Pensionfriend

The debacle of Rürup and Riester and what to do about it

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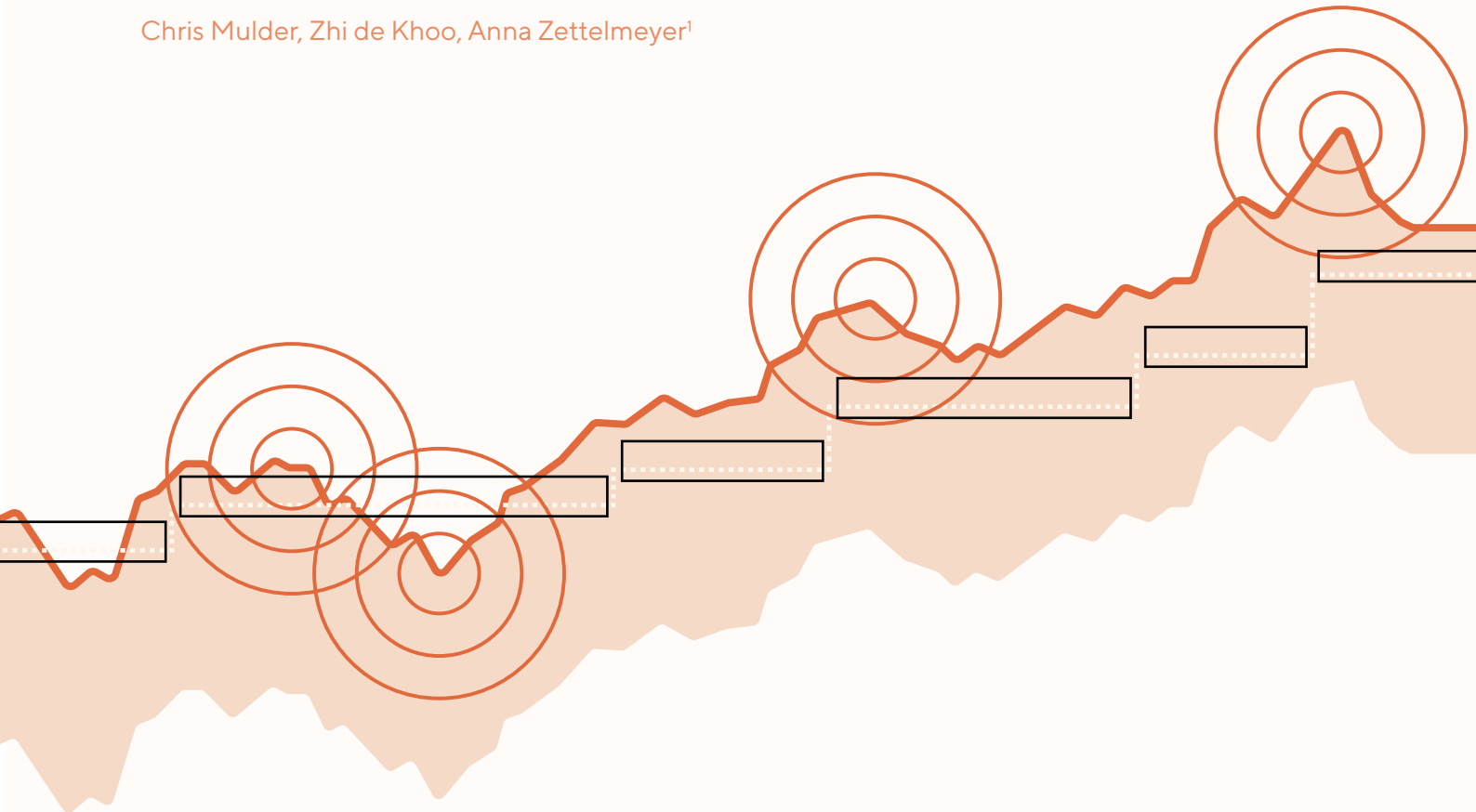
Chris Mulder, Zhi de Khoo, Anna Zettelmeyer[1]



1: Dr. Chris Mulder holds a PhD from the London School of economics. Relevant experience for this study: He was tasked with modelling and reviewing the social security systems when at the Dutch Ministry of Finance and was head of the World Bank's program to advise public pension funds and central banks on how to invest their assets. He spent most of his career at the IMF.
Zhi de Khoo is a PhD candidate in Statistics from University of Malaya and a Quantitative Analyst at Hypofriend.
Anna Zettelmeyer is an intern at Hypofriend and will start her studies at Harvard University in August 2022.
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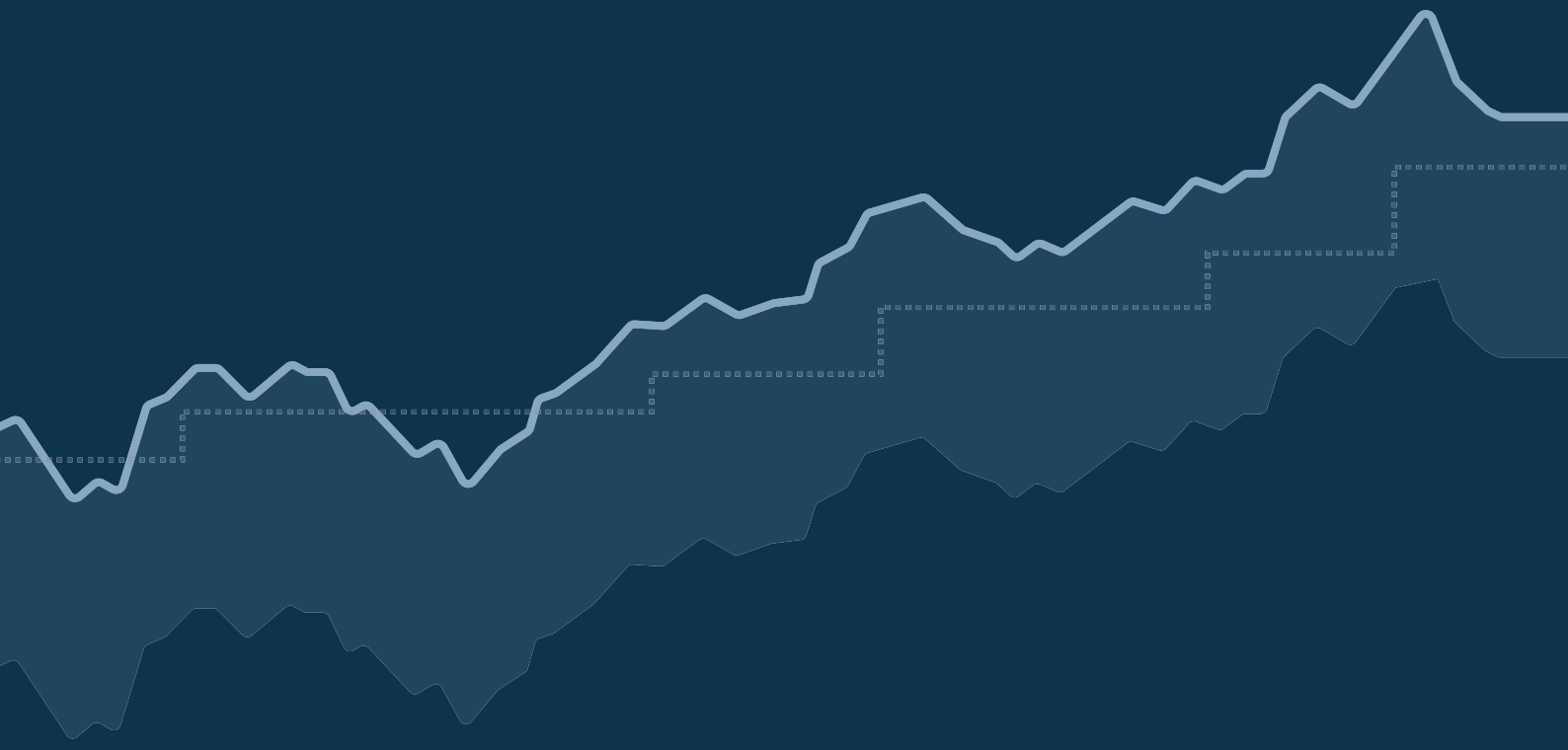
Abstract

In this paper we demonstrate the strikingly low yield of the current Rürup and Riester pension plans and the potential benefits of a redesign of these parts of the German pension system. The main causes for such low returns within the existing system are the high costs of insurance companies, and the forced investment in near-zero interest rate bonds or similar guaranteed return instruments during the pay-out phase and, for Riester, in the pay-in phase. In addition, the system leads to the "backwardation" of pensions: very low initial pensions combined with the uncertain prospect of higher pensions later in retirement. We show that where the current system can be expected to yield a pension of 80 € per month, alternatives can yield on the order of 600 € per month, even assuming the historic worst case of stock returns and a life expectancy of 97, 10 years beyond the current average. The fundamental fallacy in the design of the system is the notion that bonds are safe and stocks are not. In the long run the exact opposite holds true: bonds are very unsafe as they return about zero in nominal terms and do not protect against inflation, while a well diversified basket of stocks yields a much higher expected minimum in the long run and protects against inflation.



About 2,4 million[2] people in Germany have Rürup and some 16,2 million have Riester pension contracts (2021)[3] that are intended to supplement a deteriorating official statutory pension. Unfortunately, the well-intended set up of this system is quite disastrous, especially in a low interest environment, and in need of a thorough redesign.

We have conducted a comprehensive study of these products and created a calculator to assess their value for all kinds of users, covering both the pay-in and pay-out phases.[4] Our research team spent about 2-3 months building this calculator. In many cases we find negative nominal returns, despite government support and decades of investment. We have delved deep into the precise causes of the low return and have reviewed alternative solutions.

A negative return means that contributors might as well put their money in a bank at zero interest. A low or negative return also means that government spending on these programs is not only wasted on unnecessary costs but promotes investments with a low long-term return instead of diversified stock investments, and thereby undermines the goal of a sound retirement.

We find that inflation worsens this situation, particularly for savings products billed as "safe". Inflation can result in pensions having 30% less purchasing power than the contributions made for a typical saver with a Rürup contract. People that choose contracts with a safe (bonds oriented) investment strategy may suffer worse returns (a drop of -46% in the nominal after tax value of their pensions) compared to a more balanced investment approach. Also for people starting to build a pension at an older age and those using high cost providers, results are substantially worse.

Reasons for the poor performance

The underlying reason that these outcomes are now so poor is that interest rates on high quality government bonds have fallen to about zero. As a result, the costs of these products play a relatively much larger role and policies that de facto force investment in bonds have far more serious repercussions.

Rürup and Riester products offer pronouncedly low net returns, especially in a low interest rate environment because:

1. The median effective annual fees charged for Riester contracts is 1,7% and for Rürup 3%.[5] In contrast, fees for direct investment in ETFs of large stock indices are as low as 0,06-0,2%.
2. The products require investment in low-yielding bonds:
    a. Government policies, with the intent to guarantee the pension level, induce near 100% investment in bonds, during the +/- 20 year pay-out phase.[6]
    b. Riester requires that, at a minimum, the sum of paid in amounts is available at the end of the pay-in phase, limiting the investment in this phase to products (i.e. bonds) that are perversely guaranteed to yield low returns.[7]

In addition, these products suffer from what we call backwardation (for a lack of a better term) as well as nontransparent costs in the pay-out phase. Governments require actuaries and life insurance companies to play it very safe, to ensure that there is enough money to honour pension contracts even if

2: Die Deutschen Versicherer "Die Deutsche Lebensversicherung in Zahlen 2021" annual report
3: Bundesministerium für Arbeit und Soziales "Statistik zur Privaten Altersvorsorge (Riester Rente)"
4: Note that we could not find publicly available calculators on the taxation of both income and pensions, and certainly not including the effective cost of Riester/Rürup or return options. The platforms for professional advisors that we have access to, also do not carry such calculators.
5: https://www.versicherungsbote.de/id/4904132/Riester-Rente-Kostenfaktor-straflich-vernachlassigt/ quotes the doyen of Altervorsorge.
5: Insurance companies have also found solutions with higher expected returns than bonds. The problems with these products is that they rely on option arbitrage strategies (buying annual puts and selling monthly out of the money calls) that over time may stop working. We show that these strategies for historical stock prices of the Stoxx50 yield a barely positive nominal return of about 1% after cost. [add reference to article]
7: As it is now impossible to honor such guarantees for new clients unless the insurance companies provide their own capital or the buffers of other clients as a risk cushion, insurance companies have stopped promoting such products.

longevity is substantially higher than expected. This leads to very low initial pensions, at least until people in the cohort start to die earlier than the assumptions made. In the meantime, poor or no investment returns in conjunction with fees reduce the balance.

The combination of this backwardation and low return investments in retirement implies an enormous drag on the benefit of these products: The average guaranteed pension requires a saver to become 102 years old to recoup the nominal amount saved up during the pay-in phase, when the average life expectancy is 87![8]

At the same time, the upside of backwardation (how much initially low pensions might rise over time) is impossible to assess for an individual saver, as a saver cannot assess the life expectancy of all those insured by a particular insurance company, and the costs charged by these companies in the pay-out phase are not reported.

Awareness

At face value, Rürup and Riester are good systems; both provide a lifelong pension. Rürup, while targeted at the self-employed, can be used by anyone up to an overall maximum to supplement their pension. Rürup contributions can be substantial at a maximum of 25.638,60 € annually. Riester is much smaller–a maximum of 2100 € is tax deductible–but more widely used and can in part (30%) be withdrawn as a lump sum.

The most common drawback noted in the top websites discussing Rürup pensions is that they are inflexible: Rürup cannot be paid out early or inherited (see annex Table 4 for a survey of arguments used by the top five websites). This argument is unconvincing, however, as this is precisely what pensions are meant to be. In contrast, the websites do not seem to recognize that the costs of Rürup may add up to defeat its purpose. Many websites do not even mention cost as an issue, instead focusing on tax benefits.

Interestingly, the most common theme regarding Riester is the cost (see annex Table 5), despite these being on average much lower than for Rürup. Most warnings are in the form of "paying attention to". Warnings about the problem of backwardation and lack of return during the retirement phase are basically absent for both products.

Assumptions and complexities

In order to assess the outcomes, our calculations include the following layers of complexity:

1. The highly non-linear German income taxation, which we have modelled in line with official guidance by the Federal Ministry of Finance (MoF).
2. The taxation of pensions, which depends on the years in which a person pays in and is paid out and their age at the time. See for example this wikipedia article.
3. The range of "effective" cost of all companies offering Riester/Rürup products using the standard Musterblatt, legally mandated in 2017.[9] Note that this cost indicator only covers the **pay-in** phase. Information about cost in the pay-

8: At the median Guaranteed Rentenfaktor of 23,5 every 10.000 € in pension yields an annual pension of 12*23,5= 281 €. At age 87 (average life expectancy of a 37 year old) you would collect 56% of the nominal amount built up. Consider that the expected stock market return of 6-7% would yield a pension of 600-700 € ad infinity.
9: We use the Bundeszentralamt für Steuern as the source for all the Musterblätter.

out phase is absent.[10] In the absence of data to construct a weighted average, we focus on the average cost and on the industry leader Allianz, which has an overall insurance market share of about 40%.

4. We use life expectancy estimations for the general population (see WHO 2019)[11] to assess the benefits of the products. These data imply that someone who reaches the age of 67 should expect to live another 20 years, i.e. to 87 years.
5. We use the guaranteed Rentenfaktor that insurance companies are required to report to help users assess the value of pensions offered in the pay-out phase. This is defined as the minimum amount paid out per month during retirement for every 10.000 € accumulated at the start of retirement. Note that the contracts or Musterblätter/Produktinformationsblätter do not report the actual Rentenfaktor or how it has evolved over time in relation to the guarantee, nor do they show how to evaluate the amount one may realistically receive. This is what we call the 'black box'. We augment the guaranteed Rentenfaktor using industry data on the actualRentenfaktor to account for possible additional benefits.[12]
6. Returns on investments and the risks of these returns are critical for the outcomes. Here we rely on the over 150 years of data on the S&P 500, which is by far the longest available time series and one of the broadest indices.[13]
7. We also show the impact of inflation as this is critical for purchasing power in old age–this is not shown in the contracts or Musterblätter.

	Rürup	Riester
Number of providers	44	44
Median cost	3,02%	1,66%
High cost	4,55%	2,48%
Low cost	0,71%	0,88%
Average cost	2,85%	1,67%
Industry leader	2,21%	1,50%

Table 1. Effective Costs for All Available Rürup and Riester Contracts

Alternatives

Using our calculator we are also able to illustrate the magnitude of the impact of alternative investment strategies. This section previews some of the key insights.

Consider as the baseline an individual who, in line with the standard Musterblatt example, saves 100 € per month over 30 years (from 37 to 67) at a zero return (a pure cash accumulation). At the end of this pay-in period, the individual has savings of 36.000 €. If the individual retires, lives for 20 years (from 67 to 87) and draws down the savings in equal monthly amounts, she will have a pension of 150 € per month.

Now contrast this with two alternative investment strategies.

10: While nearly all companies assume the maximum fee, a few use the minimum cost of their range of investment options, making comparisons hard. When reporting the industry leader or a specific high cost provider we use the underlying cost factors as reported in the Musterblätt to calculate the costs. Note that these Musterblatter are inadequate for users to assess the attractiveness of offerenings. The providers do not provide insight into the likely return and the risk of the return in a quantitative sense. In the contracts they do, but in a clearly insufficient manner (e.g. return over the last 1, 3 and 5 years when portfolios should be invested over decades and risks and returns assessed over such time horizons).

11: This corresponds to Basistafel 1. Ordnung Aggregattafel of the 134 page DAV guideline.

12: The actual Rentenfaktor may reflect that in the past insurance companies had wider margins and could invest better, or that life expectancy estimates were too high.

13: We als reviewed MSCI, and DAX data. But clearly these data sets have significant limitations and are available for much shorter periods, creating sample bias. The +150 year S&P data have many advantages including stretching different monetary regimes, but still having overall inflation in the range of the current ECB and FED targets, and encompassing periods of major upheaval, including eg the Spanish flu, Corona, 2 World Wars, the great Depression, and the break up of Bretton Woods.

First, a Rürup pension. When invested at the guaranteed minimum return and the cost of the provider with the largest market share, this would result in a pension of just 81 € per month under the current regime. This could be increased by choosing an equity-based investment strategy and a lower cost provider. When invested at a return of 6% per annum with the lowest cost provider, the pension would amount to 265 € per month. We interpret this as the best possible outcome under the Rürup regime.

Compare this with an alternative approach where assets are invested throughout the retirement phase as well. As a starting point, assume the same approach as in the benchmark, except that the investment is in a zero-cost ETF returning 6% during both the pay-in phase (37-67) and the pay-out phase (67-87). In this case, the monthly pension would amount to 731 € – more than 2.5 times the maximum under Rürup. Of course, there is a catch: if the individual lives beyond 87, she would not receive any pension under the alternative strategy, while she would still be receiving a pension under Rürup. However, even (assuming a life expectancy of 97 (i.e. a constant monthly pension until the individual reaches 97), and the worst historic investment returns over 45 years (5,93%), the retirement pay-out would be 596 € per month.

Furthermore, the residual individual longevity risk (i.e. the risk that the individual may live beyond 97) could be addressed by pooling all savers. Because the average life expectancy is 87 rather than 97, the fund pooling these savings could guarantee each individual saver contributing 100 € for 30 years (and agreeing to keeping her funds invested during the pay-out phase) a life-long pension of 596 € per month and still make a substantial profit in expectation.

This is a multiple of what is offered in the current system. This is the cost of the fallacy of choosing the certainty of bonds and backwardation over stocks and public pooling of life expectancy risk.

With the current average pension for men in western Germany being 1210 €, and for women only 730 € per month,1 these alternative solutions can make all the difference.

	Monthly retirement income after paying in 100 per month for 30 years:
Current Rürup solutions:	
Cost of largest market share provider (guaranteed return, 0,25%)	81,06 €
Lowest cost provider (guaranteed return, 0,25%)	100,35 €
Cost of largest market share provider (6% ETF return during pay-in phase)	199,14 €
Lowest cost provider (6% ETF return during pay-in phase)	264,71 €
Alternative solutions (with pooling to pay until age 87):	
Zero cost benchmark (zero return during pay-in, payout until 87)	150 €
Zero cost benchmark (6% ETF return pay-in phase, no backwardation, until 87))	419,01 €
Idem (6% ETF return in retirement)	730,62 €
Idem throughout worst historic return over 35 years (5,56%)	535,16 €
Zero cost benchmark (ETF return pay-in phase, no backwardation, until age 97, ETF return in retirement)	608,81 €
dem throughout worst historic return over 45 years (5,93%)	596,47 €

Table 2. The Impact of Alternative Solutions on the Monthly Pension 1/ (1/ The amounts in this table are before tax.)

Outline: In the remainder of this article we first compute, in line with the standard Musterblatt, the Rürup pension for the prototype customer (with an age of 37, 30 years until retirement and 100 € monthly contribution with an average income) assuming a return of 4.5% per annum. This is the return of what traditionally would be a balanced long-term portfolio.[14] We then show the impact of different assumptions, such as low returns, inflation, lower income, higher contributions, the impact of choosing the dominant provider or a high cost provider etc. We repeat this exercise for Riester pensions. We then discuss alternative solutions that would raise the value of these pensions, plus additional proposals to increase the transparency and understanding of German pensions in general.

The Return on Rürup pensions at a glance

Figure 1 shows the contributions and nominal Rürup pension for our 37 year old, saving 100 € per month, earning 4000 € gross, taking a pension at 67, with the average life expectancy of 87[15], using the fee structure of the industry leader and by far the largest provider.[16]

The results are presented in waterfall format. From left to right: The individual contributes 29.977 €. To this, a tax benefit of over 6.000 € and an investment return of over 30.000 € are added, resulting in a

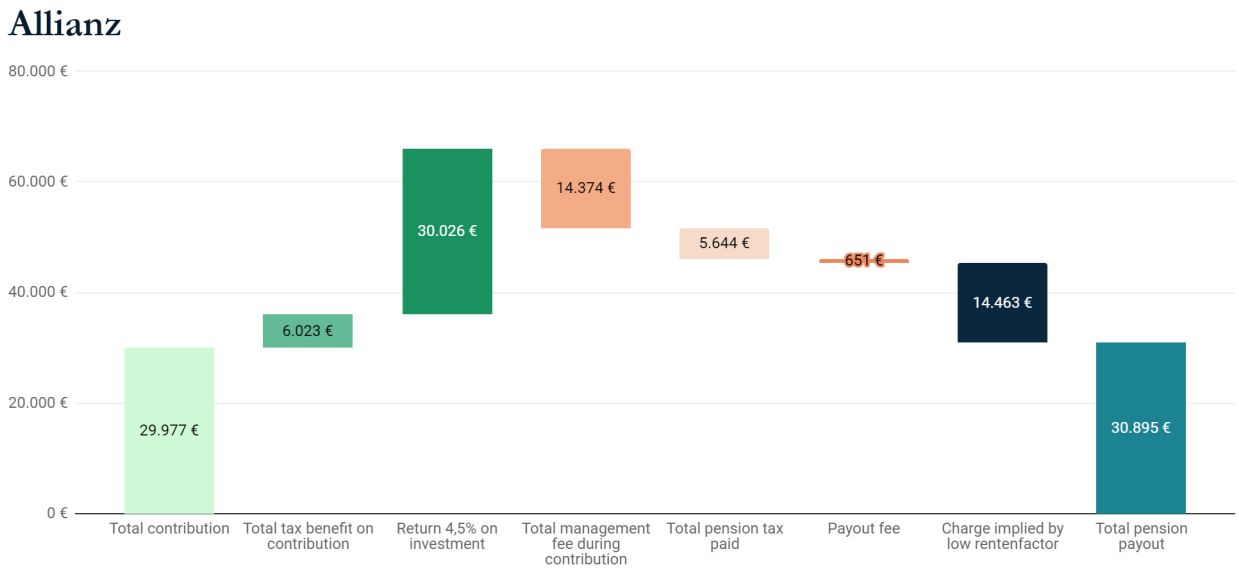


Figure 1. Rürup: Our High Return Base Case as a Waterfall Graph

14: 60% stocks yielding about 7-8% (based on historic data and consistency with GDP growth) and 40% bonds with a zero to 1% return; or a more aggressive mix of 75% stocks and 25% bonds but with a more conservative 6% expected yield on stocks. Note that the maximum guaranteed return over the entire history of guarantees in Germany was 4%.

15: Educated males have about the overall average life expectancy of 87. Uneducated males have lower life expectancy and for them the results are worse, while for educated females the results are slightly better as they live longer and hence can gain more benefits.

16: Allianz: product and musterblatt. Allianz has a market share of the total insurance market of over 40%.

peak of about 66.000 €. This is reduced by a hefty management fee of about 14.400 €, pension taxes (5644 €), a payout fee (650 €), and the charge implied by "backwardation" (the low Rentenfaktor), of almost 14.500 €. As a result, the final pension payout is just 30.895 € in total. In other words, the investment and tax subsidies result in over 50 years in a net nominal gain of just 982 €.

Note that in this example the Government through the tax office is a net contributor: hence the tax policies are not to blame for the low pension. The example also shows that the preoccupation with the tax benefits is misplaced; cost and the drag in retirement are far more important.

For us, the most surprising outcome of our calculations was the cost levied in the pay-out period, the "black box" in the figures. Over the expected average pay-out period of 20 years the costs are almost as high as over the 30 years of build-up.[17] For someone with a life expectancy of 87, this amounts to an effective cost of about 4,84%. In our view it is highly unlikely that an average client could possibly calculate these implicit costs. The fact that these costs are not more clearly stated is one of the main flaws of the current transparency requirements.

Providers of these products will argue that this "black box" is in reality smaller, as the guaranteed Rentenfaktor is calculated using very conservative life expectancies. In the event that people within a cohort live less long than expected, others are then paid out more.[18] But as explained in the introduction, our calculations use the estimated current ("aktueller") Rentenfaktor. If we were to use the guaranteed faktor, the black box would be significantly bigger, and the returns nearly 30% smaller. Furthermore, an individual cannot know the assumptions used by the insurance provider, and whether he/she will live longer than his/her fellow cohort members. If you grow really old, you may get a positive surprise, some extra bonus at a very old age; but not when you are 67 and want to enjoy your retirement.Therefore, while backwardation may imply a nice surprise very late in life, it is entirely impossible to base one's pension planning on the expectation that it will lead to an old-age bonus.

The remaining figures illustrate the impact of varying various assumptions underlying Figure 1. In Figures 2-4, the first and second column correspond to a higher investment return scenario, while the third and fourth column illustrate a lower return scenario. For each pair, the sum of contributions (light blue), return and tax benefit (darker blue) is shown in the left columns. The right columns decompose this sum into the management fee, the implicit charge associated with the rentenfaktor, taxes (darker blue), and payout fees, leaving the pension (light blue) as a residual. Hence, for each pair of columns, the net expected benefit to the individual corresponds to the height difference between the two light blue fields (contributions minus pension), while the net cost to the taxpayer is expressed by the difference between the two darker blue fields (tax benefits minus pension taxes).

Figure 2 shows the impact of low returns on the baseline results. The first two columns repeat the results of Figure 1, i.e. assuming a return of 4,5%. The two right columns show the massive impact of low returns (0,25%), keeping all other assumptions unchanged. Given high investment costs, when earning the currently required minimum guaranteed return of 0,25%, the representative client burns roughly half of his contributions, and the taxpayer likewise. Even if the black box would completely accrue to the insured, the results would imply significant negative returns.

17: Do note that the pay-out is based on the so-called "aktueller" or current "Rentenfaktor"and not the guaranteed. The Rentenfactor drives how much of the build up savings is paid out monthly. The median guaranteed factor in 2021 is about 23,5 while we used the current median Rentenfaktor of 29,6 rounded up to 30.

18: Legally 90% of life expectancy surpluses, [80]% of investment surpluses and 50% of cost surpluses will be distributed. We reflect this by using data on the current Rentenfaktor. Life expectancy surpluses only become clear at very high ages, and hence the sharing of these surpluses is back loaded.

In Figure 3, we illustrate the impact of higher cost, for the same return assumptions as Figure 2 (and keeping all other assumptions as in Figure 1). The high cost example is based on (one of) the highest cost and best known providers among those included in the i 'Muster - Produktinformationsblätter' shown on the website of the Bundeszentralamt für Steuern[19]. A client with such a contract would lose over 20% of their contributions (after tax) despite earning a 4,5% return over 30 years. In the case of low returns the results are really abysmal, with a loss of over 50%.

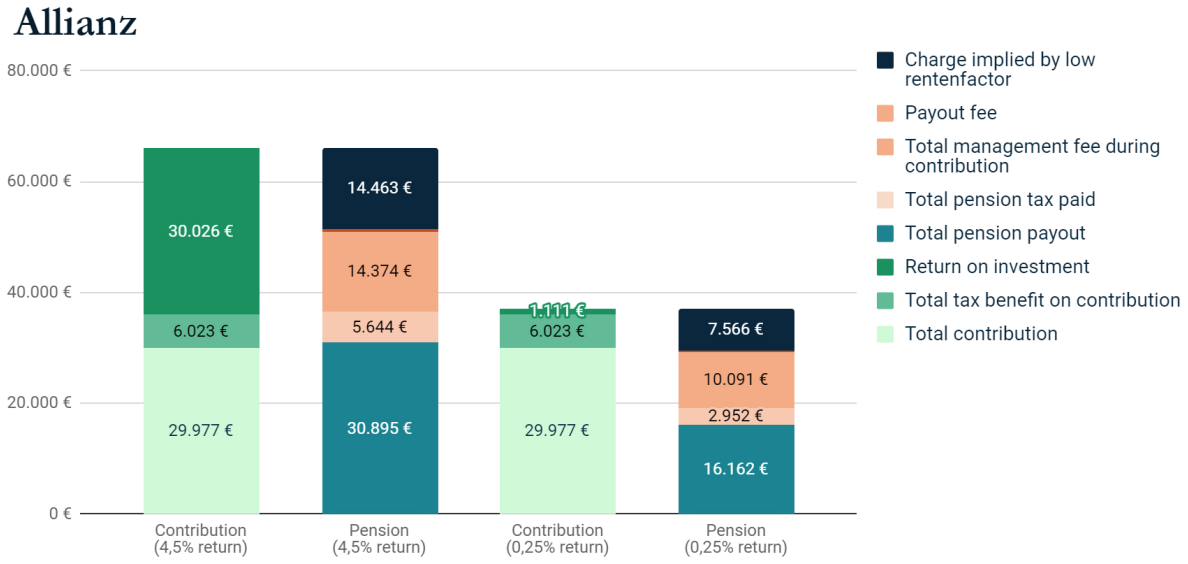


Figure 2. Rürup: High vs Minimum Guaranteed 2022 Return

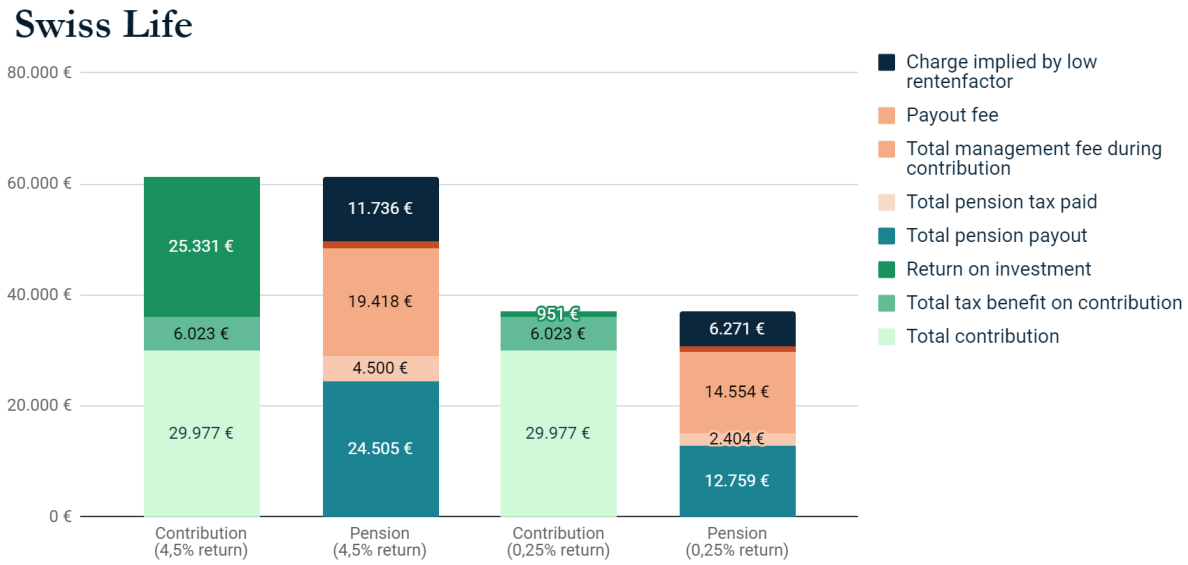


Figure 3. A HIGH Cost Provider

19: Note while this product and this rather reputed company reports effective cost as 'just' 1,62%, while the data on cost included in the musterblatt imply an effective cost in sour calculation of about 3,54%, as this company chooses to report the effective cost for there lowest cost investment product and not the highest cost. There are other companies that have cost structures that lead to similar high fees.

Figure 4 shows the impact of the ECB target inflation of 2%. All columns now show real (inflation-adjusted) values. With an 8% nominal return (just below the historic average return in the S&P 500), the representative pensioner just breaks even in real terms. The 3.5% extra return compared to the baseline return is not enough to offset inflation because the costs of the products (black box and management fee) increase with the return. With a 4,5% nominal return on investment and 2 percent inflation, the contributions (plus tax benefit) result in a reduction in purchasing power of about 30%. In other words, if a 100 € contribution would allow you to buy 100 loaves of bread, then your pension pay-out in this case allows you to buy just 70 loaves of bread.

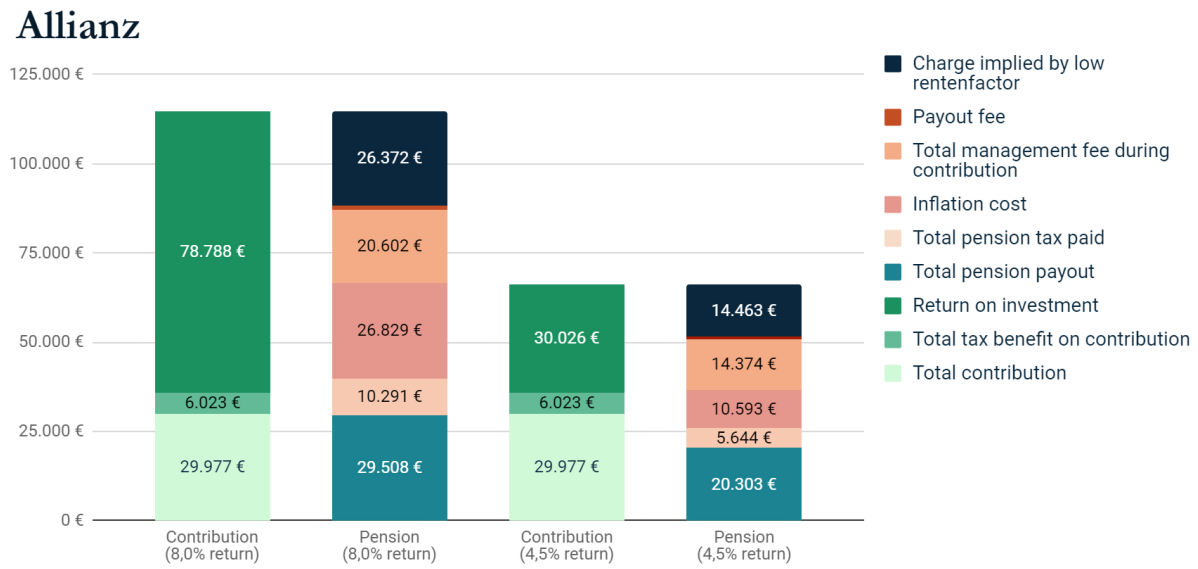


Figure 4. Inflation of 2% eroding the real pension value

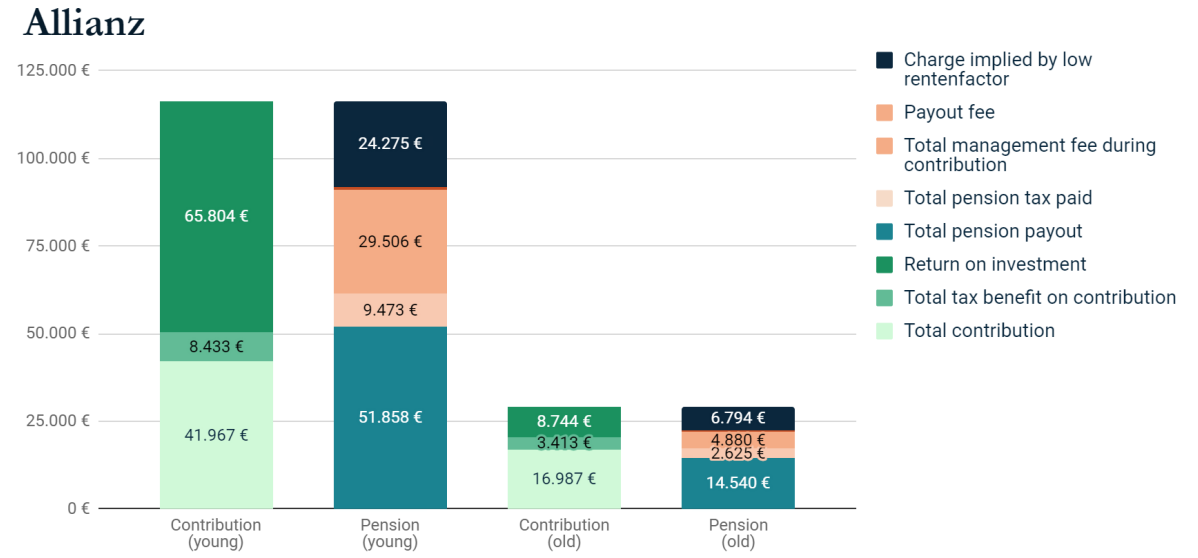


Figure 5. Young vs Old (25 vs 50 years old)

Figures 5 and 6 show how the results are affected by the length of the pay-in period and the level of income, assuming a baseline 4,5% return.

Younger people stand to gain somewhat more from Rürup as the investment has a longer build-up period. The return worsens considerably, however, for older people that conclude Rürup contracts. The reason is that while the costs in the pay-in phase are relatively small, the loss attributable to the Rentenfaktor is relatively large after a short pay-in period.

Many advisory websites stress that Rürup is a good product for high income earners. Figure 6 confirms that high income earners indeed do slightly better, but the improvement is very small, and does not warrant recommending Rürup.

The Return on Riester pensions at a glance

As the following figures show, the returns on Riester pensions are potentially much better than those for Rürup. This is mostly the consequence of quite considerable government subsidies. In addition, the Riester product is potentially less costly as people can take out 30% as a lump sum, thereby avoiding some of the post retirement "black box" costs.

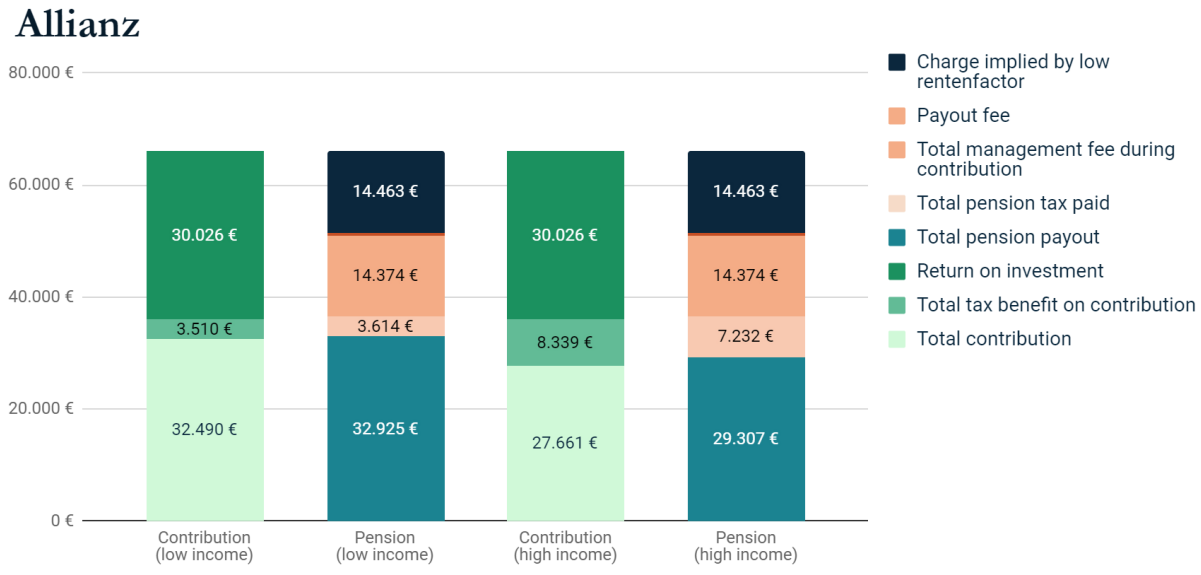


Figure 6. High vs Low Income (2500 € vs 6000 € monthly income)

Figure 7a focuses on the impact of the investment return on the Riester pensions. It shows:

- That with a substantive investment return of 4,5% a typical Riester contract will yield a total positive return of about 60%. Without costs the return could be about 100%.[20]
- However, when returns on the investment are low, as for example with the 2022 guaranteed return of 0,25%, a Riester contract for our Muster (example) candidate (without child) is so bad that even the massive government subsidies cannot prevent the saver from losing a fair share of her contributions. These contracts guarantee the repayment of the contributions and subsidies at the moment of retirement, which implies that insurance companies need to lower their fees, shown in dark red, to less than zero. As a result these products are barely marketed or promoted by insurance companies and the stock is therefore stagnant–see below.

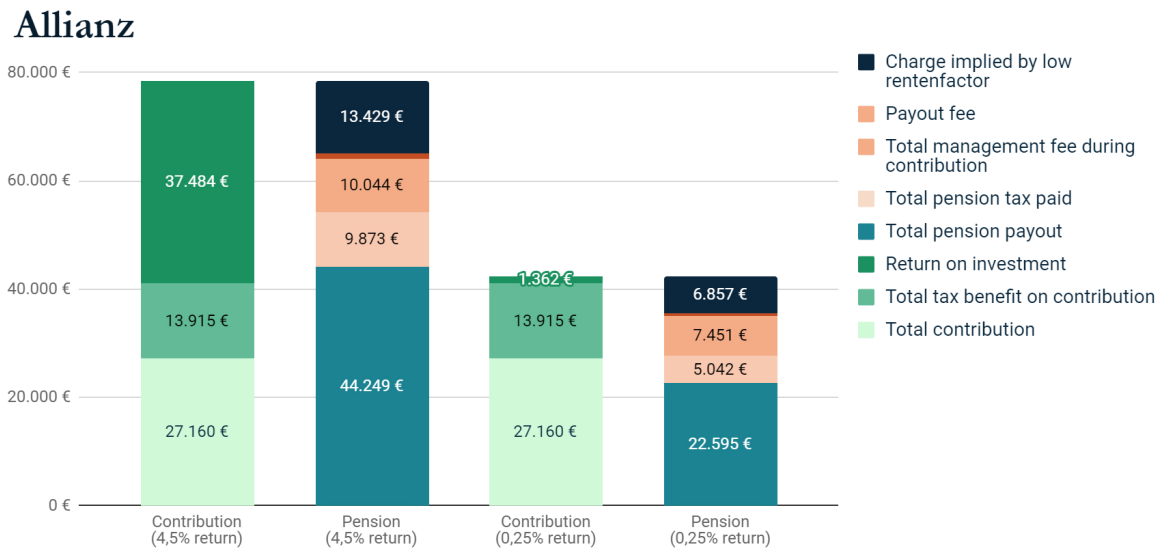


Figure 7a. The Impact of High vs Guaranteed Investment Return on a Riester Pension (no Child, with Lump Sum)

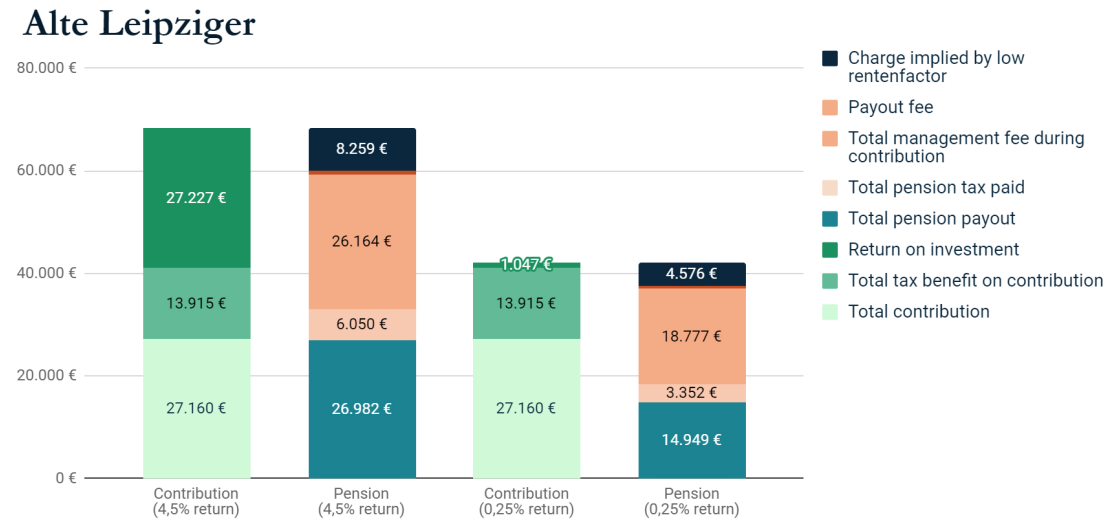


Figure 7b. The Impact of High vs Guaranteed Investment Return on a Riester Pension (no Child, with Lump Sum) for a High Cost Provider

20: The Institut für Vorsorge und Finanzplanung GmbH reports that in 2020 returns after costs on Riester products were on average 2,6%. These returns are in part based on bonds that were purchased earlier and still show a high yield (on an original purchase price basis). These returns therefore have no forward looking value for new contracts. "Riestern lohnt sich doch!" is in our view a rather misleading claim. Also for older contracts these bonds will run out, and the trend decline in the returns provides a good indication of where the returns on existing contracts on average are heading.

Figure 7b is identical to figure 7a, except that it assumes a high-cost provider rather than the cost levied by market leader Allianz. The results show that in this case:

- Despite a substantive investment return of 4,5% the Riester contract will barely yield any positive return. The government would do better just paying the subsidy directly into the pensioner's bank account.
- When, in addition, returns on the investment are low, a Riester contract can result in our Muster saver (without a child) losing over 40% of his/her contributions despite the massive government subsidies. The high cost provider will have to compensate the Riester saver so that contributions and tax subsidies are available upon retirement.

Figure 8 shows that exercising the option of cashing out 30% as a lump sum improves the pension by about 15% !

Finally, having more children and a lower income (we used a monthly income of 2500 € to examine this) increases the government support for our Muster saver as illustrated in Figure 9. But with a low guaranteed return (0,25%), one child is still not enough to ensure a pension that exceeds the level of the contributions. Furthermore, in all cases the government would be much better off providing a direct payment.

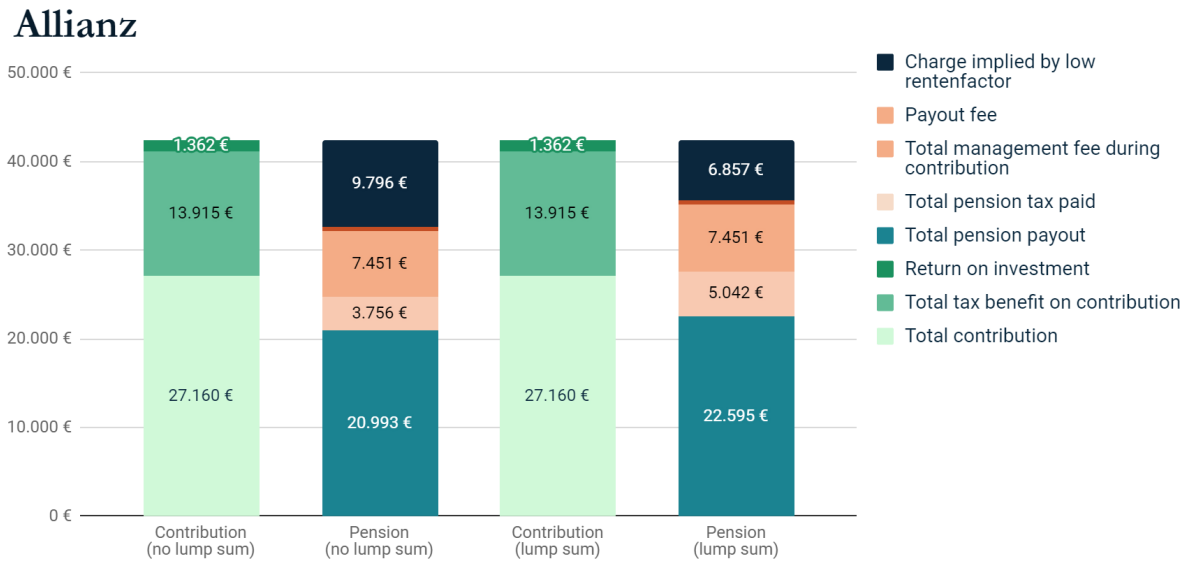


Figure 8. The Impact of Taking a Lump Sum on the Riester Pension (no Child and 0.25% Guaranteed Investment Return)

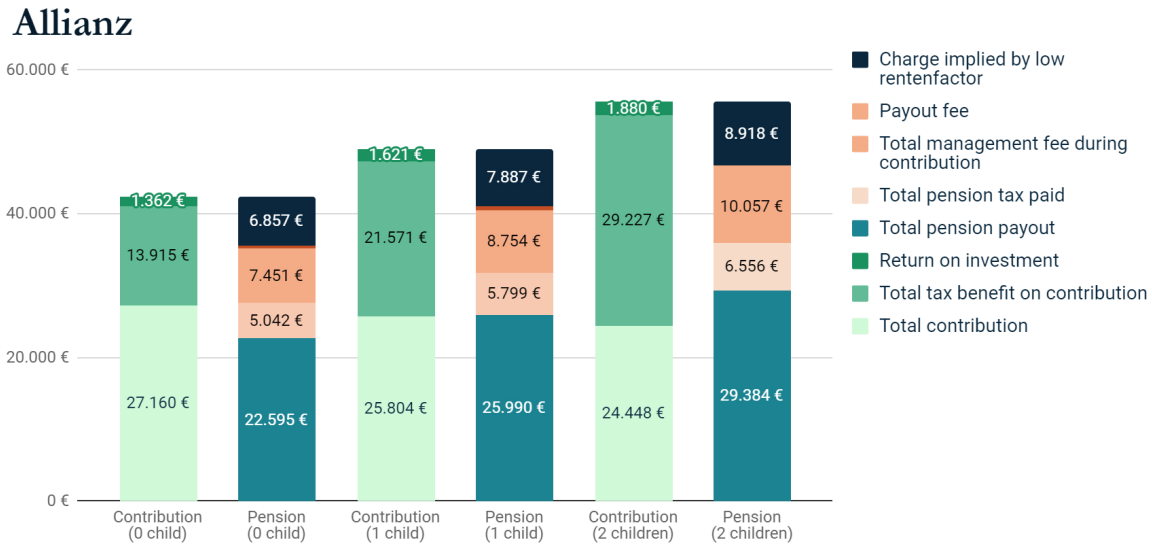


Figure 9. The Impact of Children on a Riester Pension (0,25% Guaranteed Return; 2500 € Income)

Discussion and alternative solutions

The Riester pension reform of 2001 was intended to allow a reduction in the level of the statutory pensions in order to make the pay-as-you-go statutory pension insurance (GRV) financially viable in the long term, given unfavourable demographic developments. This goal of supplementing official pension insurance is obviously not attained. It is also evident that the number of Riester contracts has been stagnant since about 2013, suggesting the public has lost its faith in the program.

Rürup as the program for self employed and as a potential supplement is, as outlined above, not fulfilling its purpose either. The reform of the self employed pension system announced in the coalition agreement is hence a welcome opportunity to improve the system. But this reform should be extended to the Riester program as well.

There are a few fundamental flaws in the existing system that undermine the value of and lead to unnecessary poverty amongst German pensioners.

1. The penchant to demand guarantees leads to low return investments, both in the build up and in the pay-out phase. With longevity increasing, the poor investment during the retirement phase creates an ever increasing drag on pensions in the current low interest rate environment.
2. The complexity of the system has given rise to excessive cost, and to products that undermine the value that pensioners receive from the system.[21]

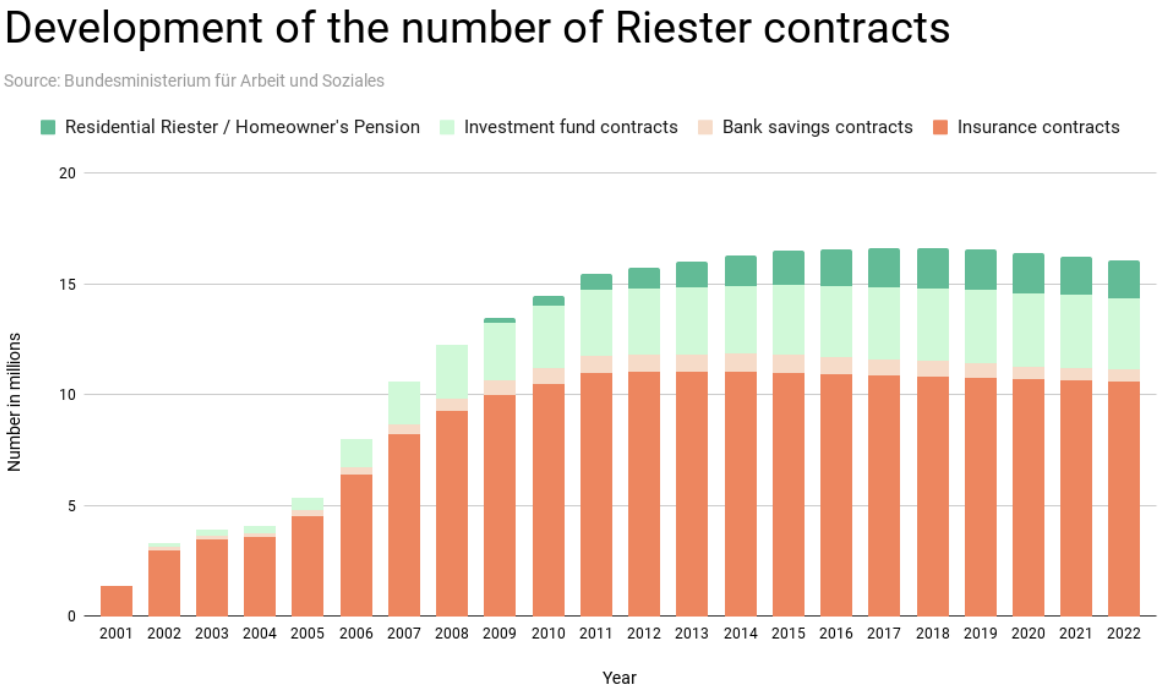


Figure 10.

21: As a result of the complexity and incomplete information, it is hard if not impossible for professionals to provide adequate insight into the costs and risks of these products, let alone that ordinary customers can understand the likely outcomes. This by itself necessitates in our view a deep reform of the system. 9 out of 10 users do not get the products they expect: Pressemitteilung der Verbraucherzentrale Baden-Württemberg vom 16. Mai 2011, Marktbeobachtungen zur „Finanzberatung" – Finanzberatung ist nicht bedarfsgerecht.

A better approach would be to make use of the simple but powerful observation that: stock returns over very long periods become relatively stable at high levels and guarantee a much higher minimum purchasing power than bonds or complex guaranteed products. After all, stocks grow with the economy, whereas bonds give fundamentally short-term protection but no inherent long-term protection against growth nor against inflation.

A minimum reform would be to keep Riester or Rürup products as they are during the pay-in phase but foster proper investment in the retirement phase. Retirees could be earning closer to 6-7% during the 20-30 year retirement phase if fully invested and with longevity and return risks pooled.

There is a strong case for mandating or offering of a public investment pool for funds available at the start of retirement that have been built up through private programs, like Riester or Rürup but also company pension plans that lead to low yield annuities in retirement.

- A public pool will reduce the cost of managing the pension distribution.
- A public pool can be invested to provide high returns permanently. Without such a pool, pensioners need to de-risk their investments some 15-17 years before the expected life end, if they have no excess reserves. A public pool can, just like a pension fund, share the risk across different cohorts of insurees.
- A public pool can also share life expectancy across large groups. At present every pensioner needs to have excess buffers just in case they live very long. The current solution, as outlined above, leads to massive inefficiencies: poor investment, high cost, uncertainty regarding the pension and the distribution of pensions unevenly at very high ages. In relative terms, this benefits the higher educated, with longer life expectancies, while those with lower life expectancies suffer all the disadvantages of the system.
- A public pool will ensure that investments are soundly made and avoid the risk and cost of individual investment decisions.

The pooled funds would initially require a government guarantee for their return (or a buffer endowment), combined with conservative assumptions with respect to the expected return, and realistic assumptions on life expectancy as a basis for deciding on the distributions from the pool. Over time, funds could then be built up that allow the phasing out of most of the government guarantees. To avoid depleting the fund or an excessive accumulation of assets, distribution rules must evenly and steadily reflect the actual returns after considering cushions. A good reference model would be the Dutch pension system.

Without getting into the technical details: if initially a 3% return is guaranteed and provided, the fund should be able to build up a buffer of 3-5% annually, for longevity risk, and to over time raise the return. The size of the needed buffer can be calculated based on the maximum historic drawdowns, and longevity trends.

A more radical reform would allow pensioners to invest in a public fund already during the buildup phase. Left to their own devices, it seems that most customers choose products that are highly inefficient, such as those of high cost providers coupled with guarantees that come with inordinate costs.

- The fund should hence allow a few simple investment strategies/products, and offer only low cost options. This preserves a degree of autonomy and responsibility. In the end the strategy that a person adopts is a function of their overall situation, so it would not be appropriate to fully curtail choices.[22]

22: I.e., we would not recommend creating a public investment group. It is a well established fact that outperformance vis a vis benchmarks is very hard. The industry abounds with claims that they can, but the reality is that markets are quite efficient. Public institutions are not well suited to outperform, as they have limits on salaries which limits the ability to attract those individuals that can outperform–and can command high incomes–, while their accountability structures can be complex and lead to criticism if the investment structure is not absolutely clear. From a cost perspective there is also no point to manage investments in house. ETFs are virtually unbeatable in terms of cost.

Potential impact of a reform on the level of pensions

Table 3 illustrates the magnitude of the impact of such a reform on pensions. Sections 1 and 2 show the results of the current system: high cost providers with limited returns during the build-up phase, that provide guaranteed returns throughout life. Sections 3-5, show the impact of reducing cost and investing well in retirement for different return assumptions during the build-up phase.

To provide a baseline, the table starts out with a zero cost benchmark (section 0): What is the pension if costs of management are zero for different life expectancies and returns during the build-up phase? The most straightforward base case assumes investing 100 € for 30 years, to then receive a pension of 150 € for 20 years. It shows the results as well of raising the return during the build-up phase and of raising life expectancy. For example with a life expectancy of 87 (i.e. 20 years of pension) and a return of 6%, a pension could be reached of 419,01 € per month if costs of management were zero (and tax neutrality).

Section 1 of Table 3, then shows the current system, assuming the cost of the current Rürup products, and our augmented Rentenfaktor of 30: for 30 years of paying 100 €, the largest provider may pay out a mere 81,06 € per month in retirement if investment returns during the saving phase are at the guaranteed level of 0,25%. This is half the zero cost benchmark, and this result holds for higher investment returns as well. This underscores how much a drag cost is ! Reducing the cost to the best provider level could raise the payout to 100,35 €, whereas the highest cost provider would just pay 59,33 € per month. Investing the money properly during the build up phase with the lowest cost provider could raise the pay-out to an expected 264,71 €.

The second section shows that returns are considerably lower, for the same four cost assumptions, if we use the Rentenfaktor that these providers actually guarantee. For the largest provider in particular, the guaranteed Rentenfaktor is low and has a large impact. In the case of the low 0,25% investment return, the pension then drops to just 40,91 € per month. The far right column shows what age an individual would need to reach to be better off with the products of different life insurance companies (low/median/highest cost or largest). For the largest insurance provider, the customer would need to reach 150 years to be better off. For the lowest cost provider, the minimum age until break even is still about 100 years!

Sections 1 and 2 illustrate that the combination of high cost charged during the build up phase and the guaranteed return (and non-investment) during retirement create a massive drag on the pensions obtained. Choosing the lowest cost provider and high yield investment can mitigate some of the impact but only modestly. The best solution still only generates a pension of 230-260 € per month.

Sections 3-5 then goes on to show the impact of investing well during retirement. As section 4 of the table shows, investing assets properly in retirement, in addition to the pay-in phase, could raise the payout to 596 € even if the life expectancy is 97 years, and we use the worst case of investment return over the entire period of 45 years. This is much better than the results shown in section 0, which has a pension of 279 € per month for the same life expectancy, but without investing in retirement.

Section 5 shows that adding a small but, for a large-scale system, reasonable fee, will still yield a pension of about 541 € per month. Tripling the fee to the type of cost of the current system would reduce the pension to under 400 € per month. In our view, there is considerable scope to cut the fees in an efficient system, considering that ETFs for wide indices can be obtained for an annual fee of 0,07-0,2%.

	Return during build-up phase: (All have 0% return in retirement)(long-term returns could be 6-7%)				Min. Age to breakeven with zero cost
	0%	0,25%	4,50%	6,00%	6,00%
No investment in retirement, zero cost benchmark (section 0):					
Life expectancy 87	150,00 €	155,96 €	318,76 €	419,01 €	
Life expectancy 97	100,00 €	103,97 €	212,51 €	279,34 €	
Life expectancy 102	85,71 €	89,12 €	182,15 €	239,43 €	
Different costs, assumed high Rentenfaktor (section 1):					
Lowest cost provider (RF 30)	-	100,35 €	202,27 €	264,71 €	98,7
Cost of largest market share provider (RF 30)	-	81,06 €	154,96 €	199,14 €	109,1
Median cost provider (RF 30)	-	65,42 €	123,45 €	157,93 €	120,1
Highest cost provider (RF 30)	-	59,33 €	107,30 €	135,31 €	128,9
Different costs, Guaranteed Rentenfaktor (section 2):					
Lowest cost provider (guaranteed RF 26,64)	-	89,12 €	179,62 €	235,06 €	102,7
Cost of largest market share provider (guaranteed RF 15,14)	-	40,91 €	78,20 €	100,50 €	150,4
Median cost provider (guaranteed RF 25,93)	-	56,54 €	106,70 €	136,51 €	128,4
Highest cost provider (guaranteed RF 24,25)	-	47,96 €	86,73 €	109,38 €	143,6
Return in retirement (zero cost, LE 87) (section 3):					
0% return in retirement	150,00 €	155,96 €	318,76 €	419,01 €	
2% return in retirement			389,89 €	512,50 €	
4,5% return in retirement			490,10 €	644,23 €	
6% return in retirement			555,82 €	730,62 €	
Worst historic return over 35 years (5,56%)				535,16 €	
Life expectancy of 97 instead of 87 (zero cost) (section 4):					
0% return in retirement	100,00 €	103,97 €	212,51 €	279,34 €	
2% return in retirement			284,65 €	374,17 €	
4,5% return in retirement			391,39 €	514,47 €	
6% return in retirement			463,15 €	608,81 €	
Worst historic return over 45 years (5,93%)				596,47 €	
Life expectancy of 97 instead of 87 (½% cost) (section 5):					
0% return in retirement	92,61 €	96,20 €	193,66 €	253,33 €	
2% return in retirement			259,40 €	339,34 €	
4,5% return in retirement			356,67 €	466,58 €	
6% return in retirement			422,07 €	552,13 €	
Worst historic return over 45 years (5,93%)				541,06 €	

Table 3. The Monthly Payout in Retirement for Different Pension Solutions

37 years old with a 100 monthly contribution, 87 yrs life expectancy.
RF 30 means Rentenfaktor of 30, which is the average Aktuelle Rentenfaktor. The largest insurance company has a guaranteed faktor that is so low, that it is hard to interpret this other than as an attempt to not get any new customers in these hard to manage products.

How does such a reform relate to proposals for a Deutsche Bürgerfonds?

Our starting point, the potential for better investments through the stock market, has been embraced by prominent economists and practitioners (see Brenner and Nauhauser 2013, and Fuest, Hainz, Meier and Werding 2019, and many others in the special 2019 issue from the Ifo Institute). It is reflected in their concept of a Deutsche Bürgerfonds. This is basically a fund that would invest in stocks, funded by bond issuance, to improve the viability of the pay-as-you-go official old age pension by creating a capital base.

This idea seems to have been endorsed in the coalition agreement that speaks of some capital funding for the official pension system. The drawback of the proposal in its present form is the massive scale required to make a dent, and that it leaves the inefficiencies in the supplementary government supported private pension solutions intact. Rather than replacing these inefficient private solutions, it is intended to backstop the official system.

Our proposal is different in that it would seek to leverage existing savings that have been made for old age, with support of tax subsidies and regulations. By guaranteeing a minimum return on existing savings, our version of a Deutsche Bürgerfonds could go much further. By leveraging private savings, the same allocation of public capital could have 5-10 times as much impact (depending on the parameters chosen). Over time, the Bürgerfonds would grow automatically if the guaranteed return remained below the long-term expected return, thus providing a source that could be used to supplement the official pensions.

Moreover, it would underpin a reform of the system by lifting needless limits on investment and reducing the cost. The guarantees make such a reform politically viable. It would also make the supplementary pensions attractive again. Hence the impact would be manifold.

Other recommendations

In addition to Rürup and Riester, Germany also has a complex set of regulations to stimulate company pension plans through tax benefits. Much of what is reported in this paper also applies to the so-called "direkt" company pension plans. The high cost and the requirement for guaranteed results lead to low investment returns. While the option for a lump sum pay out does exist and could mitigate the drag of non investing in the retirement phase, choosing such a lump sum is very disadvantageous from a tax (not from an investment) perspective as it results in the recipient potentially falling in a much higher tax bracket.

The analysis in this paper underscores that Germany could use a fully fledged public sector think tank or similarly designated institute for pensions such as the Netspar institute in the Netherlands. The Munich Ageing Institute and Ifo provide valuable work, but more is needed given the scale of the problems and the complexities. There is surprisingly little research on Riester/Rürup or company pension plans that can help to effectively evaluate these products or construct calculators.

A systematic effort to collect and report data on pension products, so that it is clear how much tax subsidies are provided and what the impact is, should be a priority.

If the current system is maintained, the transparency framework for pension products is in need of a revision. In the often 80 page contracts, users cannot find critical information such as the life expectancy that the insurance company calculates with, the actual pay-out the company expects to do, their track record (i.e. the current and not just the guaranteed Rentenfaktor), the effective cost expected over the entire life cycle of the product or the ratios of pay-outs to pay-ins. Clients should be given standard instructions to calculate expected and worse case returns after product cost. It should not be that the standard contracts are hard to find and only available for Riester and Rürup.

Furthermore, there has to be more transparency regarding the cost when contracts are stopped and/or changed before their end point. Various Rürup and Riester contracts contain clauses regarding change of contract that are extremely onerous–such as the forfeiting of most returns–and thus trap clients in unnecessarily expensive contracts.

The system as a whole also needs a great deal more transparency regarding the rules that apply. Just to give one example: it is almost impossible to find out if users can legally cancel their direct company pension plans and under what conditions. Advisory websites are not clear about the choices. Insurance companies can use the ambiguity to keep clients from cancelling contracts in favour of better choices.

The standard 5 category classification of risk used in the Riester and Rürup products is the opposite of what it should be for long-term pension investments. The classification focuses on short-term volatility instead of the long term real returns that matter for pensions. Hence, bonds are considered safe, and stocks risky. Over the long-term it is actually the other way around: a stock index will return more than the safest bond, and its volatility becomes relatively less important over time, as stocks track the growth of the economy. This implies that the entire classification needs to be revamped and for example replaced with long-term risk/scenario analysis. This is vital if one wants to help citizens choose the right investment strategy.

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Appendix

	Arguments/ claims							
Top 5 website articles	Traffic	Not flexible - no early payout	Not flexible - not inheritable	Mentions the cost problem	It is attractive for higher earners	The classic contract is not attractive 1/	There is no attractive version	After tax calculator?
Finanztip	8,9k	Y, No earlier payout, no termination possible, only waiver of contributions, no lump sum option.	Y - no transfer or inheritance, many products have limited survivor protection.	N, mentions you still have to pay the administrative cost if you have opted not to contribute.	Y, because of tax benefits -admits tax benefits outweigh the disadvantages only in exceptional cases.	Only attractive for self employed right before retirement	N - other versions may be attractive for certain groups	N - only sparse table with Taxable portion of pension per year
Die Versicherer	2,8k	Y No earlier payout, no termination possible, only waiver of contributions	Y/N - but indicates survivor protection as a safeguard.	N - Not at all.	N- renders it attractive for more groups. No specific mention of higher earners.	N - attractive for many groups because of the tax advantage - does not mention disadvantages.	N - Unit-linked attractive for more risk-tolerant-; immediate annuity attractive for older people	Y - very simple, with inflation.
Wikipedia	3,6k	Y	Y	Mention of hidden costs, not high costs	said it is eine günstige alternative .."aimed" at higher income	No specific judgements	N	N
Weltsparen	1,3k	Y	N	N	N	Only for non risk takers who are ok with little/no return	N	N - but they link this particle calculator for tax benefits on pay-in
Allianz	1,2k	Y	It says there is the option to add survivors pension	N	N They advertise "startup invest" for people with low incomes + young businesses	N	N	N

Table 4. Overview of the Arguments used in the Top 5 Websites for Search Keyword: Rürup Rente

1/ In the classic contract the insurance company invests the money and no risk is taken. With low interest rates that means by and large bonds only.
Y= yes/mentioned
N= no/not mentioned

	Arguments/ claims							
Top 5 website articles	Traffic	Contracts are too complex	Not significant enough	Mentions the cost problem	It is attractive for higher earners	The classic contract is not attractive	There is no attractive version	Links to calculators
Finanztip	32,0k	N - not explicitly. They do mention the importance of informing before signing	N	Y- a lot	Y	They say it can be attractive for people right before retirement	N	N
Die Versicherer	11,4k	N	N	N	N - opposite, they say it is better for low income	No specific judgements but it reads like they recommend because of "safety"	N	Y
DRV (Riester page) - based on the Riester Rente official website	5,3k	N	N	Y- notes that you should be cautious and make sure you have a low cost contract	N - the opposite (they recommend for low income earners with kids - as well as others)	N - not specifically (it only says to be careful and get a low cost contract)	N	
Riesterrente.net	4,1k	N	Y and N, it doesn't say that it is not always significant. It says that the costs can make it insignificant.	Y- stresses the importance of checking costs in contract	Y, but they say low earners can also benefit with allowances	Y,(kind of) doesn't go strongly against it - they advise that the savings phase should be > 20 yrs. And that it usually has higher costs.	N, they do stress that you need the right contract (low cost) or else it is not worth it	Y
Wikipedia	4,2k	Y	N	Y	Y, kind of - they say that it is not suitable for low earners because of cost so implicitly that it is more for high earners	N	N	

Table 5. Overview of the Arguments used in the Top 5 Websites for Search Keyword: Riester Rente

1/ In the classic contract the insurance company invests the money and no risk is taken. With low interest rates that means by and large bonds only.
Y= yes/mentioned
N= no/not mentioned

	Argumente							
Die 5 am häufigsten besuchten Artikel	**Suchvolumen**	**(unflexibel - keine frühere Auszahlung**	**(unflexibilität - nicht vererbbar**	**Erwähnung des Kostenproblems**	**Attraktiv für Gutverdiener**	**Klassische verträge unattraktiv**	**Kein attraktiver vertrag**	**Rechner**
Finanztip	8,9k	J keine frühere Kündigung, kein Kapitalwahlrecht	J -keine Übertragung oder Vererbbarkeit, viele Produkte haben einen eingeschränkten Hinterbliebenenschutz.	N - erwähnt, dass die Verwaltungskosten auch dann bezahlt werden müssen, wenn man nichts einzahlt.	J, wegen der Steuervorteile - steuerlichen Vorteile überwiegen nur in ausnahmefällen über die Nachteile.	Nur attraktiv für selbständige die kurz vor der in der Rente stehen.	N - andere Versionen können für bestimmte Gruppen attraktiv sein	N - Nur Tabelle: Besteuerungsanteil der
Die Versicherer	2,8k	J -, keine Kündigung möglich, lediglich Beitragsfreistellung	Y- zeigt aber Hinterbliebenenschutz als Absicherung auf.	N - Gar nicht.	N- attraktiv für viele Gruppen. Gutverdiener nicht erwähnt.	N - attraktiv für Selbständige und für viele andere wegen des Steuervorteils - erwähnt gar keine Nachteile.	N - fondsgebundene attraktive für risikobereitere; Sofortrente attraktiv für ältere Menschen	J -: Wie viel Geld bekomme ich im Alter? - ungenau, mit inflation
Wikipedia	3,6k	J - keine Kündigung, kein Kapitalwahlrecht	J - aber alternativen: Hinterbliebenenrente, Zusatzversicherung "Beitragsrückerstattung im Todesfall vor Rentenbeginn"	Sie erwähnen versteckten Kosten, nicht aber die hohen Kosten.	Sie sagen, das es sich an Gutverdiener richtet	Kein konkretes Urteil, zählt Vor- und Nachteile auf.	N - andere Verträge nicht explizit erwähnt	N - nur Tabellen
Weltsparen	1,3k	N- Sie haben einen speziellen Artikel für dieses Thema	N (Sie haben einen speziellen Artikel für dieses Thema)	N - Garnicht	Y - In den häufigen Fragen sagen sie Gutverdienermit hohen persönlichen Steuersatz können profitieren.	Sie sagen das es nur für Leute die sicherheitsorientiert und risikoscheu sind,	N - Bewirbt und Empfiehlt den Rürup Fondssparplan mit ETF, sagt dass die Verwaltungskosten hier sehr niedrig ist	N - sie verlinken diesen Rechner für den ETF Rürup
Allianz	1,2k	J	Sie sagen nur dass es die Option gibt ein Hinterbliebenenschutz zu erschaffen	N	N, Sie werben für "start up invest" für Menschen mit geringem Einkommen + junge Unternehmen - ein Produkt von Allianz	N	N	N

Stichwort: Rürup rente

J= ja/ es wird erwähnt
N= nein/es wird nicht erwähnt

	Argumente							
Die 5 am häufigsten besuchten Artikel	Such-volu-men	Die Verträge sind zu kom-plex	Nicht bedeutend genug	Erwähnung des Kosten-problems	Attraktiv für Gutverd-iener	Klassische verträge unattraktiv	Kein attraktiver vertrag	Rechner
Finanztip	32,0k	N -nicht aus-drücklich. Sie erwähnen zwar, dass es wichtig ist, sich vor der Unterze-ichnung eines Vertrages zu informieren.	N - außer wenn die Kosten hoch sind	Y- sehr viel	Y	Sie sagen, dass es für Menschen kurz vor dem Ruhestand attraktiv sein kann	N	N
Die Versicherer	11,4k	N	N	N	N - Im Gegenteil. Sie sagen, es sei besser für Geringverd-iener.	Keine spezifischen Urteile, aber es liest sich so, als ob sie es aus "Sicherhe-itsgründen" empfehlen	N	Y
DRV (Riester page) - based on the Riester Rente official website	5,3k	N	N	Y- Sie weisen darauf hin, dass man vorsichtig sein und sich vergewissern sollte, dass man ein kostengüns-tigen Vertrag hat	N - Im Ge-genteil. Sie empfehlen für Ger-ingverdiener mit Kindern - wie auch für andere)	N - Nicht ausdrück-lich (sie sagen nur, dass man vorsichtig sein sollte und einen kostengüns-tigen Vertrag abschließen soll)	N	
Riesterrente.net	4,1k	N	Y und N. Es wird nicht gesagt, dass es nicht immer be-deutend ist. Er sagt, dass die Kosten ihn unbe-deutend machen können.	Y- Sie unter-streichen die Bedeutung der Kosten-kontrolle im Vertrag	Y, aber sie sagen, dass auch Geringverd-iener durch Zulagen profitieren können	Y (sozu-sagen). Es spricht nicht unbedingt dagegen - sie raten, dass die Ansparphase > 20 jahre sein sollte, und dass sie in der Regen mit höheren Kosten ver-bunden ist.	N. Sie betonen, dass man den richtigen vertrag mit niedrige Kosten braucht. Sonst lohnt es sich night.	Y
Wikipedia	4,2k	Y	N	Y	Y, - in ge-wisser Weise - sie sagen, dass für Ger-ingverdiener wegen der Kosten nicht geeignet ist, also implizit, dass es eher für Besserver-dienende geeignet ist.	N	N	

Stichwort: Riester rente

J= ja/ es wird erwähnt
N= nein/es wird nicht erwähnt