Paper discussion

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First paper: **Construction of an Aggregate Consistent Utility, without Pareto Optimality. Application to Long-Term Yield Curve Modeling**, by Hillaret et al.

- The paper considers an economy with (an infinity of) agents with different "utilities"
- It is argued that in a dynamic context, a notion of utility **process** developed by El Karoui and Mrad is more appropriate than standard utility **function**.
- This technique is used to construct an economy in which the initial wealth distribution is exogeneously given, rather than being determined by Pareto optimality.

Some questions

- The Vasicek model allows the interest rate to be negative. Is it incompatible with absence of arbitrage?
- It is announced that it is possible to generate other types of yield (e.g. non monotonic, or hump-shaped). It would be nice to see some examples.
- It would be nice to see an illustration of how the total wealth evolves along with the spot interest rate, say.

Second paper: **Branching Processes for Multi-Curve Interest Rate Modeling**, by Fontana et al.

- The paper proposes a multi-factor model for the simultaneous modelling of several term structures.
- The factors are univariate, mutually independent, and follow a branching process.
- These processes are affine, making it convenient to price bonds and interest rate derivatives.

The technical novelties are mainly:

- Branching processes are used as an alternative to more standard CIR type affine processes.
- In particular, the SDE of the branching process involves a tempered stable (i.e. CGMY) process.
- Deterministic intercepts are added (à la Brigo and Mercurio) to the short rate and the spreads so that the **initial** curves can be perfectly fitted (but not necessarily curves for $t > 0$).

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My questions/comments:

- Maybe some motivations of branching process would be welcome (why not other affine processes)?
- How about the tempered stable assumption?
- What happens to the calibration, if you observation term structure during more than one periods?

Third paper: **Negative Interest Rates, Bank Profitability and Risk-Taking**, by Boungou.

- This paper conducts a dynamic panel data analysis to study the impact of negative interest rates on the major indicators characterizing risk taking, and profitability
- This contributes to the existing literature, which until recently has only considered the impact of low but positive rates on banks
- It is found that the negative rate adversely impacts the profitability but does not impact too much the risk-taking behavior.

Suggestions

- Some claims need more explanation
  - "the reduction in interest rates from 1% to 0% should not have any effect on banks' profits"
  - "negative deposit rates set by central banks will not encourage commercial banks to lend more to the real economy (because they have to reduce their losses)".
  - One can think of the opposite: negative deposite rate by ECB $\Rightarrow$ better for a bank to lend to the real economy than to deposit money at ECB $\Rightarrow$ the average credit quality decreases $\Rightarrow$ More risk-taking by banks.
  - Moreover, a "joint analysis" of profitability and risk-taking is announced, but actually these two regression equations are written separately without cross effects.

Thanks very much.

Reference

- On deterministic–shift extensions of short–rate models, Finance and Stochastic, by Damiano Brigo Fabio Mercurio