Report on Ph.D. Thesis Defence

Ph.D. Candidate	Nguyen Dang Tue
Main referee	Wade D. Pfau
Referees	大山　達雄 Roberto Leon-Gonzalez Minchung Hsu 渡辺　和孝(慶應義塾大学)
Dissertation Title	ESSAYS ON NEW RETIREMENT INCOME STRATEGIES: GUARANTEED LIFETIME WITHDRAWAL BENEFITS, DECISION RULES AND TIME SEGMENTATION

Result: Pass (subject to minor changes)

1. Abstract

Dissertation and Presentation Overview

Tue presented his dissertation on September 4, 2012, and the presentation was followed by comments and questions from the members of the examination committee and other participants.

The thesis was written under the direct supervision of Associate Prof. Wade D. Pfau. Tue's dissertation consists of 3 research papers (after the Chapter 1 introduction, Chapters 2 through 4 represent independent research papers) on the subject of U.S. retirement income strategies.

Dissertation and Presentation Overview

The introductory chapter sets up the framework for retirement income. As people become increasingly responsible to plan for their own retirements, they must build a strategy which protects from various risks, including market, inflation, and longevity risk. He also describes the basic methodology, involving Monte Carlo simulation and bootstrapping for market returns and longevity.

Chapter 2 (Essay 1) provides a framework to compare three general types of retirement income strategies. Traditional strategies to be investigated include systematic withdrawal plans (SWPs) and single premium immediate annuities (SPIAs). More recently developed strategies include guaranteed lifetime withdrawal benefit riders (GLWBs) attached to variable annuities. He evaluates these strategies for single

females at different ages and using different withdrawal rates. He evaluates the strategies for different outcome measures, including expected total income, expected bequest, underfunding, and probability of bequest. He finds that SPIAs are more suitable for high retirement ages and low withdrawal rates. As for the GLWBs and SWPs, they provide comparable performances.

Chapter 3 (Essay 2) considers variable withdrawal strategies based on the decision rules developed by Jonathan Guyton for retirement portfolio withdrawals. He incorporates these decision rules as additional strategies to be compared among different outcome measures. This chapter also develops an additional outcome measure called "spending value" which is a weighted average measure of the other outcomes.

Chapter 4 (Essay 3) analyzes time segmentation strategies for retirement withdrawals, which involve devoting specific assets to spending needs at different time horizons, rather than treating withdrawals from a total returns portfolio perspective. Following the concept of asset dedication, specific assets are dedicated to meet spending needs at different time horizons. Fixed income is used for nearer needs and stocks are used for growth for longer-term spending needs. Tue finds evidence against the use of time segmentation strategies, as difficulties arise from shortfalls experienced by the stock portfolio, and by the impact of inflation on the real value of the fixed bond holdings.

2. Result /Notes from the Examining meeting / Final Evaluation

Questions and Discussions at the Dissertation Defense

Professor Watanabe:

Good presentation. In the figures, the use of acronyms for the strategies makes it hard for those figures to stand alone. Add a table to summarize differences between the different strategies. A table in the introduction chapter summarizing all of the retirement income strategies would help.

Professor Oyama:

Wants to know more about the importance/contribution of the work. What is the current situation using the actual data? Why are these strategies important and worthy of investigation?

About the methodology, Monte Carlo is the main methodology. Tue assumes a probability distribution, but he should make more details about the data and probability distributions assumed for the Monte Carlo methods. How can he justify the

probability distribution?

Make a 3D graph with retirement age on x-axis and withdrawal rate on y-axis, and then a figure could be made for each strategy. For a given range of total income, what type of combinations of age and withdrawal rates will support that?

For the spending value analysis using weights, how do those weights influence the conclusions? What kind of weight combinations change or influence the conclusions? For instance, if the weight of one is two times as big as another, then the conclusion is X, but then what happens as the weights change from these values? What are the cut-offs between different outcomes?

Comments provided by Committee Members Not Attending the Defense

Professor Leon-Gonzalez

Professor Leon-Gonzalez met separately with Tue on August 29 to hear the defense. Comments from the professor include to (1) shorten the title, (2) include a Chapter 5 which interconnects the previous works and provides policy implications, (3) to include further discussion in the methodology about the choice between using survival probabilities and fixed retirement time horizons and how it impacts the outcomes and how retirees may choose an appropriate method based on their risk aversion, and (4) provide further discussion about the asset allocation choices and whether these choices might be applicable for other countries such as Vietnam.

Professor Hsu

Professor Hsu met separately with Tue on August 29 to hear the defense.

He was pleased and suggested to shorten the original title and include policy recommendations.

Notes from the follow-up evaluation meeting

The Committee decided that both the contents of the dissertation and the public defense were satisfactory for conferring the doctoral degree. However, it was agreed in the meeting that some minor changes in the format and presentation would improve the clarity of the dissertation. It was, therefore decided that the required changes and revisions be made in the dissertation before the final submission. It was further decided that Associate Prof. Wade Pfau will be responsible to check and validate the revisions. These revisions are expected to be provided within a month. For other committee members, Tue will prepare a letter explaining what he revised and changed. He will also prepare a final version of the dissertation to share with all committee members as

well.

Tue's Revisions

At the time of completing this report, Tue is making sufficient steps to complete his d issertation revisions that I am confident things will be completed in an orderly manner. He has made sufficient revisions and can submit a finalized copy of the dissertation. He has made these revisions:

- The title has been shortened to be: "Essays On New Retirement Income Strategies: Guaranteed Lifetime Withdrawal Benefits, Decision Rules and Time Segmentation" (Following Professor Oyama, Professor Hsu and Professor Gonzalez)
- A new Chapter – "Chapter 5: Policy Implications and Discussions" has been included to summarize previous Chapters and discuss about Policy Implications (Following Professor Hsu and Professor Gonzalez)
- A new Table – Table 1-4 has been included to clarify about strategies being analyzed in the thesis. (Following Professor Oyama and Professor Watanabe)
- The order of assumptions and methodology has been interchanged in all Chapters (Following Professor Oyama)
- Data and Assumptions Parts have been combined in all Chapters (Following Professor Oyama)
- Difference from previous research has been incorporated into Literature Review in all Chapters (Following Professor Oyama)
- Discussion more about the current uses of SPIA and SWP strategies has been incorporated in Chapter 1 – Part 1.2. (Following Professor Oyama)
- Probability distribution of asset returns and inflation used in Monte Carlo simulation has been clearly defined in Part 3.4. Methodology (Chapter 3) (Following Professor Oyama)
- The discussion about how the change weights can affect the conclusions about spending value has been incorporated in Part 3.5.5. Chapter 3 (Following Professor Oyama)
- The combination of retirement age and withdrawal rate are expressed in graphs included in the Appendix of Chapter 2 (Following Professor Oyama)

Final Evaluation

Tue has made the changes recommended by the examination committee members and has given a detailed report of the changes to me. I have examined those changes and explained them in this report, and I am satisfied that he has fully followed the

recommendations of the examination committee.