## **Uncle Herbert's Savings Plan with Bonus and the Legal Aftermath Uwe Wystup - MathFinance**

The Challenge: Now, after years of low interest rates in the major currencies, how do you still get 50% interest on your savings? Of course, you can buy Turkish Lira and accept 10% plus carry trade risk, or buy crypto currencies, or trade CFDs, or even trade CFDs on crypto currencies. We might now wait for the inflation to kick in and have the FED and ECB increase interest rates to levels of the 1990s. However, we aren't quite there yet, and how do we do it without taking risk of high fluctuations?

Solution: Savings Plan "S"

Many German banks have been offering savings plans called "special", "bonus", "premium", "S" and the like to retail clients in the 1990 and the first decade. The investor, let me call him Uncle Herbert, would commit to paying a monthly amount of e.g., EUR 25 into a savings account and receive a base interest plus a bonus of x% in subsequent years for the amount paid in the respective year. An example is presented in Table 1.

year	3	4	5	6	7	8	9	10	11	12	13	14	15
bonus	2%	4%	6%	8%	10%	15%	20%	25%	30%	35%	40%	45%	50%

Table 1: Example Bonus Rates for a Savings Plan

This means that if Uncle Herbert keeps paying his monthly amount for 15 years or more, then he will receive 50% additional bonus on these 12 monthly payments, so if she saves EUR 300 in year 15, she will receive a bonus of EUR 150 for that year, plus the general market interest rate, which is currently around zero, so negligible compared to the bonus, and the show will repeat in all subsequent years. So the best thing to do nowadays is that you should have started such a plan 20 years ago. And note that this is scalable, i.e., one could also agree to save EUR 1000 per month rather than just EUR 25, which would generate EUR 6000 free cash every year (before tax). In Figure 1 I illustrate a simplified example assuming a constant 2% reference base interest rate, a monthly payment of 25 EUR and an horizon of 20 years. We see that in the years 10 to 20 the bonus accounts for a significant part of the capital growth, although the bonus is only paid for the capital invested in the respective year. In year 20, bank pays about as much to Uncle Herbert as he saves. This is obviously a huge incentive for Uncle Herbert to stay invested a long time and a huge incentive for a bank to terminate the savings plan.

This is not a joke. There are thousands of such legacy contracts still alive, and obviously banks find it expensive and are seeking legal ways to terminate the contracts, mainly by arguing that it is just too expensive.

Uncle Herbert and his classmates on the other hand have been struggling with the base interest rate, which lacked transparency in the past. Recently the federal financial court in Germany came up with a judgment that the investors have to be given a transparent reference interest rate. In the past banks have used their own internal interest rate and investors would have to accept it. Traditionally, in the 1990s there was a note stuck on a board in Uncle Herbert's local branch with the current savings interest rate on display. From time to time, the bank would change the rate and

Uncle Herbert would pass by very often without taking notice. What it is and how the bank came up with it is widely unknown even to experts, but particularly to Uncle Herbert. Was it a market interest rate less a bank margin?

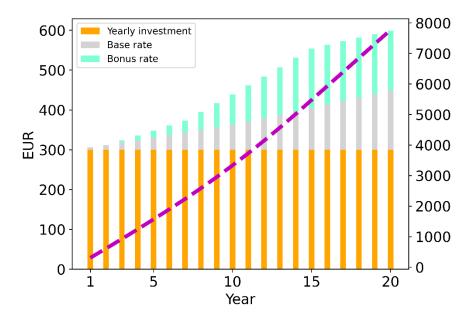


Figure 1: Bonus savings plan with annual investment on the LHS x-axis, total amount indicated by the dotted curve with units on the RHS x-axis

And thinking ahead: which market interest rate should one apply? Uncle Herbert has never heard of LIBOR, what it means, what's it for and why the heck we must change it. If we use a long-term rate like 10-year government bond yields, one might argue that the tenor is too long, but Uncle Herbert had the right to cancel the savings plan any time with three months' notice. If we take a short-term rate, then one might argue that with the bonus plan in particular, Uncle Herbert's intention was clearly a long-term investment. And all of this is way too complicated, as all Uncle Herbert needs is a transparent interest rate he could look up in his daily newspaper (or in the internet if he has grandchildren to help him with that).

The margin the bank takes is yet another discussion. Interestingly, there are judgments issued by Germany's federal court that the bank margin must be a percentage of "the" reference rate. Here, we see that many of us should have paid more attention in middle school when negative numbers were introduced. If the reference rate is -1%, and the bank takes 50% of this, it would earn a margin of -0.5%. No further comments. Except: the judgment is from 2010, when negative rates were considered impossible. But even low rates near zero would squeeze the bank's margin to a very small amount and make its business model non-viable. The traditional banking business follows the 3-6-3-rule and is endangered these days. Negative numbers are hard, I admit. I have been trying to teach people negative numbers with the following question. Suppose there are 8 people on the bus. 12 get down. How many people must enter the bus for the bus to be empty? My success rate has been rather on the frustrating end. Never mind.

Some other equivalently smart folks suggest, the bank margin should be a constant, say 3%, i.e., if the market reference rate is 5%, then the bank takes 3% and the client gets 2%. Deal done. However, this would also mean that if the reference rate is -1%, the client would pay penalty of 4%. I have a faint idea what would happen in France if retail clients were told this proposal.



## Banking Business traditionally follows the 3-6-3-Rule:

The banker borrows money for 3%, lends it out for 6% and reaches the golf course at 3pm.

So, overall, the legal aftermath is about:

- 1. Can the bank just terminate the savings plans or under which conditions?
- 2. Which reference rate must be applied?
- 3. How can the reference rate be modified such that both Uncle Herbert receives a reasonable and transparent amount of interest and at the same time the bank's business model is still viable?

Now, after more recent judgments from Germany's federal court, we expect many such contracts to be re-evaluated.

Rumors have spread that a dodgy valuation company has turned this into a business model by telling Uncle Herbert and thousands in his batch that the banks used a too-low reference rate and generate a report for a small fee that Uncle Herbert can use to sue the bank and claim a few thousand Euros extra interest that should have accumulated over the years. If this is true, I am sure the courts will be as busy as ever.

So, what's the take-away? Uncle Herbert will most likely be alright. Maybe 2000 bucks extra in his pocket and a court case on his desk to keep him busy. The courts will have even less time to deal with all the claims around the Diesel scandal. With this work pressure we might be lucky, and the legal system might finally go digital. For Uncle Herbert's nieces and grandchildren: with possible upcoming inflation, next time banks offer savings plans like the above, they might carefully want to consider signing up for one. The catch is obviously, that now it is either too late or too early. I might go to a bank and ask for an average of two contracts, one of 20 years ago and one in 20 years. And my daughter would realize that Daddy is again thinking too mathematically, which parts of the rest of the world are not yet entirely ready for.

## References in the German media:

1. Zinsanpassungsklausel unwirksam! Und jetzt ...? - <a href="https://www.bafin.de/SharedDocs/Veroeffentlichungen/DE/Fachartikel/2020/fa\_bj\_2002\_Zinsanpassungsklausel.html">https://www.bafin.de/SharedDocs/Veroeffentlichungen/DE/Fachartikel/2020/fa\_bj\_2002\_Zinsanpassungsklausel.html</a>

- 2. Verbraucherzentrale: Zinsklauseln in Sparverträgen rechtswidrig <a href="https://www.verbraucherzentrale.de/wissen/geld-versicherungen/sparen-und-anlegen/zinsklauseln-insparvertraegen-rechtswidrig-so-kommen-sie-zu-ihrem-geld-22232">https://www.verbraucherzentrale.de/wissen/geld-versicherungen/sparen-und-anlegen/zinsklauseln-insparvertraegen-rechtswidrig-so-kommen-sie-zu-ihrem-geld-22232</a>
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