

The author analyzes the computation of the fair present value of an insurance contract. The author investigates three possible approaches: the standard “policy-by-policy” approach, the analytic function approach and the cluster approach. The last two methods are very promising for accelerating the computation of the fair value of an insurance policy. Despite the fact that the thesis should be evaluated because of its content, still the length appears to be inadequate to completely and deeply analyze the effect of such methodologies. With respect to the previous submission (for which I still was the opponent), it seems that the author took into account just a very few points among the ones I arose. Therefore, unfortunately, I have to rewrite the same comments that had Not been Corrected (NC) from previous submission and I will highlight the few that the author actually Corrected (C).

Moreover, (another) extremely dangerous error makes the whole discussion of the results completely non sense. In particular, the author estimates the parameters of a fundamental model, the CIR model, with a term structure while such model is intended to describe the diffusion process of a single short-term interest rate. Since the definition of the interest rate process is wrong, all the subsequent computations are wrong. Please, see details below.

The abstract is poorly written. I would avoid “...” and I would, at least, close it with a point “.” in the end.

I do not think that the thesis fulfill the standards for a Master Thesis at Charles University.

Here, I list in more detail my comments and doubts:

The thesis would require a complete English correction. There are many typos and grammar mistakes. I will only list the main I found in the Introduction section, but a strict proofreading should be applied to the whole text.

Insurance companies take → insurance companies consume (not corrected from previous submission) (NC)

cash flow → cash flows (NC)

is based → discusses (focuses on) (NC)

of said processes → of these processes (or of mentioned processes) (NC)

Among the actuarial tasks belong risk management, ... → this is not an English construction (NC)

requires → require (NC)

For every contract is calculated cash flow with some possible scenarios → this is not an English construction (NC)

Because → Since (NC)

the work on → the results of (NC)

~~We will to simulate~~ → either “we will simulate” or “we want to simulate” (C)

~~chose~~ → choose (C)

After (1.1), probability the author wants to write FV_0 , not FV_t .

The title of 1.3 should change from Assumptions to Definitions. (NC)

Formula (1.3) now is better explained but still is not clear why then the author move to formula (2.1) and ignore the temporal gap between cash flow in and cash flow out. Is the interest rate negligible? In Table 1.1

there are a lot of parameters that are mentioned but then no used anywhere, for instance: x (which is actually redefined at page 23), T_x , p_x , tp_x , etc.

It is not clear whether the interest rate i_t in formula (2.2) (at least, I assume it is an interest rate because it is not defined) is the same of rfr_t of formula (1.2) or if it differs because of some risk premium.

In section 2.2, I would use another notation because function f has already been used as aggregating function of interest rates in section 2.1. **(NC)**

Point 3 of the Wiener process definition: what does it mean $\forall 0 = ?$ **(NC)**

The implementation in Section 4 seems to use as input the term structure of the risk free interest rate of Czech Republic. Then, then author apply the CIR equation to model the term structure. This use of the CIR equation is completely NOT correct because the CIR equation must be used to model a single horizon interest rate, and not a term structure. Models to describe a term structure could be Ho and Lee (1986), Hull and White (1990), Black, Derman and Toy (1990) or Black and Karasinski (1991). The Cox, Ingersoll and Ross (1985) can be used just to model a single short-term rate path. For instance one can use the CIR model for Euribor 1-month or Euribor 3-month or Libor, but, I repeat, not a term structure. So estimate the CIR parameters with a term structure is completely non sense. One could propose a proper extension of the CIR for a term structure, for instance Maghsoodi (1996) or Brigo and Mercurio (2001b), but this is not the case of the equation 3.3 reported by the author.

Despite the just mention error implies that the remaining part of the empirical application is wrong, I will make other remarks about the reported results:

- Figure 4.2: it is not clear what the axis represent.
- Figure 4.2: I assume that the distribution reported vertically should represent the distribution of the rate at the 1-something horizon but this is inconsistent with the depicted paths.
- Figure 4.3: it is not clear what the axis represent.
- “brutto” is not an English word.
- The List of Abbreviations clearly testifies the general sloppiness of the thesis.