1 shows that the Boone-indicator fluctuates somewhat over time in all three model versions. We observe an upward trend, indicating a slight, but insignificant decline in competition over the respective years. Average variable costs and model-based marginal costs result into similar estimates. The third measure of marginal cost renders a comparable pattern over time, but – due to the eliminated scale economies – at a higher level.

In order to assess whether our estimates for the Boone indicator are high or low, we compare them with estimates for other Dutch industries. Creusen et al. (2005) estimated the traditional Boone model for the manufacturing and service industries and found elasticities between average variable costs and profits of around, respectively, -5.7 and -2.5, for the years 1993-2001. The Boone indicator of the life insurance industry is around -0.45. Comparisons of the Boone indicator across sectors are problematic due to measurement error, for example due to differences in accounting practices of profits and costs. However, the absolute value of the Boone indicator of insurances is much lower (closer to zero) than in other service industries. Moreover, estimations using exactly the same definition for profit as in Creusen et al. (2005)

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[27] Note that the variable cost may change over the size classes due to scale efficiency (just as the marginal cost may do), so that the average variable cost may differ from the marginal cost. Apart from this theoretical dissimilarity, these variables are also measured differently in practice.

lead to the same conclusion.[28] All in all, this suggest that the life insurance industry is less competitive than the manufacturing and service industries.

Figure 4.1   **Effect on profits of average variable costs and (adjusted) marginal costs**
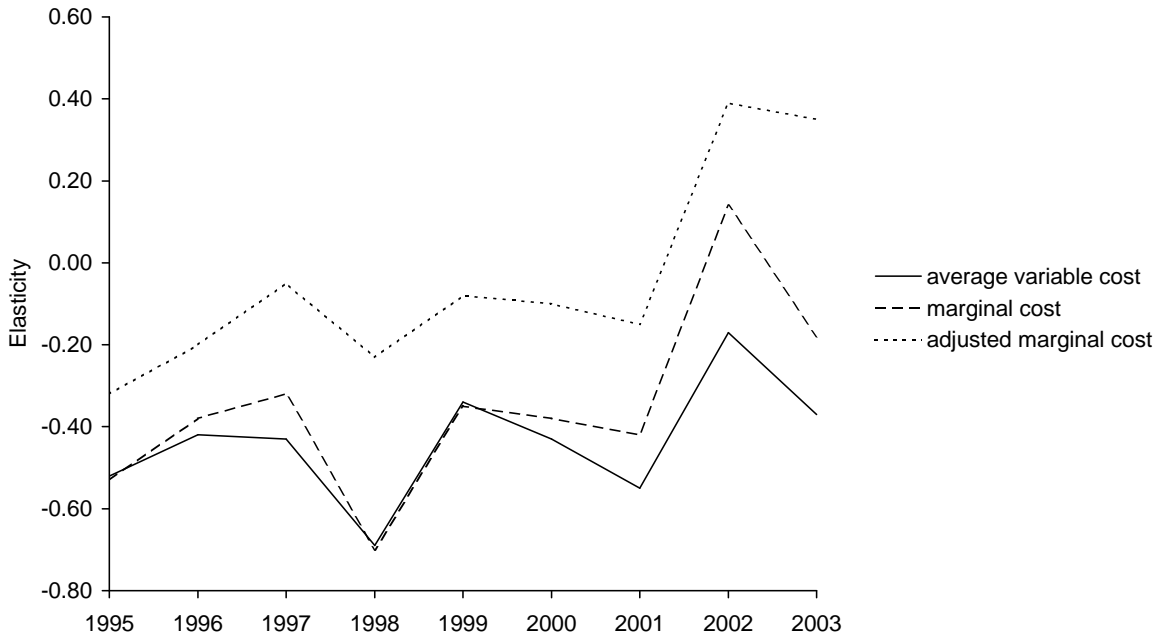
4.5.1   Sensitivity analysis: the Boone indicator based on market shares

The Boone indicator is subject to the deficiency that it is based on profitability of past business instead of entire new production. This issue is solved by analysing another performance indicator: market shares. Just as is the case for profits, market shares will also react stronger on marginal costs, the more competitive the market is. Market shares are based on annual premiums and a significant part, 55% of these premiums, are from new policies. Therefore market shares reflect largely the current business.

Although the indicator as originally formulated by Boone is based on relative profits, the idea behind it – namely that competition rewards efficiency – implies that we could also use the intermediate magnitude relative market shares as outcome variable. Therefore, as a check on the findings in the previous section, this section presents estimation results based on markets shares. Results are shown in Figure 4.2. We find that average variable costs have a significantly negative effect on market shares. An increase of this marginal cost measure with one percent results in a market share loss of around 0.45%. If we consider changes in the indicator over time, we observe larger negative values in the years just before the major fiscal policy change-over of 2001 with respect to annuities (see also Figure 4.2). This indicates that competition has intensified somewhat in these years, probably with respect to annuities, which is in line with the

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[28]   The value of the Boone-indicator in these estimations becomes around – 0.85. Results can be obtained from the authors.

observed increase in advertising and sales. In the subsequent years, we see that the effect of marginal costs on market shares decreases, pointing to weakening competition.

Figure 4.2   **Effect on market shares of average variable costs and (adjusted) marginal costs**
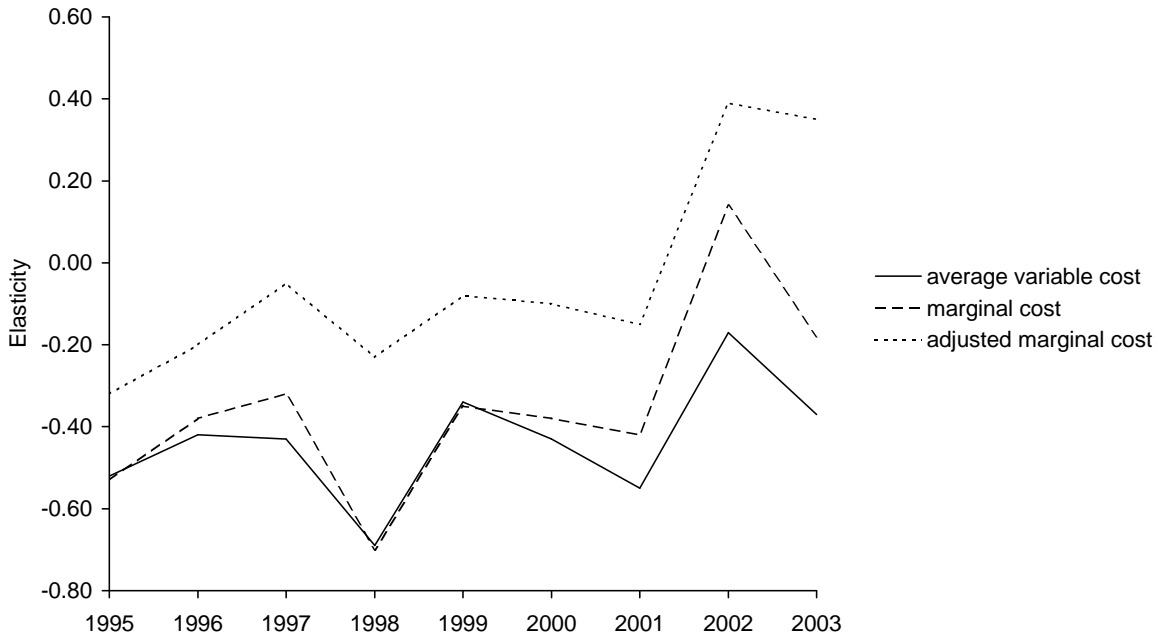
Although the results presented above uniformly indicate that efficiency gains lead to larger market shares, this could also fully or partly be due to scale economies, as observed in Section 1.4. Large firms enjoy these scale economies which reduce marginal costs and work to increase market shares. To avoid possible distortion due to this kind of endogeneity, we correct the marginal costs (mc) for scale economies. This correction for scale economies yields the purest method of investigating the present relationship. Figure 1.2 present the estimates for the market share model based on marginal cost adjusted for scale economies. As in the earlier model versions, we find that higher marginal cost tend to diminish a firm's market share and vice versa. However, the value of this indicator and its level of significance are much lower now (namely around -0.2), apparently due to the fact that the positive contribution of scale economies has been eliminated (see also Figure 4.2). However, one should not draw too strong conclusions based on this coefficient as it may also partly be smaller due to measurement errors. The conclusion remains that even after correcting for scale economies, efficiency gains hardly affect market shares.

4.6   Conclusions

This chapter analyses competition and efficiency in the Dutch life insurance market. As competition cannot be observed directly, we use three indicators to estimate competition in an indirect manner.

The first indicator is the scale efficiency level. A translog cost function has been applied to measure scale economies in the Dutch life insurance industry. Estimates indicate that scale economies exist and amount to 20% on average, ranging from 10% for large firms to 42% for small firms. Such scale economies are substantial compared to what is usually found for other financial institutions such as banks. All existing insurance companies are far below the estimated (theoretical) optimal size. The present analysis therefore seems to suggest that further consolidation in the Dutch life insurance market may be beneficial. Apparently, from an efficiency point of view competitive pressure in the insurance market has been insufficient to force insurance firms to employ the existing scale economies.

The second indicator is the X-efficiency level. We find cost X-inefficiency estimates of around 25%, on average, a magnitude which would not be expected in a market with heavy competition. Incidentally, such inefficiencies are not uncommon for life insurance in other countries.

The third indicator is the Boone indicator. Estimates of this indicator point to weak competition in the Dutch life insurance industry compared to indicator values in other service industries. All our empirical analyses are based on balance sheet and profit and loss data from both new and old business. Although the majority of annual premiums stems from new policies, the portfolio of policies is built up over the years. Hence, eventual improvement of competition would show up in these figures only with some delay, depending on the type of indicator. However, annual estimates of the Boone indicator for the most recent years find a weakening rather than a strengthening of competition.

The evidence in this chapter does not allow us to draw strong conclusions on competition in the insurance market. The reason is that our analysis is on an aggregate level. Yet, all three indicators point to limited competition.

Reduction of both X-inefficiency and scale inefficiency would be advantageous for all parties involved. Developments in information technology make further improvements in efficiency possible. Our empirical research also suggests that consolidation would carry substantial cost savings.

5 Financial advice and consumer choice

5.1 Introduction

A well functioning retail market for financial products requires, *inter alia*, that consumers can find the product that matches their preferences against the lowest possible price. Financial products, and in particular life insurance products, are generally considered to be complex. Searching and comparing financial products can therefore be difficult and time consuming. For this reason, many people make use of financial advisors to help them make the right decisions. However, the market for financial advice may not function properly. In particular, due to the incentive structure in his market (commissions paid by insurers) coupled with the infrequent purchase of these products and the lack of sufficient expertise by consumers, financial advisors may give biased advice that is not in the best interest of consumers.

This chapter empirically analyses what factors determine how well consumers make their actual choices. In particular, we will investigate the role of financial advice in the decision making process. In order to compare choices, we focus on a class of rather simple and homogeneous life insurance policies (in Dutch: koopsompolissen). These insurance products consist of single or periodic premium paid to the insurer, followed by a payment at maturity to the policyholder. This payout is either guaranteed, or depends on the value of an underlying investment portfolio.

We will focus on three different decisions that consumers will have to make in order to buy this type of life insurance. First, we analyse the determinants of the choice of distribution channel. Second, we aim to explain what type of insurance policy is chosen. Finally, we focus on the determinants that underlie a consumer's choice of insurance company.

We use two types of data to perform our empirical analyses. For analysing what choices people made and why they made these choices, we make use of a consumer survey by CentERdata. For evaluating how well people have selected their insurance company, we obtained data on insurers' quotations from the Consumentenbond and MoneyView. Both datasets will be further described below.

What insurance policies do we analyse?

In this chapter we analyse so-called unit-linked life insurance policies and life insurance policies with a guaranteed payout ('koopsompolissen'). These insurance products consist of an initial deposit of a lump sum or a periodic premium, followed by a payment at maturity. The duration of these policies generally ranges from 5 to 30 years.

The periodic or lump sum payment can be invested in an investment portfolio (equity funds, real estate funds etc.), in which case the payment at maturity depends on the return of investment. The payout of this type of policy is therefore uncertain, and there is a risk that the payout will be either lower or higher than expected. These products are often called unit-linked products, because their value is linked to a number of underlying units of investment.

Alternatively, the policy holder can chose for a guaranteed pay-out. The payout of the latter group of insurance products is certain, and there is no risk involved in the amount a consumer receives at the end of the duration of the product. For this reason, the relative value of products from different insurers is easily determined by comparing the payout (per euro invested) of a product from a particular insurer with another.

Within these products, a policy holder can choose to receive no payout if the purchaser of the product dies before the insurance matures. Although such a choice leads to a higher payout (given the premium) at maturity, the vast majority of purchasers of policies with a guaranteed payout choose restitution of the maturity payment in case of premature death.

Before 2001, the premiums paid for these policies were tax exempted (up to a certain amount). Since then, they are only exempted under rather strict conditions.

5.2   Survey data

In this section we will briefly describe the survey we conducted and present an overview of the survey statistics. This overview is meant to give a description of the data and to draw some preliminary conclusions on this basis. These conclusions will be investigated further on in this chapter by estimating the influence of variables on consumer choice by means of econometric techniques.

The survey was conducted by CentERdata over a two-week period, starting 11 September 2004, by means of an on-line questionnaire.[29] Within its panel, CentERdata had previously collected data on the purchase of life insurances. These data contain information on number and type of policies purchased, the time of purchase and the insurance company from which the insurance policy was purchased. However, this data did not identify through which channel a particular product was purchased or what type of information was used by the consumer before purchasing the insurance policy. Our survey was therefore aimed at unveiling through which distribution channel these insurance products were purchased and what type of information was

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[29] CentERdata is an institute related to the University of Tilburg, and specialised in acquiring data through the Internet by using a panel of about 2000 persons. The panel is representative of the population in the Netherlands, with regard to sex, age, level of education, religion, geographical residence, marital state and number of persons per household. In appendix III, a cross-section is presented (available from the website of CentERdata), comparing the composition of the CentERdata panel with data for the Netherlands as a whole from the Central Bureau of Statistics (CBS), http://www.uvt.nl/centerdata/nl/

available and used by the consumer. Thus, our questionnaire basically contains questions about how and why people bought their policies.

Survey statistics

In total, 368 respondents from 351 different households completed the questionnaire. They purchased in total 562 products. For 23 policies, the type of product could not be determined. Further, for 23 policies, we could not determine the distribution channel used.[30]

For 518 product purchased by 346 respondents, both distribution channel used as well as the type of product purchased, could eventually be determined. Out of these 346 respondents, 250 purchased only one product, whereas 66 purchased two products and 30 purchased more than two products.

Out of the 518 products, 287 were classified as unit-linked, whereas 231 were classified as having a guaranteed payout. Of the 287 unit-linked products, 149 were bought through an insurance advisor, whereas 138 were bought directly from an insurer. Of the 231 products with a guaranteed payout, 115 were bought through an insurance advisor, whereas 116 were bought directly from an insurer. Thus, the respondents are rather evenly spread over the two types of products (unit-linked and guaranteed payout) and distribution channel (insurance advisor and a direct writer).

The period over which the majority of products included in the survey were purchased ranges roughly from 1984 until 2004, a period of 20 years.[31] The number of purchases per year is not uniformly spread over time. Figure 5.1 shows a steady rise in the number of products purchased, starting around 1985, with a peak around 2000, after which the number of products purchased shows a steep decline. This decline is most likely due to the stricter tax exemption rules that applied to these policies since 2001.

Starting from 1995 and ending in 2001, much more unit-linked products were sold, as compared to the number of products with a guaranteed payout. This largely coincides with the period that stock markets were booming, and possibly suggest a link between the performance of stock markets and the preference for unit-linked products.

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[30] These respondents had indicated they had purchase neither a unit-linked nor a product with a guaranteed payout. When asked in what sense the product was different the responses were 'no idea' in these 23 cases.

[31] There is one outlier in 1964. This probably constitutes a typo, as products with this duration do not exist.

Figure 5.1   Number of policies purchased by year and distribution channel
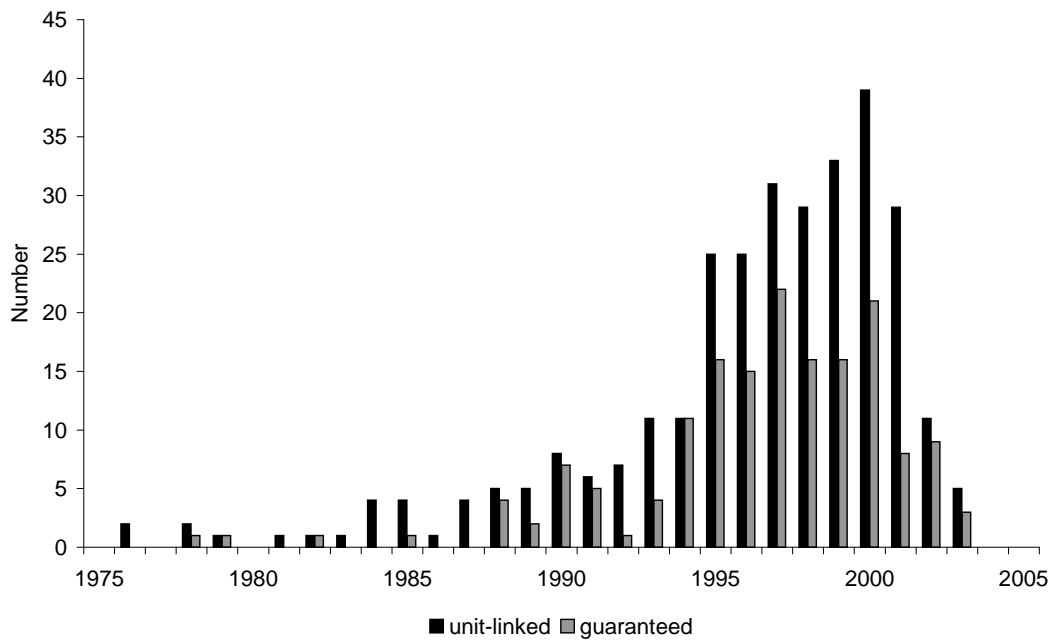
In the table below, a number of survey statistics for the entire dataset are given.

Table 5.1   Sample statistics by type of policy

	Unit linked	Guaranteed
Average age on purchase	42.44	41.40
Average age on survey date	48.91	50.29
Average gender	0.25	0.33
Average net income	1765.98	2249.63

Search behaviour of respondents: importance of financial advice

In Figure 5.2 below, we show for each distribution channel (direct and insurance advisor) what percentage of respondents used which type of information before purchasing the insurance policy.[32] Overall, around 62% of the consumers use only one source of information. Roughly 20% of the respondents purchasing insurance products directly from an insurer used information from only one insurance advisor, whereas 36% used information from only one bank. This shows that insurance advisors still form a rather important source of information, even for consumers who purchase directly from an insurer. Around 75% of the respondents buying through insurance advisors used information from only one insurance advisor, whereas 11% used information from only one bank. Thus, consumers purchasing through an insurance advisor depend heavily on the information provided by him. This shows how important it is that financial advice given by insurance advisors is impartial and aimed at maximising benefit for consumers.

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[32] The various percentages add up to more than 100% because people could answer several questions with 'yes'.

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Figure 5.2   **Information sources used by distribution channel**
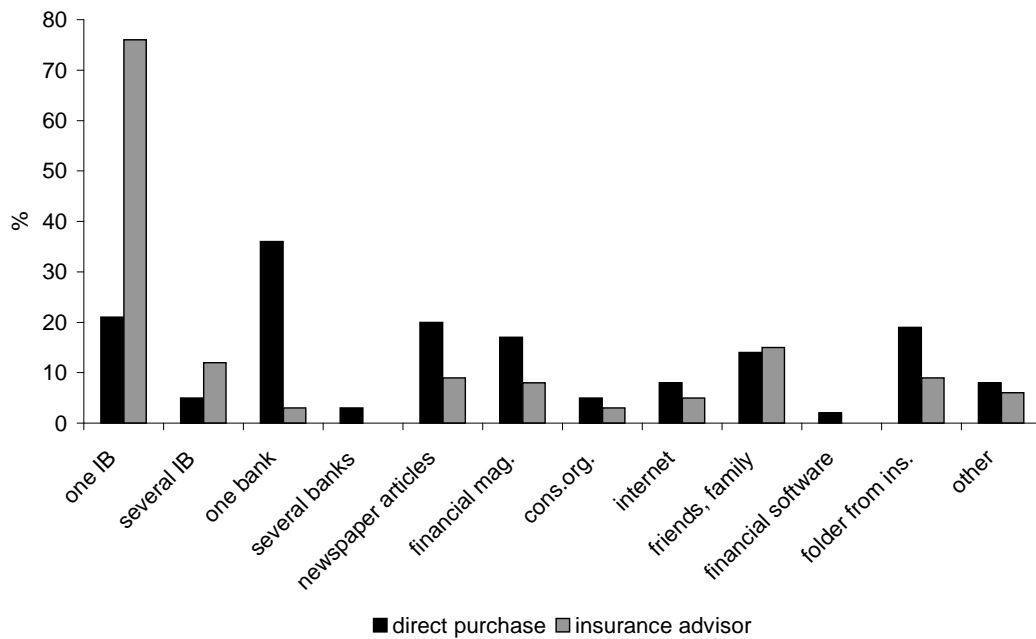
Consumers purchasing insurance products directly from an insurer were asked whether they had compared offers of several companies. The results indicate that of those who purchased a product directly, 60% indicate that they have not compared several banks or insurers before buying the product. Of the respondents who purchased a product through an insurance advisor, more than 40% indicated the insurance advisor did not compare several insurers and banks. For those respondents who indicated the broker did compare several products, on average 3.2 products were compared.[33]

Effect of commission awareness on choice of distribution channel

Respondents were asked in what way, according to them, an insurance advisor gets remunerated for his advice and intermediation. Possible answers were: his services are for free, the insurance advisor charges me directly, he gets commission from the insurance company, he receives a fixed income from the insurance company, and don't know. The results show that most people either don't know how insurance advisors are remunerated, or know that an insurance advisor receives commission from the chosen insurer. The total number of people answering that insurance advisors offer their services for free, charge directly or receive a fixed income is relatively small. For those consumers purchasing through an insurance advisor, the percentage of people who don't know in what way the insurance advisor gets remunerated is much higher than for those consumers purchasing directly from an insurer (Figure 5.3). Of the respondents who purchased a product through an insurance advisor, almost 38% knew how the insurer rewarded the advisor for its services, whereas 51% doesn't know how the insurance advisor was

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[33] One respondent indicated 99 products were compared. This is probably a typo. We have set this value to missing in the rest of our analysis.

remunerated for his services. For those purchasing directly, the percentages are 78% and 17%, respectively. Direct purchasers are thus much more aware of the existence of commissions.

Figure 5.3   **Remuneration awareness by distribution channel**
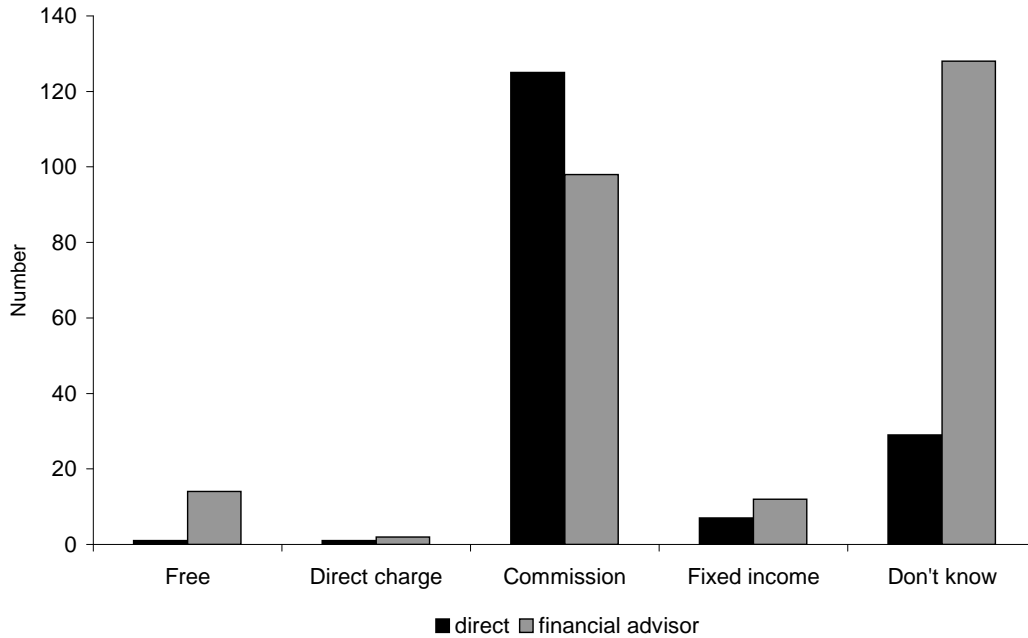

Effect of distribution channel on relation between risk aversion and product purchased

The survey also contains data on how the respondents would classify themselves with regard to risk-aversion. This was done by asking them to indicate to what extent (on a scale from 1 to 7) whether they agreed with the following proposition:

'I consider it to be more important to invest safely and receive a guaranteed payout than to take risk in order to receive the highest possible yield'

Figure 5.4 shows the relation between product choice and risk aversion. The results tentatively suggest a negative relation between the probability of purchasing a unit-linked product and risk aversion. The more risk averse a respondent is, the lower the probability that he or she purchases a unit-linked product. An important question is whether the choice of distribution channel has any influence on this relation. Figure 5.4 below shows the proportion of unit-linked policies, for both distribution channels. The results indeed suggest there might be an effect. When consumers buy products directly from a bank or an insurer, there is a rather clear link between the type of product chosen and the indicated level of risk-aversion. However, when consumers buy their products through a insurance advisor, the correspondence seems to be much weaker.

Figure 5.4   Product choice and risk aversion
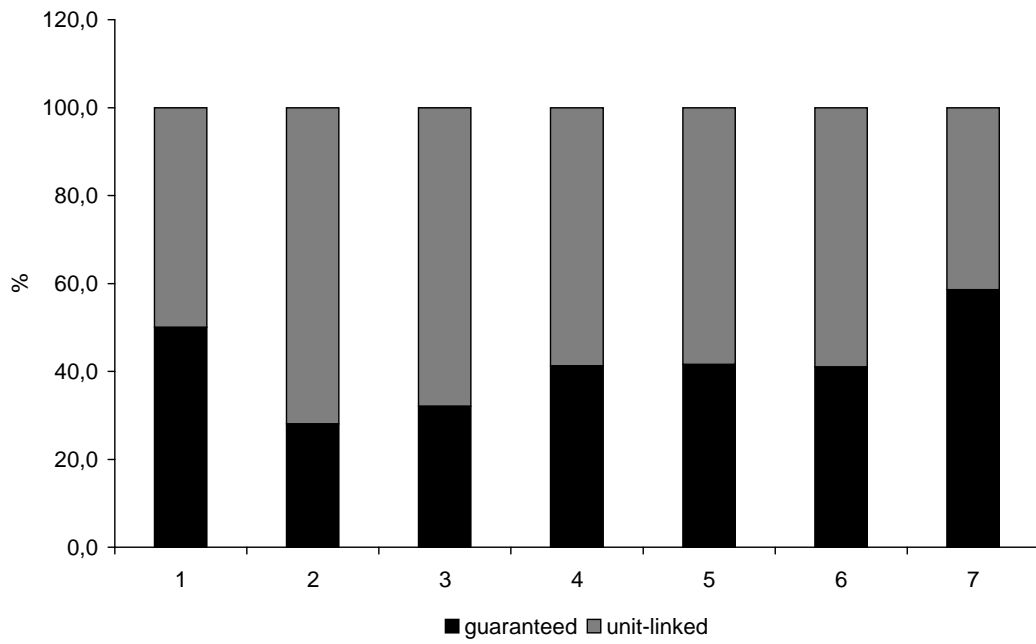
Figure 5.5   Product choice and risk aversion per distribution channel
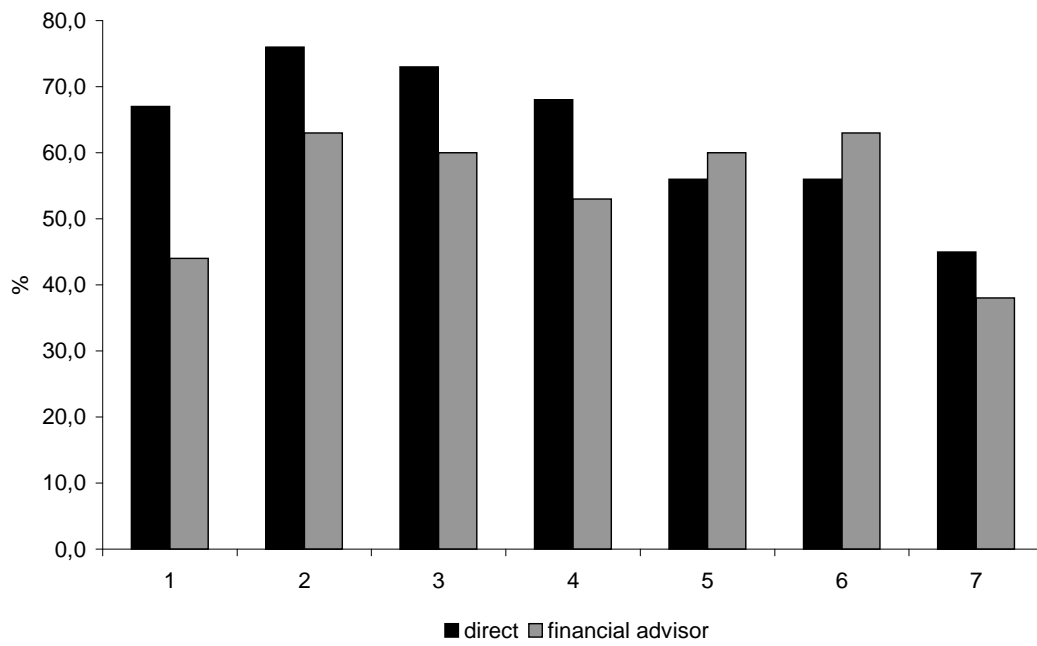
Conclusion

Consumers on average do not compare a large number of insurers or banks when buying a life insurance. Further, a large number of consumers do not know how an insurance advisor is remunerated. However, consumers who buy their products directly from an insurer seem to be more aware of the way in which insurance advisors get remunerated. Finally, the data suggest that the relation between risk aversion and product choice is stronger for consumers who buy their product directly from an insurer than for consumers who buy their products through an insurance advisor. In the next section we will elaborate on these observations.

5.3   The consumer's decision problem

The decision problem of a consumer who plans to buy one of the products in our dataset can be broken down into two steps. First, the consumer has to decide through which distribution channel she will purchase the product. An analysis of the factors determining consumer choice of distribution channel is important because it might point to effective strategies to influence consumer behaviour and thereby intensify competition. For example, a policy issue which currently receives some attention is to what extent insurance advisors should disclose to consumers the way in which they are remunerated and the level of remuneration. If knowledge by consumers of an insurance advisors' remuneration influences either the distribution channel or the type of product chosen, transparency with respect to remuneration can be an effective policy instrument to influence consumer behaviour. Below, we will therefore first analyse the factors determining consumer choice of distribution channel.

Next, we will analyse what factors determine how consumers choose between safe and risky insurance products. If a consumer purchases a policy he or she can either purchase a product with a guaranteed payout or a unit-linked product. In the former case, the consumer will know exactly what he will receive at the end of the duration of the product, whereas in the latter case the payout can only be predicted on average. A unit-linked product is therefore said to be risky. Consumers should be rewarded for this risk. Therefore the average expected payout of a unit-linked policy should be higher than the certain payout of a guaranteed policy. People who are relatively risk-averse will prefer safe products to risky products, even though they receive a higher expected payout when buying risky products. Less risk averse people may prefer buying risky products. Thus, it is reasonable to assume that a consumer's risk appetite influences his or her choice between unit-linked products and products with a guaranteed payout.

In addition, there might also be other factors that influence the type of product chosen. We analyse whether the quantitative effect of the explanatory factors depends on the distribution channel used. We expect this effect to be more pronounced for people who purchase their insurance product through an insurance advisor than for people who purchase directly from an insurer, because consumers who have difficulties searching for products, might find it difficult to compare various products, and might have a hard time judging whether

product fits their characteristics best. Insurance advisors play an important role in overcoming these information asymmetries and lowering search costs. An insurance advisor should be able to judge what a consumer needs, should be able to classify a product with respect to these needs, and should be able to search for and compare various products.

The above description of the consumers decision problem leads quite naturally to the following approach. First, a binary choice model describing the choice of distribution channel is estimated. Second, for each of the two distribution channels a binary choice models describing the choice of product (unit-linked or a guaranteed payout) is estimated. This results in three models each of which estimates the probability of a particular choice made as a function of a number of explanatory variables.[34]

5.4 Choice of distribution channel

Knowledge by the consumer of the way in which insurance advisors are remunerated may influence the choice of distribution channel. Possibly, consumers will be more inclined to purchase products through direct writing if they know insurance advisors receive a considerable amount of money if they sell a product. We measure the level of remuneration awareness by asking consumers whether they know in what way a insurance advisor is remunerated. If the question is answered correctly, remuneration awareness is set to 'high', otherwise it is set to 'low'.

A second variable which might influence the choice of distribution channel is consumers' stated knowledge of financial products. Consumers who think they have a high level of financial expertise will think they can compare financial product themselves, without the help of an insurance advisor. Consumers with a high stated level of financial expertise might be more inclined to purchase insurance products directly.[35]

A third variable influencing the use of distribution channel might be age (at the time of purchase of the product). Elderly people might be less able to compare complex financial products. Also, the Internet is an important tool in searching for a financial product. Elderly people might be less inclined to use Internet, especially for such purposes.

In addition, income might influence choice of distribution channel because the opportunity costs of searching for a financial product might be bigger, the higher one's income. People with a higher level of income might be less willing to spend leisure time in searching for products themselves. Because the effect of additional income will presumably be less strong the higher

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[34] To make sure that the estimated endogenous quantity can indeed be interpreted as a probability, this function cannot be linear. Its value has to be limited between zero and one. A common choice for such a function is the logistic distribution. This results in a so-called Logit model. We have used the Logit model in our estimation. Choosing a different distribution results in a different binary choice model (probit). This does not yield qualitatively different results for our estimations.

[35] We measure a respondents stated level of knowledge by asking whether she considers herself an expert in financial matters on a scale of 1 to 4. Respondents who answer 3 or higher are classified as having a 'high' stated level of expertise.

the level of income, we take the natural logarithm of income as the appropriate explanatory variable.

Also, the level of education might be important. Respondents with a high level of education might be more able to search for the best offer than people with a low level of education. We distinguish between respondent with a 'low' and a 'high' (HBO/WO) level of education.

Finally, gender might influence the use of distribution channel. For example, men might be more interested in financial products and might therefore be willing to invest more time in searching for an offer from a direct writer. The relevant factors influencing the choice of distribution channel are therefore:

- Stated level of expertise
- Age
- Income
- Level of education
- Gender

5.4.1 Results

To identify which parameters influence a consumer's choice of distribution channel, we estimated the probability of purchasing an insurance product through an insurance advisor as a function of transparency, stated expertise, age, income, educational level and gender.

$$P(\text{Insurance broker} \mid \beta . x_i) = F(\beta . x_i)$$

$$\beta . x_i = \beta_0 + \beta_1 \text{ remuneration awareness}_i + \beta_2 \text{ stated expertise}_i + \beta_3 \text{ age}_i + \beta_4 \log(\text{income})_i + \beta_5 \text{ education level}_i + \beta_6 \text{gender}_i$$

Table 5.2   **Choice of distribution channel: logit estimates (financial advisor=1, direct channel=0) (number of observations=270)**

	Estimate	T-value
Constant	1.157	0.45
Commission awareness	− 1.977	− 6.53
Stated expertise	− 0.346	− 1.11
Age	− 0.050	− 3.37
In(come)	0.323	1.01
Education level	− 0.658	− 2.12
Gender	0.273	0.74

The results in Table 5.2 show that age, education level and commission awareness are significant in determining which distribution channel has been chosen.[36] The higher someone's age, the less probable it becomes that this person will buy products from an insurance advisor. Whether or not this result is in agreement with our intuition is unclear. On the one hand one might expect elderly people to have more difficulties searching for insurance products themselves. On the other hand, elderly people might be used to purchase directly from a bank or an insurance advisor. The higher the education level of a consumers, the lower the probability that he or she will buy insurance products through an insurance advisor. For respondents with a higher level of education, it might be easier to search for products themselves. Finally, the more consumers know about remuneration (commission awareness), the more probable it is that they will buy products directly from an insurer instead of through an insurance advisor.

The effect of commission awareness is the most important effect of these three significant variables. If people are aware they actually pay for the advice they receive, they will search for an insurance product themselves more often. If consumers know how insurance advisors were remunerated, the probability of purchasing directly from an insurer increases with no less than 40%. The most straightforward explanation for this result is that consumers are not willing to pay for financial advice if the cost structure of advice is made explicit.

5.5   Choice of product type: guaranteed vs. unit-linked

In the survey, people were asked to indicate their level of risk-aversion. As already noted, this indicated level of risk-aversion should be an important factor influencing the type of product a consumer chooses.[37] Risk averse consumers should purchase on average more products with a guaranteed payout, whereas consumers who are risk-seekers should purchase on average more unit-linked products.

Apart from the level of risk aversion, there might be other important factors that influence choice of product. An important candidate that might influence the type of product chosen is a consumers' level of financial expertise. Respondents with a higher level of financial expertise might be more able to judge how risky a particular product is. Therefore, the higher the level of a consumer's financial expertise, the better he or she might be able to match risk aversion with his or her product choice. Because this reasoning is only valid for people who indeed have a high level of expertise, it is the revealed level of expertise rather than the stated level of

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[36] Taking into account other variables such as revealed expertise, number of products purchased or year dummy's for the period 1991-2001 does not influence these results. The year dummy's for 1996, 1997, 1998 and 2000 are significant and indicate an increased likelihood of purchasing through an insurance advisor. In addition, a Lagrange Multiplier test indicated there was no heteroscedasticity, except marginally in the variable 'education level'. However, a Wald test indicates that there is no heteroscedasticity in 'education level'.

[37] Respondents have been asked about their risk aversion after they had already purchased the insurance policy. A problem with this procedure might be that consumers rationalise their choices ex-post.

knowledge that is relevant.[38] To measure the revealed level of expertise, consumers are asked several questions. If they answer these questions correctly, their level of revealed expertise is set to 'high'. If they answer one or more questions incorrectly, their level of revealed expertise is set to 'low'.

Another factor that might influence the type of product chosen is income. People with a higher income will be able to take on more risky investments with less adverse consequences for their personal finances. Therefore, a given level of risk aversion might relate differently to product choice for people with a high level of income than for people with low incomes. As before, instead of income the natural logarithm of income is more appropriate as an explanatory variable.

An additional factor that might be of importance is age upon purchase. Elderly people have a lower remaining life expectancy. Therefore, elderly people will have less time to average out fluctuations in level of the stock markets. This means that the risk involved in purchasing a unit-linked product is higher. We might therefore expect elderly people on average to buy less unit-linked products. In addition, someone's risk aversion might shift during the course of a life. This variable catches such an average shift in risk aversion with age.

Finally, the average consumer's preference for risky products might shift over time. To capture potential shifts in average consumer preference, we have introduced a year dummy. This dummy allows for changing (average) consumer preference over time. For example, it allows distinguishing between the period when consumers expected the stock market to boom (approximately between 1995 and 2000), during which we can expect respondents to be more likely to purchase unit-linked products, and the years before and after this period.

The relevant factors influencing product choice are therefore:

- Risk aversion
- Revealed level of financial expertise (crossed with risk aversion)
- Income
- Age
- Year dummy

5.5.1 Results

We have analysed the influence of the variables mentioned above on product choice separately for consumers purchasing insurance products through a direct writer and for consumers purchasing through an insurance advisor. A complicating factor is that some respondents have purchased multiple products. These respondents have answered the questionnaire for each product separately. This means different observations are no longer independent, as they

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[38] Also, this reasoning implies that revealed expertise should enter the model as a cross-term with risk-aversion. We expect no direct effect of level of financial expertise on product choice.

correspond to one single respondent and results in so-called serial correlation. In principle, it would be possible to adjust our econometric analysis in such a way as to allow for such serial correlations. However, for simplicity we have chosen to include only one observation for people who have purchased multiple products.[39] Thus, we estimate the probability of receiving a guaranteed payout, with explanatory variables aversion, income, age, the dummy variable hype, and aversion crossed with revealed expertise.[40] Revealed expertise enters the equation crossed with aversion because it should have no direct influence on product choice, but could result in a stronger effect of aversion on product choice.

We assume that there are no selection effects. This assumption is justified, as can be shown by estimating a switching regression model that allows for selection effects[41]. The null-hypothesis of no selection effects could not be rejected on the basis of this model. The following relation has been estimated separately for consumers purchasing insurance products directly from an insurer and consumers purchasing insurance products through an insurance advisor:

Table 5.3   Choice of product: logit estimates (guaranteed = 1, unit-linked=0)

	Advisor[a]		Direct[b]	
	Value	T-value	Value	T-value
Constant	4.33	1.52	1.47	0.48
Risk aversion	0.01	0.09	0.28	2.02
Ln (income)	− 0.48	− 1.44	− 0.28	− 0.79
Year dummy 1995-2001	− 1.43	− 3.39	− 1.47	− 3.42
Age	0.01	0.71	0.01	0.06
Risk aversion * revealed expertise	− 0.26	− 1.68	− 0.00	− 0.02

[a] Number of observations: 146.
[b] Number of observations: 121.

[39] We have checked for robustness against selecting the observation included in the analysis. Choosing the first product purchased, choosing the second product for those who purchased more than one product does not influence our results. Also, the regression results are robust against including include all data points and estimating without correcting for multiple products per respondent.

[40] We have also checked whether excluding log(income) as an explanatory variable influences our results in table 5.3 below. This might occur if risk aversion and income are strongly correlated. However, the results remain unchanged, the coefficient for risk aversion changes slightly in the case of direct purchase and remains significant at the 5% level, whereas the coefficient for risk aversion in case of purchase through an advisor is still not significant, with a P-value of 0.99.

[41] To check whether our results might be influenced as a result of selection bias, we have additionally estimated a binomial choice switching regression model with the same explanatory variables that allows for self-selection effects due to the influence of unobserved variables. Selection effects might be present if the probability of a particular observation to be included in the sample depends upon the phenomenon we are explaining. Selection bias might be due to the sampling frame, non-response or to self-selection of respondents. The Center-panel is representative of the population in the Netherlands. Within the panel, non-response was negligible. Bias due to self-selection could for example arise if, due to unobserved characteristics, risk averse respondents who purchase unit-linked products are more likely to end up purchasing through an insurance advisor. Our results for the binomial choice switching regression model show that there are no selection bias effects.

P(guaranteed payout $\mid \beta . x$) = F($\beta . x$)

$\beta . x = \beta_1 aversion_i + \beta_2 \log(income) + \beta_3 age_i + \beta_3 hype_i + \beta_4 aversion_i *$ revealed expertise$_i$

The outcome of the regression is shown in Table 5.3. When purchasing through the direct channel, there are two variables that have a significant influence on products choice: risk aversion and the year dummy variable. The estimation results suggest that for consumers purchasing insurance products directly from an insurer, risk aversion plays an important role in the choice consumers make. The sign of the coefficient for risk aversion implies that consumers with a higher level of risk aversion are more likely to buy insurance products with a guaranteed payout. This confirms that people with a high level of stated risk aversion indeed prefer to purchase less risky products than people with a high level of stated risk aversion, giving confidence in the use of the stated risk aversion as a measure of revealed risk aversion.[42] The other variable that is significantly related to consumer choice is the year dummy. The sign of the coefficient for this dummy implies that in the period 1995-2001 people were more likely to buy unit linked products.[43]

For consumers purchasing products through an insurance advisor, only the year dummy is significant. The risk aversion of consumers purchasing through an insurance advisor is not significant in determining which type of product they purchase.[44]

To interpret the different influence of risk aversion on consumer choice for the two distribution channels, we have tried to think of various possible scenarios that could explain why insurance advisors do not take into account a consumer's level of risk aversion when advising a certain type of product.

A first possibility is that the data we use do not represent the variables we think they represent. For example, the stated level of aversion might not indicate the true level of risk aversion. This explanation assumes that in reality there is a relation between true risk aversion and product choice, but not between the stated level of risk aversion and product choice. On the basis of their expertise and a consumers income, age etc. insurance advisors judge what the 'true' level of risk aversion is. There are several problems with this explanation. First, there is no significant relation between any of the other exogenous factors and product choice. This might imply that we have missed out on the most important variables explaining 'true' risk

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[42] Another way in which one can gain confidence in stated risk aversion as a measure of revealed risk aversion is by relating it to variables like gender, age, income and education. If any of these is significant in explaining risk aversion, the relation should agree with naïve expectations. The results of this exercise are that gross income, age and educational level are significantly related to risk aversion. Income is negatively related to risk aversion. The higher gross income, the lower risk aversion. Age and educational level are both positively related to risk aversion. The higher age or educational level, the higher the level risk of aversion. These dependencies are in line with what one would naively expect.

[43] For the entire sample, including respondents who purchased two or more insurance policies, we've also analysed product choice with a dummy for every year in the period 1990-2003. All dummies for 1990-1994 and 2002-2003 were not significant. A log-likelihood ratio test indicated that the restriction of all dummies from 1995-2001 being equal was not significant.

[44] We have checked our results for robustness by including variables for which there seems to be no obvious reason to include them, like gender, stated expertise and education level. These variables are not significant and including them does not influence our results. In addition, a Lagrange Multiplier test indicates no heteroscedasticity in the exogenous variables.

aversion. This seems improbable. Second, if we assume that true risk aversion does influence product choice, the fact that there is no significant relation at all between stated risk aversion and product choice implies that there can only be a very weak correlation between stated risk aversion and true risk aversion. This also seems improbable. Finally, our results show there is a relation between stated risk aversion and type of product chosen for direct purchase. This suggests that a respondent's stated level of risk aversion indeed corresponds to his or her true level of risk aversion.

Therefore, a more probable explanation is that insurance advisors, on average, either ignore risk aversion, or treat all consumers as having the same level of risk aversion. On the basis of other variables, such as age, income and educational level, the insurance advisor then searches for the best product. However, again we note that none of the variables that might influence the type of product chosen are significant. This then leads to the question: on the basis of what factors do insurance advisors advise their clients a particular type of product (unit-linked or guaranteed payout)?

5.6   Choice of insurance company

The previous section has dealt with the choice of product type. This section focuses on the choice of insurer. Here, we aim to assess how well people choose and what factors are relevant in making the right choices with regard to the insurance company. In particular, we will look to what extent search intensity, financial expertise and the use of financial advice have helped people in making the right choice.

The choices we are examining here are limited to the selection of the insurance company offering policies with a guaranteed pay-out. The reason for this is that only for these policies we can assess how well people have made their choice. We will do this by comparing the guaranteed pay-out of the chosen policies with the pay-out of the policies they could have chosen. As the pay-out (per euro invested) is the only relevant criterion for this type of policies, it constitutes an unambiguous performance measure for the chosen life insurance.

As competition between insurance companies depends, inter alia, on the responsiveness of consumers to differences in premiums, understanding what factors help consumers to pick out the best offer could provide policy-makers useful instruments to enhance competition between life insurers. Furthermore, it could clarify to what extent financial advisors help consumers in making the right choices.

Note that, in this section, we will not evaluate whether a consumer should better have chosen a unit-linked policy rather than a policy with a fixed pay-out, nor will we look at whether the consumer should have bought a life insurance in the first place.

5.6.1 Methodology

The basic idea of the research in this section is to analyse the choices that consumers make with regard to the insurance company. Virtually all insurers offer life insurance policies with a guaranteed pay-out, but, for a given individual, differences between insurance companies can be substantial. An example of these differences is given in Table 5.4. This table shows actual quotations for a male, aged 45, investing a single premium of 2804 euros for 20 years (as of November 2000).

Table 5.4 **Quotations for a male, aged 45, investing 2804 euros for 20 years (as of November 2000)**

Insurance company	Pay-out	Pay-out index
	euro	%
A	8370	2.34
B	9022	10.31
C	6984	− 14.61
D	9344	14.25
E	9725	18.90
F	7060	− 13.68
G	8079	− 1.22
H	8900	8.81
I	8939	9.29
J	7846	− 4.07
K	8700	6.37
L	7489	− 8.44
M	8071	− 1.32
N	8645	5.70
O	8608	5.24
P	8898	8.79
Q	8792	7.50
R	6847	− 16.28
S	6581	− 19.54
T	7940	− 2.92
U	7636	− 6.64
V	7462	− 8.77

Source: Consumentenbond

The difference between the insurer with the highest pay-out (E) and the lowest pay-out (S) is more than 3000 euro for identical policy conditions. As there is no relationship between the size and age of insurers on the one hand, and the quoted pay-out on the other, these large differences cannot be explained by differences in reputations of the insurance companies. Moreover, all these insurance companies are supervised by the Dutch central bank. This prudential supervision explicitly aims to minimise the default risk of life insurance companies and, as such, protect their policy-holders.

As shown, the choice of insurance company could matter a lot. But how well do people actually make their choices? In order to answer this question we constructed a database that

consists of the following pieces. For each individual of the CentERdata panel that bought a life insurance with a guaranteed pay-out, we know which insurance company he or she selected. Further, we constructed for each individual a choice set containing all insurance companies that the respondent could have chosen, including the pay-out that the respondent would get from these insurance companies. By comparing the pay-out of the chosen company with the pay-outs of the other life insurers, we can assess how well the actual choice of the respondent is.

The simplest way to do this is by looking at how much more money the respondent could have made if he had chosen the best quotation. However, different respondents have different policies. We therefore have to express the quality of the choice in relative terms in order to make fair comparisons between respondents. We propose a variable, labelled Pay-out Index (POI) to assess the quality of a given choice:

$$POI = \frac{actual\_pay\_out}{average\_pay\_out}$$
(5.1)

We thus evaluate the actual choice by the relative distance of the quoted pay-out of the chosen company to the mean pay-out in the relevant table of quotations. The last column of Table 5.4 shows this variable for the quoted insurers. Thus, if a respondent had chosen company E from this table, his pay-out index would be equal to 18.9, implying that he has chosen an insurance company that offers a pay-out that is 18.9 percent above the average (for comparable policies).

After measuring the quality of the actually chosen insurance companies, we will analyse what factors explain how well consumers make their choices between insurance companies. We hypothesise the following determinants:

- The use of an intermediary: intermediaries supposedly have the knowledge to support consumers to buy the best policy available.
- Search intensity: consumers that are more active in searching are likely to find better policies.
- Financial expertise: consumers with a better understanding of financial products are expected to find better policies.
- Education: highly educated people are expected to be better able to understand and select the right policy.

The next section describes the data that we will use to perform the above analyses in more detail.

5.6.2   The data

Within the CentERdata panel described in section 5.2, a number of respondents indicated that they had bought a life insurance with a guaranteed pay-out. For these respondents we know which insurance company they have selected, the premiums they have paid, the year of purchase and other personal characteristics (gender, age, et cetera.).

To establish the relevant choice sets for these respondents, we have obtained data on quotations by insurance companies from the Consumentenbond and MoneyView. Each quote is based on the age of a (fictitious) applicant, his gender, the term and type of the policy and the amount of the single or regular premium. By type of policy we mean whether or not the insurance pays out in case the holder dies before the end of the term. As the vast majority chooses a policy that is payable if the holder dies within the term, we only consider this type of policies.[45] After excluding the quotes for policies that are not payable in case of death, data on 2253 quotations remain. These data cover 46 insurance companies for the period 1996 until 2003. The quotes can be represented in 130 different tables, where each table contains quotes from different insurers, but with identical policy conditions.[46] Hence, on average around 17 insurance companies are present in each table (=2253/130). An example of such a table was already given in table 5.4

The next step consists of linking the table of relevant quotations to the policies of the respondents in our sample.[47] As the conditions of the quotations are hardly ever exactly the same as the characteristics of the respondents' policies, we actually have to find the table that is closest to the policy of the respondent. We have adopted the following rule to determine which table of quotations is most appropriate. We take the table of which the (absolute) differences between the conditions of the quotes and the conditions of the respondent's policy is minimal, taking into account the following order of conditions: year of quotation, gender, age, duration and premium. Thus, first we select tables on the basis of closest quotation year. Then, from the remaining set of tables we select the tables on closest gender, then on closest age, and finally on closest premium paid.[48]

Taking the closest table of quotations for respondents whose policies do not perfectly correspond to the quoted policies constitutes a non-parametric method to estimate POI. The

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[45] The data do not allow us to determine what type of policy the households have actually bought. However, the empirical results below are robust to the assumption we make here. I.e., assuming that all respondents bought a policy that does not pay out in case of premature death does not alter the empirical results below.

[46] Only some minor differences remain in the percentage of the capital paid out in case the policy holder dies. The effects of these differences on the Pay-out Index are negligible.

[47] If respondents purchased a policy from a company of which no quotes are available at all, these respondents were obviously removed from the analysis.

[48] The choice of order for the last four variables is rather arbitrary. However, the results presented below are robust to the order of these conditions.

alternative would be to use a parametric method, by which we impute POI by estimating it for those respondents whose insurance company was not quoted in the year they bought the policy. For robustness, we have also applied this method to our data. The parametric method and its results are described in the appendix of this chapter. The results are indeed robust with respect to these two different methods.

After linking the table of relevant quotations to the policies of the respondents in our sample, we have the actual choice of policy the respondent has made and a table that consist of quotes from different companies based on conditions similar to the conditions of the respondent's policy. We interpret this table as the actual choice set of the respondent. This can be justified by the fact that the quoted insurers collectively capture virtually the whole market for life insurances. Interpreting the table in this way, we can assess how well the choice of the respondent actually was by comparing the (quoted) guaranteed payment of the selected insurance company with the guaranteed payments of the other companies. As mentioned before, from the consumers' point of view, these payments are the only relevant product characteristic in which policies with guaranteed payments could differ between insurers.[49] The policies are therefore directly comparable by looking at differences between these guaranteed pay-outs. The pay-outs can thus be used to benchmark the actual choices of the respondents.

We have already proposed a variable, labelled Pay-out Index (POI) to assess the quality of a given policy. More formally, this POI for a given quotation i is:

$$POI_{i,q,t} = 100 \times \left(\frac{p_{i,q,t}}{\overline{p}_{q,t}} - 1 \right),$$
(5.2)

Here, p denotes the guaranteed pay-out of a policy, q denotes the relevant table, and t denotes the year of quotation. We thus evaluate the actual choice by the relative distance of the quoted pay-out of the chosen company to the mean pay-out in the relevant table of quotations.[50] The last column of table 5.4 shows this variable for the quoted insurers. The figure below shows the histogram of *POI* for all available quotations. This histogram again indicates that the differences within a choice set can be very large. For some policies, consumers could get a 32 % higher pay-out than average. But we also observe quotations that offer a pay-out that is more than 40 % below average.

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[49] In a very few cases, profit-sharing arrangements may lead to a higher pay-out *ex post*. Leaving out these observations did not alter the results presented below.

[50] In stead of comparing the actual pay-out to the *mean* pay-out, we have also used the *maximum* pay-out as the benchmark within a choice set. Again, the results are robust to this. We have chosen to use the mean as the benchmark, because it is more stable if, for some reason, a typical cheap or expensive insurance company is not quoted in a particular year.

Figure 5.6   Histogram Pay-out Index
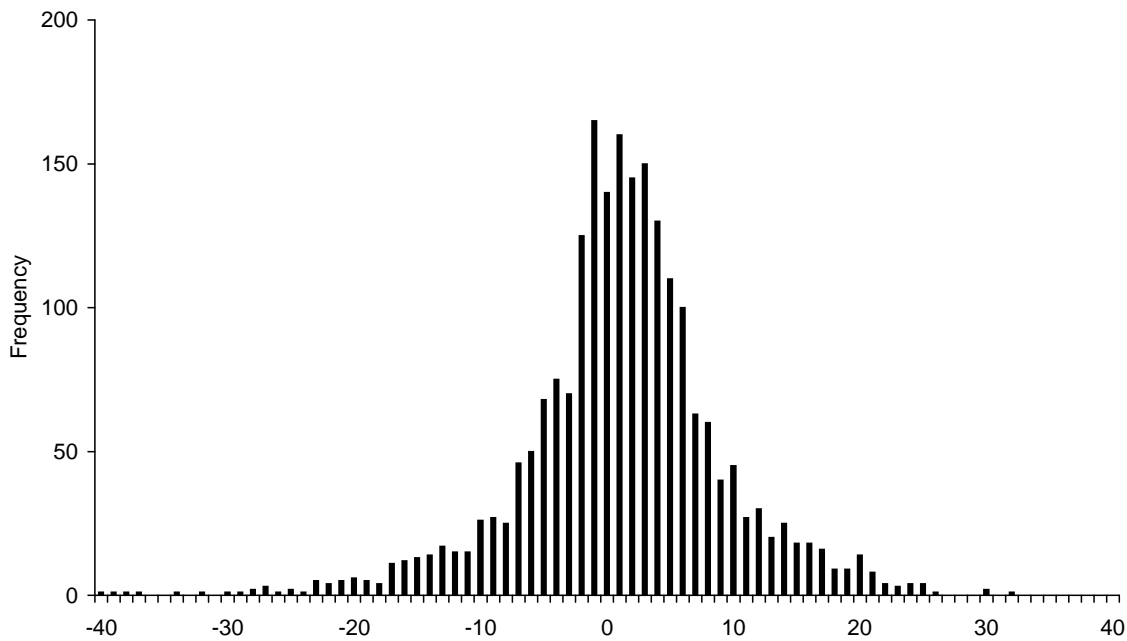
5.6.3   Econometric analyses

What factors explain how well consumers make their choice of insurance company? We have already hypothesised the following determinants: the use of an intermediary, search intensity, financial expertise and education. All of these variables are expected to have a positive impact on the quality of the actual choices.

We will estimate the impact of these variables on *POI* using the following explanatory variables. For the use of an intermediary we use a dummy labelled ADVISOR. Search behaviour is represented by a variable labelled SOURCES. It counts the number of information sources the respondents had used during their decision making process. These six sources are: relevant newspaper articles, financial magazines, information published by the Consumentenbond (including tables of quotation), internet, brochures from insurance companies and financial software.

Financial expertise is proxied by a dummy that accounts for correctly answering two questions about the (general) conditions of their policy. These questions were about what would happen when the policy expires. The first one was about what the respondent could do with his pay-out. Five options, including "I don't know" were presented. The second question, which was only asked to respondents who gave the right answer to the previous question, was as follows: do you have to buy your annuity from the same company you bought your life insurance policy from? KNOWLEDGE is the dummy that accounts for answering the first and second question correctly. Education, finally, was again captured by a dummy variable (EDUCATION) accounting for being highly educated (HBO/WO). The sample means of the explanatory variables are presented below:

Table 5.5   **Sample means explanatory variables**

	Mean
Variable	
Advisor	0.64
Sources	0.41
Knowledge	0.07
Education	0.10

We thus estimate the following model:

$$POI_i = \alpha + \beta \cdot BROKER_i + \gamma \cdot SOURCES_i + \delta \cdot KNOWLEDGE_i + \phi \cdot EDUCATION_i + \varepsilon_i \qquad (5.3)$$

Because of heteroskedastic error terms under OLS, we estimate model 5.3 by (feasible) generalised least squares. The results of this regression on the full sample can be found in the table below.

Table 5.6   **Regression results full sample**

	Parameter estimate	Standard error	T-value	Pr > |t|
Variable				
Intercept	2.15	0.99	2.17	0.03
Advisor	− 5.35	1.12	− 4.77	< 0.00
Sources	0.08	0.65	0.12	0.90
Knowledge	− 0.78	1.18	− 0.66	0.51
Education	0.03	1.66	0.02	0.99

R-Square: 0.1336.
Adj R-Square: 0.1122.
Number of observations: 167.

For the full sample, only the coefficient for ADVISOR is significantly different from zero at the 5% significance level (two-sided). It does, however, have the 'wrong' sign. Respondents who buy a policy through an intermediary obtain a significantly lower guaranteed payment than respondents that buy a policy directly from a life insurance company. This can also be seen in Figure 5.7 from the differences in the distribution of POI between the two distribution channels.

Figure 5.7 shows that for both groups of respondents there is some variance in the actual pay-out indices, but the distribution for the group of respondents that bought their policies from direct writers is indeed more to the right. Nevertheless, many of this group could have achieved a much higher pay-out than they actually did. But this applies even stronger to the respondents who used an advisor. We can hence derive two conclusions: (i) advisors do not advice the best available policies for their customers, and (ii) consumers who buy through a financial advisor are worse off than those who do not.

Figure 5.7   Histograms actual choices
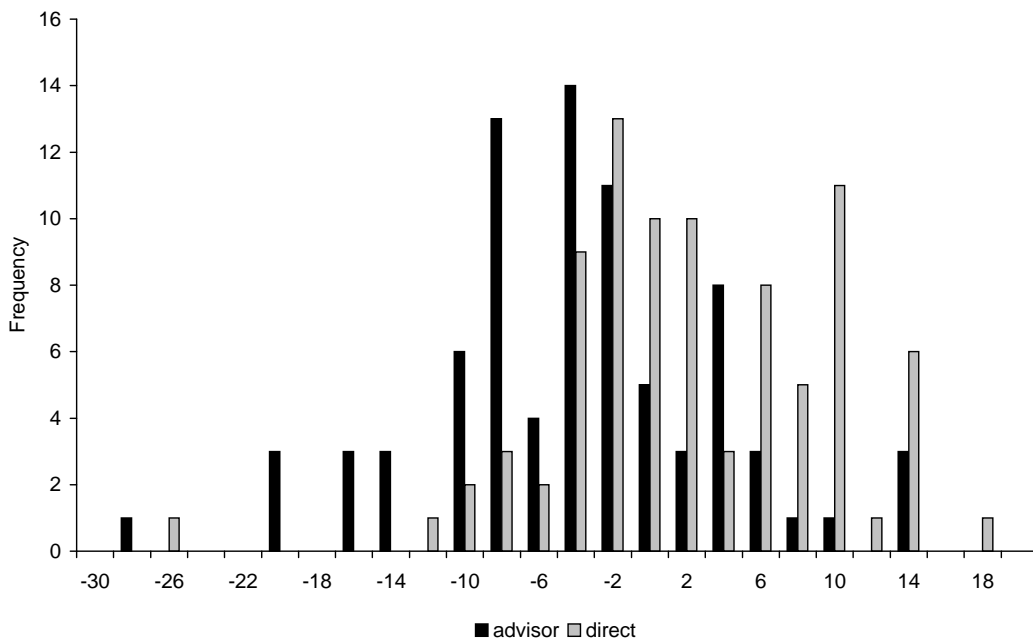
5.6.4   **Diagnostics and sample restrictions**

In the full sample, there are some respondents who bought more than one policy. There could therefore be some serial correlation in the residuals for these observations. Serial correlation could mean that the score of an individual on POI is better explained by an unobserved individual characteristic. A Godfrey-test, however, rejects the hypothesis of serial correlation.

Further, there could be a sample selection bias (between people that use an advisor and those who do not). Perhaps there are unobserved characteristics that both explain why people use an advisor and how well people make their choice of insurer. Ignoring the possible existence of such unobserved characteristics can significantly bias the results, because differences in POI may then be incorrectly attributed to the use of an advisor.

To test for sample selection bias, we estimated a switching regression model that contains (1) the choice of distribution channel (according to the specification in section 5.4.1) and (2) the POI according to equation 5.3, conditional upon the chosen distribution channel and allowing for correlation between the residuals of (1) and (2). The estimation results of this model indicate a positive correlation between the residuals of the model that explains the choice of distribution channel and the residuals of model 5.3 for people who used an advisor. Further, these outcomes point to even more pronounced and significantly negative effects of the use of advisors. This would suggest that there is indeed a sample selection effect, but the resulting bias underestimates the negative relationship between the use of an advisor and POI. However, these results should be taken with care. In particular the estimates for the selection effects are not at all robust to slightly different specifications of the model. Apparently, the sample is too small[51]

[51] The switching regression model is much more demanding (in terms of degrees of freedom) than the model of equation 5.3.

to draw conclusions from the switching regression model *regarding selection effects*. Regarding the effects of the other explanatory variables, the outcomes of the switching regression model are consistent with outcomes presented in Table 5.7.

Finally, one could argue that for some observations the time lag between the date of quotation and the date of actual purchase would create too much noise.[52] Although there is no reason to expect that this noise will bias the result in one direction or the other, it might still be useful to run the analysis on a more restricted sample. In the following analysis we will therefore use a sample in which we only consider one (the first) policy per respondent. Further, we only consider policies for which the date of purchase is at most two years[53] away from the nearest table of quotations. The results can be found in the table below.

Table 5.7	Regression results restricted sample: dependent variable is POI			
	Parameter estimate	Standard error	T-value	Pr > |t|
Variable				
Intercept	4.95	0.96	5.16	<0.01
ADVISOR	− 8.65	1.30	− 6.68	<0.01
Sources	− 1.72	0.98	− 1.76	0.08
Knowledge	0.72	2.99	0.24	0.81
Education	0.06	3.07	0.19	0.85

R-Square: 0.4764.
Adj R-Square: 0.4354.
Number of observations: 56.

The results for this restricted sample are very similar. Although the sample is substantially reduced due to the restrictions, we find an even stronger negative effect of using an advisor on the pay-out. Moreover, there is a large improvement in the fit of the model as measured by the R-square statistic Finally, we restricted the sample even more by allowing for no differences between the date of purchase and the quotation date. Again, this had no significant effect on the results.

In conclusion, in all the above samples we find a significantly negative coefficient for the effect of advice on the pay-out index. The average pay-out index for consumers using an advisor is 5,4 (full sample) to 8,7 percentage points (restricted sample) below the average pay-out index of those who do not use an advisor.

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[52] Note that part of this possible noise is already filtered by the method of weighted least squared that we used.

[53] Setting this limit involves a trade-off between sample size and possible noise in POI. The results are, however, robust to different settings of this limit.

5.6.5 Alternative benchmark

Until now we have compared the average pay-out of those who do not use an advisor with the average pay-out of consumers who do use an advisor. However, one could argue that such a comparison is too mild for truly assessing the performance of advisors. After all, an advisor should know the market so well that he should always recommend the best available policy. Using this as a benchmark, we should redefine POI (the dependent variable - see equation 5.1). Instead of the average pay out, we now include the maximum pay out in the denominator. In order to make this a fair comparison, we only included in this calculation the policies from insurers that are sold through both distribution channels.

Estimation results using this modified dependent variable are shown in table 5.8. We find that those consumers who do not use an advisor achieve on average a pay out index that is 10.3 percentage points below the maximum of 100%. Consumers who use an advisor achieve on average a pay-out index that is 14 percentage points below the maximum.

Table 5.8   Regression results full sample: dependent variable modified is POI (see text)

	Parameter estimate	Standard error	T-value	Pr > |t|
Variable				
Intercept	− 10.30	1.32	− 7.82	0.00
Advisor	− 3.71	1.48	− 2.50	0.01
Sources	− 0.74	0.85	0.88	0.38
Knowledge	− 3.30	1.68	− 1.97	0.05
Education	− 1.61	2.23	0.72	0.47

R-Square: 0.07.
Adj R-Square: 0.04.
Number of observations: 145.

5.7 Conclusion

On the basis of consumer survey data, we investigated the consumer choice of distribution channel and product type and the relation between these two. Commission awareness is found to be statistically significant in determining which distribution channel consumers will choose to purchase their insurance product. The higher the level of commission awareness, the lower the probability of purchase through an insurance advisor. Moreover, the effect of commission awareness on choice of channel is very large. The level of stated risk aversion is found to be significant for product choice in the case of direct purchase. The higher the level of risk aversion, the higher the probability of purchasing a safe product. Surprisingly, this relation between risk aversion and product choice is absent in the case of purchase through an insurance broker. The most probable explanation for this is that a substantial number of insurance advisors does not take into account a consumers risk aversion when advising consumers on what product to purchase.

By combining the consumer survey data and data on quotations by life insurance companies, we also investigated the impact of search behaviour, financial advice and personal characteristics on the quality of the decisions that consumers make with respect to life insurances with a guaranteed pay-out. Only the use of an insurance advisor was found to have a statistically significant effect on how well consumers select an insurance company. This effect turns out to be negative: on average the respondents in our sample that bought a policy through an insurance advisor receive a significantly lower pay-out than the respondents that bought a policy directly from an insurer. Furthermore, we have found that virtually all respondent could receive a pay-out that is substantially higher than the pay-out of the policies they have actually chosen. We conclude therefore that, within this type of life insurances, (i) consumers generally do not buy the best policies available, (ii) advisors do not advice the best available policies for their customers, and (iii) consumers who buy through a financial advisor are worse off than those who do not.

Appendix: Estimating *POI* parametrically

In section 5.6, we presented a non-parametric method of estimating *POI*. In this appendix, we propose to estimate this variable parametrically.

For those respondents whose insurance company was not quoted in the year they bought the policy, we estimated *POI* by the following model:

$$POI_j = \beta_j Q_j + \varepsilon_j \tag{5.4}$$

The index j denotes the insurance company, and Q_j denotes a set of j vectors containing a constant and the quotation conditions gender, age, duration and the natural logarithm of premium. We thus estimate 46 equations on the quotation data where all years are pooled, allowing βj to vary across insurance companies. The parameter estimates of these OLS regressions are then used to predict *POI* for the non-linkable respondents. Hence, for this group we have

$$\hat{POI}_{i,j,t} = \beta_j P_i , \tag{5.5}$$

where P_i denotes a vector containing the gender, age, duration and premium of the respondent and his policy. Note that the level of the predicted *POI* will not differ across years when this methodology is applied.

The fact that *POI* is estimated for a number of cases implies that the dependent variable will have some measurement error. This, however, will not bias the results. In general, adding random noise η (with $E(\eta)$ =0) to the dependent variable *y* poses no problem. If the true model is

$$y = \beta \cdot x + \varepsilon \,, \tag{5.6}$$

and $Y = y + \eta$, we can write (5.6) as $Y = \beta \cdot X + w$, where $w = \varepsilon + \eta$. Assuming that the covariance between *X* and η is zero, the covariance between *X* and *w* will be zero as well. Hence we only have to evaluate how reasonable the assumption of zero covariance between *X* and η in our case is. As *X* represents variables such as the use of an intermediary, search behaviour and financial knowledge, there is no reason to expect that the errors in predicting *POI* are related to the explanatory variables of (5.5). An *F*-test on this hypothesis, applied to the 51 linkable cases for which we can calculate the prediction error, indeed confirms this.

Although the prediction errors do not bias the estimates, adding the cases with estimated *POI* may still introduce heteroskedasticity in the error terms in (5.5). A Breusch-Pagan test, however, rejects the hypothesis of heteroskedasticity. We conclude therefore that the estimators of (5.5) are unbiased.

The question that naturally follows concerns the predictive quality of (5.5) or, related, the aggregate explanatory power of (5.4). There are *a priori* some factors that could adversely affect the explanatory power of this model. First of all, the observed variation in *POI* may be largely due to variations *within* insurance companies rather than *between* companies. This 'within' variation may not only occur across tables, but also across different years.

In order to test the aggregate explanatory power of (5.4), we estimated the following equation:

$$POI_{i,j} = \sum_{j} D_j\left(Q_j\right) + e_i \,, \tag{5.7}$$

where D_j denotes the company-specific dummies. The R^2 of this model is equal to 0.63. Hence, on average we are able to explain 63 % of the total variation in *POI* by including the quotation conditions gender, age, duration and premium in interaction with company-specific dummies. The company specific intercepts account for most of the explained variation (59 %), implying that *POI* is largely determined the chosen insurance company. The model in (5.5) is thus expected to produce reasonable predictions of *POI* for the policies that cannot be directly linked to a table of quotations.

Applying (5.5) to the non-linkable cases produces 157 observations in total for which we estimate the following model:

$$POI_i = \alpha + \beta \cdot BROKER_i + \gamma \cdot SOURCES_i + \delta \cdot KNOWLEDGE_i + \phi \cdot EDUCATION_i + \varepsilon_i \qquad (5.8)$$

The results of this regression can be found in the table below.

Regression results full sample

Variable	Parameter estimate	Standard error	T-value	Pr > |t|
Intercept	1.38	0.91	1.51	0.13
Advisor	− 3.95	1.04	− 3.81	0.00
Sources	0.30	1.56	0.54	0.59
Knowledge	0.72	1.16	0.62	0.53
Education	− 0.41	1.55	− 0.27	0.79

R-Square: 0.1128.
Adj R-Square: 0.0894.
Number of observations: 157.

The results are very similar to the results following from our non-parametric estimation of *POI*. If we only include one (the first) policy per respondent and only consider policies that were bought in years for which we have quotation data (1996-2003), 58 observations remain in the sample. This sample is much smaller, but will not suffer from possible autocorrelation due to households with more than one policy. Furthermore, the expected noise in *POI* is lower. The results of the regression on this smaller sample are listed below. Again, the outcomes are comparable. We conclude therefore that our results are robust with respect to the chosen method of predicting *POI*.

Regression results with restricted sample

Variable	Parameter estimate	Standard error	T-value	Pr > |t|
Intercept	3.62	1.88	1.92	0.06
Advisor	− 7.98	2.03	− 3.93	0.00
Sources	0.04	1.38	0.003	0.98
Knowledge	1.07	3.74	0.029	0.78
Education	1.72	3.05	0.056	0.58

R-Square: 0.2590.
Adj R-Square: 0.2031.
Number of observations: 58.

6 Policy options

6.1 Introduction

The analysis in the previous chapters has raised doubt about the degree of competition in life insurance markets. Profit margins have been relatively high, there is evidence of substantial inefficiencies, and high marginal costs have a much smaller impact on market share than is the case for other services sectors for which comparable estimates are available. This impression of weak competition is confirmed by our findings concerning the market for financial advice. Consumers do not shop around extensively for financial advice, and often this advice does not result in an optimal choice, given the available options and the consumer's risk preference. As a result, consumers exert only limited competitive pressure on advisors or on life insurance firms. At the same time, life insurance products are a very important instrument in the financial planning of many households. Therefore, a well-functioning market for life insurance is an important policy objective.

In this chapter we discuss policy options aimed at improving the functioning of markets for life insurance products. Some of these are already being implemented in one form or another, some other options will be implemented after the new law on financial intermediation (WFD) has entered into force at the end of 2005. But we also consider a number of policy options that are currently not discussed in Dutch policy debates.

It should be stressed that each of these policy options has potential benefits, but also potential costs in terms of implementation costs or administrative burden. Before implementation, an assessment of there costs and benefits is recommended.

Our discussion of policy options is structured along the lines of our analytical framework presented in chapter 2. Thus we distinguish between three groups of actors, life insurance firms, financial advisors and consumers. Competition may be hindered by structural or behavioural characteristics of each of these groups. In the following three sections, we discuss policy options aimed at each of these groups of actors. In each paragraph we first discuss relatively light forms of regulation, and then move on to more interventionist policies. Section 6.5 concludes.

6.2 Options for policies aimed at structure and conduct of life insurance firms

Improving transparency of product characteristics

Below we will discuss policy options aimed at improving transparency of remuneration of financial advisors. However, transparency of the characteristics of the product is also important. This applies in particular to so-called unit linked policies, which account for a large and increasing share of the total market for life insurance products (see chapter 3). With unit-linked

policies, the pay-out depends (at least partly) on the returns on a portfolio that is invested in stocks and bonds with uncertain yields. Because of this inherent uncertainty, consumers cannot base their choice of firm or product on a comparison of the actual returns on different unit linked products. Rather, consumers (or their financial advisors) base their choices on information provided by insurance firms in the Initial Disclosure Document (in Dutch: Financiële Bijsluiter), and on hypothetical calculations provided by insurance firms based on assumptions about future returns on the underlying portfolio and on investment costs (fees, commissions, profits - all expenses that are not invested in the underlying portfolio). Such calculations may enhance the comparability of different products and thus help consumers in choosing between different firms and products. However, a recent evaluation of the IDD by the financial services authority (AFM) has indicated that consumers often find the information in the IDD too long and too complicated. Also, the information in the IDD is not always comparable due to reporting differences across providers. Therefore, the new law on financial intermediation (WFD) and the so-called Besluit Financiële Dienstverlening based on this law include a number of modifications to the IDD. It will be important to evaluate whether these modifications do indeed result in greater transparency.

In will also be important to evaluate whether the modified IDD will allow consumers, financial advisors or other parties (e.g. the financial services authority (AFM), consumer organisations, comparison websites) to check whether the hypothetical calculations of future pay-outs are correct, given the underlying assumptions. In the past, before the recent introduction of the IDD for unit linked insurance products, this seems not to have been the case, as a recent incident illustrates. In the summer of 2005 a large Dutch insurance firm found out that it had presented incorrect calculations on expected pay-outs to consumers. The calculations presented to consumers suggested a higher pay-out than was justified on the basis of the underlying assumptions. Although the firm reported this mistake voluntarily, and promised to compensate consumers, this incident points to the desirability of transparency of investment costs.

Monitoring firm behaviour

Currently a unit within the Dutch competition authority (NMa) specialises in monitoring the financial sector, including life insurance. The presence of such a unit will have a preventive effect on the competitive behaviour of life insurance firms. Knowing that the competition authority is watching you might deter firms from colluding on prices or market shares. The analysis in this report has indicated there is weak competition in parts of the life-insurance market. Therefore, special attention from the competition authority is indeed warranted. Apart from the empirical findings summarised in the introduction to this chapter, there are also some institutional features which are not conducive to competition. Most notably, life insurance firms are allowed to cooperate in drawing up life tables and for standardisation of policy conditions. These tasks require frequent interaction between the staff of different life insurance firms in

order to exchange information. It is a well-established insight in the economic analysis of competition, that frequent interaction may facilitate coordinated anti-competitive behaviour.

Reducing reputational barriers to competition for life insurance firms

In chapter 3, we presented a description of the horizontal market structure of life insurance, i.e. the number of firms and the distribution of market share. The level of concentration in this market can be characterised as intermediate, so there is no immediate concern that the number of players in this market poses a risk to competition. However, we also pointed out that small and/or new firms may find it hard to compete with large and incumbent firms if consumers (or their financial advisors) base their choice of firm on the reputation of the firm. In that case, the moderate level of concentration does not guarantee a satisfactory level of competition between life insurance firms. Survey evidence reported in chapter 5 indicates that consumers attach some value to reputation: when asked about rank the importance of reputation in choosing a firm on a scale of 1 to 7, the average answer was 5.

A possible policy option is setting up a scheme like deposit insurance in banking, where consumers will not lose their money in case of bankruptcy of the bank (up to a maximum of € 20,000 per account). Although a kind of safety net has been introduced in life insurance, the Dutch central bank has indicated that the funds available in case of need may be insufficient (again see chapter 3). This suggests that an improved safety net could stimulate competition in life insurance by reducing the importance of reputation. However, this policy option must be balanced against the possibility that a safety net may lead to a moral hazard problem: consumers may be willing to choose less prudent firms if these promise higher returns in the expectation that they will be bailed out in case of bankruptcy.

6.3   Policy options aimed at financial advisors

Supervision aimed at improving the quality of financial advice

The already mentioned new law on financial intermediation (WFD) includes a number of provisions aimed at improving the quality of financial advice. To this end the law includes requirements with respect to the expertise that is required of financial advisors. Furthermore, the actual advice of financial advisors will be monitored by the Financial Market Authority (AFM). One way in which the AFM is planning to perform this new task is by developing risk indicators that point to potential misselling. For example, the share of high-risk products in the total volume of products sold might be a risk indicator. A high value of this indicator for a particular financial advisor might provoke closer scrutiny by the AFM.

Introducing a certificate for independent advisors

The WFD does not restrict in any way the use of the label 'independent' by financial advisors. Thus, advisors will continue to be able to present themselves as independent, irrespective of the number of firms they work for, the way in which they are remunerated or the financial ties between with financial firms whose products the advisor is selling. As a consequence, sophisticated consumers will not attach much value to the label 'independent', while naive consumers may be misled into thinking that they are dealing with a truly independent advisor when in fact they are not. In order to increase the informational content of the label independent, a certificate of independence could be introduced which lays down certain minimum requirements, such as the number of different firms to be included in the comparison on which the advice is based, the absence of financial ties other than commission, the obligation to keep records of the advice process for at least a certain period etc.

A policy option that goes one step further would be to reserve the label 'independent' for advisors who are purely paid by consumers on the basis of fees per hour of advice.

Improving transparency of remuneration

The evidence presented in chapter 5 indicates that about 60% of all consumers in our sample does not know how financial advisors are being remunerated. Moreover, consumers who are aware of the fact that financial advisors are usually being paid on the basis of commission, are much less likely than other consumers to use a financial advisor. This suggests that consumers believe that the remuneration structure creates wrong incentives. Here we discuss how more transparency could lead to better market outcomes, without directly intervening in contract terms. In the next subsection we discuss policy options aimed at modifying the remuneration structure trough regulation of contract terms in such a way that the interests of advisors and consumers are better aligned.

Policies aimed at improving transparency of remuneration do not need to start from scratch. Since the introduction of the IDD in 2001, consumers have access to information about the non-investment costs of financial products (i.e. the share of the total amount they have to pay that is not invested on their behalf). However, this information is usually provided late in the advise process, namely after the advisor has put together an offer for a specific policy. This limits the scope for comparing the costs of different products and different firms.

This suggests that there are two ways in which transparency of remuneration could be improved further. The first concerns the timing at which the information is presented to consumers, the second concerns the amount of information presented to consumers. Preferably, consumers should have insight into the remuneration of the advisor early in the advice process, well before choosing a specific firm/product combination.

With respect to the amount of information, assessing whether the level of remuneration is reasonable would be easier if consumers had some benchmark with which to compare the remuneration received by their advisor. An interesting option in this regard is the approach

recently introduced in the UK, where advisors must show their customers the market average of the costs of advice for similar products (see box). Although there are obviously some regulatory cost involved in preparing these market averages, the benefits in terms of helping consumers and disciplining advisors could be large. This can only be ascertained if this policy option is accompanied by a well designed policy evaluation effort.

With respect to the amount of information made available to consumers, a relevant issue is whether to require only disclosure of the size of the commission, both the size of the commission *and* the size of other non-investment costs, or the total of these two. In the UK, the FSA has opted for the first option on the grounds that differences in commission are the source of possible commission bias. However, for consumers it is also relevant to know what share of his payment will actually be invested on his or her behalf, and this requires insight in all non-investment costs, including cost accruing to the insurance firm.

Finally, it is sometimes suggested that an obligation for advisors to disclose the commission they receive would lead to an unlevel playing field. The reasoning is that life insurance firms selling directly to consumers through salaried employees are able to use various incentive schemes other than commission, which may have the same effect but which are unknown to consumers. For example, employees may receive bonuses or be promoted on the basis of sales. If similar high powered incentives would not be allowed in contracts between insurance firms and financial advisors, then the latter would be put at a disadvantage, so the reasoning goes. However, this argument misses the point that financial advisors present themselves as independent while obviously life insurance firms represent themselves. Consumers seem to take this into account. Our finding in chapter 5 indicate that those consumers who buy directly from life insurance firms shop around much more frequently than consumers who buy through financial advisors.

Better aligning the interests of consumers and financial advisors

Apart from improving transparency, policymakers may also regulate the terms of the contracts between life insurance firms and financial advisors. By excluding certain types of contract conditions, it may be possible to better align the interests of consumers and advisors. The UK experience is once more relevant in this connection. As already indicated (see box), volume contracts are explicitly forbidden. In addition, financial advisors are not allowed to take out loans from banks or life insurance firms for which they sell financial products.

Finally, presents, holiday trips, or bonuses from insurance firms to advisors are not allowed. Although the effects of these measures on the quality of advice are hard to predict, better aligning the interests of consumers and advisors would be expected to improve this quality. One may argue that such measures are needed as complements to increased transparency of remuneration. Otherwise, non-commission incentives could substitute for commission based

incentives. Transparency of commission would then convey incomplete and possibly misleading information to consumers about the incentives facing advisors.

Regulating financial advice: the new UK-approach

The Financial Services Authority (FSA) in the UK has recently (December 2004) introduced new rules with respect to financial advice. Before an advisor begins the process of advice, he must present his customer with an Initial Disclosure Document (IDD). The IDD explains which providers the advisor uses, informs the consumer that he may ask for a list containing the providers' names, states whether the consumer receives advice or has to decide by himself, mentions the firm's responsible regulator and discloses ownership of product providers (if a provider owns more than 10% in the distributor) . The IDD will also offer the menu card. The menu is an additional disclosure document that all advisors must give to their customers together with the IDD. The menu provides an indication of the cost of advice of the distributor. It shows the payment options (fee, commission or a combination of both) and the maximum fee or commission amount that can be charged on a product. If the firm offers its customers the option of paying by commission, then the menu will also include market average estimates of commissions on different product groups (pensions, annuities, etc.) in the packaged products market. These market averages will be prepared by the FSA with the intention to provide a market benchmark of commissions and to ease comparison of cost of advice between different distributors. The menu will be used by all distribution channels in order to ensure a level playing field. Complementary regulation forbids indirect benefits (such as a free trip, expensive wine) to all agents except single-tied agents. Volume overrides (i.e., bonuses for advisors selling more than a certain volume of a given firm) are also forbidden.

The FSA has conducted a cost benefit analysis of the new depolarisation regime with the following results. The one-time compliance costs of all firms to implement and comply with the new rules are estimated to be 40 million pounds. The ongoing compliance cost per year is estimated to be 22 million pounds.

Some indirect costs may be that consumers will focus only on the cost of advice (commission or fee amounts) and ignore other factors (such as product charges). Increased competitive pressure as a result of the menu introduction may have several adverse impacts. First, firms may stop distributing good value products if they are expensive to sell. Second, entry barriers may increase as new providers or products would have to pay higher commissions in order to motivate advisors to consider the product in their range. Third, product providers may produce products with lower commissions but not necessarily lower charges. Finally, the market commission averages stated in the menu may facilitate collusion between firms on cost of advice, so that commissions may end up around the market average values.

Possible benefits are increased consumer awareness of cost of advice and commission bias leading to less misselling of products. Increased awareness may increase consumer bargaining power and negotiations with advisors. This may result in cost of advice being closer to its true cost and more commission rebating. Firms may prefer not to sell high commission products as it may make them appear less competitive and they would have to explain why they have high commissions. This should result in both downward pressure on commissions and less bad value products sold.

All in all, the FSA concluded that if the new rules along with the IDD and the menu are successful in increasing consumer awareness of prices, encouraging shopping around and reducing commission bias then the benefits could outweigh the costs.

Source: Chorny (2005)

Prohibiting commission-based advice[54]

A legal prohibition of commission-based advice will eliminate advice bias. In addition, since consumers will determine the amount of fees they are willing to pay to advisors, the price of advice may move closer towards advice's true cost and value. However, the fact that consumers will determine how much to pay is one of the problems with forbidding commissions. Currently, consumers have little information about advisors' workings and the process of advice itself. Therefore, consumers may not know what is the actual service that they receive from advisors and as a result how much they value this service. Indeed, the FSA (2002) conducted consumer surveys in the UK, indicating that consumers are willing to pay less for financial advice than for other professional advice (accounting etc.). It may be the case that consumers are willing to pay such small fees that it would be uneconomical for advisors to continue working. Thus, the fee-based advice market may unravel because consumers have a lack of information, not because they do not need advisors.

Moreover, an important advantage of commission-based advisors is that their advice is free until a product is purchased. Hence it is cheaper to compare between commission-based advisors relative to comparing fee-based advisors (which must be paid for each consultation). All in all, commission-based advisors may serve as a competitive pressure on other commission- and fee-based advisors. Thus, the costs of government intervention by forbidding commissions may well be higher than its benefits.

6.4   Policy options aimed at consumers

Improving consumer awareness of the need to shop around

The evidence presented in chapter 5 indicates that consumers often fail to compare offers from different financial advisors. This obviously reduces competition between advisors. A higher level of consumer awareness that shopping around pays stimulates competition between financial advisors and, indirectly, also between insurers. However, it is not clear that there is a role for government policy here. The internet is making it easier for consumers to shop around, and evidence from the US indicates that this has resulted in reduced prices for life insurance products (Brown and Goolsbee, 2002). In addition, the main Dutch consumer organisation, the Consumentenbond, publishes regular comparisons and in-depth analyses that clearly indicate the high potential rewards from shopping around. Although publications from the Consumentenbond are not for free (an annual subscription to the *Consumentengeldgids (Consumer money guide)* costs 37 euro), this does not seem to create a serious hurdle for the middle and higher income earners who are the typical buyers of these financial products. On the other hand, if many more consumers would use the information published in the

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[54] This section is based on Chorny (2005).

Consumentengeldgids if this were available at much lower prices (or even for free through the internet) then there might be a case for subsidising the provision of this kind of information. This could be tested in a policy-experiment in which subsidies for the provision of information are made available for a limited period (say a year).

Facilitating consumer search by standardising financial products

One reason why consumers take recourse to financial advice is that they perceive financial products as complex products. One may ask whether it is possible to reduce this complexity by standardisation of products. Such standardisation has been attempted in the UK with the introduction of so-called stakeholder products. Stakeholder products are standard savings, pension and insurance products defined by the government in such a way that these products would suit most consumers. Firms are still free to offer non-stakeholder products. Also, the advice process for stakeholder products is closely regulated, with detailed guidelines for the way advice must be given (FSA, 2004). For example, firms must keep a record of each recommendation to purchase a stakeholder product for 6 years. The implicit assumptions in introducing these products are, first, that more complicated products are often unnecessary for most customers, and second, that the public will be confident that these regulated products satisfy their needs better than other products. Except for stakeholder pensions, it is too early to judge whether these assumptions are justified. Stakeholder pensions have not been a great success in the UK, but this is often attributed to the fact that the government regulated the maximum fee that could be charged for stakeholder products. It has been argued that this maximum was set at a level that was too low to make these products attractive for advisors to offer.

The stakeholder approach can be summarised as "standardisation light" (since firms were still free to offer non-stakeholder products). There is at least one example from other markets were such a policy seems to work, namely the Norwegian energy market. Since 1998, the Norwegian Competition Authorities publishes price comparisons for a number of standard contracts (currently four) in an easy-to-understand format. A consumer survey by Norsk Gallup in 2003 indicated that 25% of all consumers use this website and that the information on the website is seen as very reliable (Norwegian Competition Authority (2003), p. 18).

Reducing switching costs

As pointed out in chapter 2, front loading of costs leads to consumer lock-in. Once a contract has been signed, switching to another product or another firm is very expensive. Reducing switching costs by disallowing front loading and replacing this by a system of annual commissions, would give consumers the option to switch to another product and/or another firm. For the consumer this has the advantage of being able to correct mistakes (wrong product, wrong provider, wrong advisor). Moreover, lower switching costs may discipline advisors since they risk loosing dissatisfied consumers and the associated stream of commissions. However,

reducing switching costs also has a possible disadvantage. As argued by Hendel and Lizzeri (2003), '[l]ack of consumer commitment can generate inefficiencies in insurance markets because short-term contracts do not offer insurance against reclassification risk: bad news about the health status of a consumer resulting in increased premiums.' (p. 299). This possible disadvantage must be traded off against the advantages of reduced switching costs. Recently the Dutch government has decided to impose a maximum on front loading of 50% of the total commission received. This decision can be seen as a compromise between the advantages and disadvantages of reducing switching costs in this market.

6.5   Concluding remarks

The analysis in the previous chapters provides points to a need for policy measures aimed at improving competition in the market for life insurance, including the market for financial advice. Some of these policies are already being implemented in recent policy initiatives. Only if these policies fail to lead to substantially better results, more interventionist types of regulation could be introduced (preferably following an ex ante cost-benefit analysis of these policies). This points to a need for a careful evaluation of the various policy initiatives.

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