Project Update

August 2018

This year, I have been working together with my supervisor Professor Bart Lambrecht on the project that examines investment and payout decisions for groups of investors with heterogeneous risk aversion. We are now wrapping up the model and starting to write down the first draft.

The project presents a dynamic continuous-time model for multi-agents with different level of relative risk aversion. We analyze the impact of heterogeneous risk attitudes on consumption and portfolio choices under the Merton framework. We show that the optimal investment policy is procylical and can be expressed as a weighted average of each individual investor's optimal policy. In terms of payout policy, we find that the least risk averse investor has a convex payout scheme while the most risk averse investor has a concave one. For investors with relatively intermediate risk aversion, the payout functions are convex first and then gradually become concave. These kinds of payout patterns resemble securities like equity and bond. The results can be collapsed into the standard Merton results if all the investors have the same level of risk aversion, which means that the Merton findings can served as a benchmark for comparing whether a coalition of investors create value. Under certain ownership weights we find that investors are indifferent between running the firm independently and operating as member of a group. This implies that under such weighting scheme, syndicate neither creates nor destroys value for participants. Even though all other weighting schemes are Pareto optimal, they make at least one investor worse off thereby destroying her initial incentive to participate. The aggregate utility can be improved if the weighting scheme is determined by a social planner. In this case, the social planner will give all investors equal weights regardless of their contribution of asset and degree of risk aversion. However, the investors who are worse off in social planner optimization will refuse to participate unless some external mechanisms or contracts, for example side payment, are imposed to compensate her for the utility loss.

More effort is needed to push the paper a bit further. We are still working on the framing as well as the implication part of the paper. We aim to have the first draft available by the end of this academic year and hopefully to have it ready for presentation by November.