

Report on Ph.D. Thesis Defense

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Main referee	Wade Pfau
Referees	大山 達雄 Minchung Hsu Alistair Munro 高橋 新吾 (IUJ)
Dissertation Title	Essays on Social Security Systems: Cases of Sri Lanka and other Emerging Market Countries

Presentation and Results:

1. Mr. Kumara presented his dissertation in about 50 minutes, 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. The thesis was organized into four chapters, each of which represents an independent paper. Chapter 1 is forthcoming for publication in *Journal of Development Studies* which is listed as a Category 2 journal in the GRIPS economics group rankings. Chapter 2 has received a “revise and resubmit” request from *Australian Economic Papers*, which is listed as a Category 3 journal in the GRIPS economics group rankings. Chapter 3 is currently under review at *Annals of Finance*. Chapter 4 is currently under review at *Economics Research International*. I am confident that the dissertation contents will eventually result in four published papers in internationally recognized peer-reviewed journals.
2. Sisira answered the queries raised by the examiners and other participants at the seminar satisfactorily with clarity and coherence.
3. The meeting of the Examination Committee was held immediately after the presentation. The Committee was chaired by Professor Tatsuo Oyama and included Assoc. Prof. Pfau, and Professor Takahashi, who served as the external examiner. Prof. Munro and Prof. Hsu heard the presentations separately and provided their comments. 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.

4. Mr. Kumara 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 I am satisfied that he has fully followed the recommendations of the examination committee.

Summary of the Thesis

In accordance with the international trends in the field of economics, this dissertation includes chapters which each represent a distinct paper that is ready for journal submission. In this student's case, he actually completed four chapters of four independent papers, compared to the more customary three chapters. While all four chapters are about the same general topic indicated in the dissertation title, each chapter employs a distinct methodology and framework. This dissertation will contribute to the debate about personal retirement planning in emerging market countries.

For countries assessing whether to implement a cash transfer program, an ex-ante evaluation is vital to assess its potential impacts. Chapter 1 simulates the impact of alternative cash transfer programs on school attendance and poverty among Sri Lankan children. It finds that cash transfer programs targeting poor children would be the most cost-effective way to reduce child poverty and encourage school attendance. If means-testing is not feasible, then programs targeting the children in households with at least three school-age children would provide a suitable second-best solution. The findings suggest that even a limited program budget can provide significant impacts.

The topic of Chapter 2 is the Employees' Provident Fund (EPF) of Sri Lanka, a defined-contribution pension fund whose pooled asset holdings consist mainly of local government bonds. Regulations prohibit international diversification, and this chapter aims to quantify the extent of the potential harms, if any, caused by this constraint. To improve the robustness of the findings, the chapter uses two distinct methodologies. These include traditional mean-variance analysis from modern portfolio theory, and Monte Carlo simulations that estimate the distribution of wealth accumulated at retirement from the contributions of a hypothetical worker. Both methods produce qualitatively and quantitatively similar results: workers with risk aversion varying from aggressive to conservative will be better served by allowing international

diversification. The results are particularly persuasive for the second approach. The EPF fund managers will likely behave fairly conservatively toward risk, which suggests that around half of the fund assets should be invested abroad.

In recent years, investment portfolio selection is growing in importance for many emerging market pension funds, as pension reforms move toward advanced funding systems. Various investment regulations are applied to the funded pensions, particularly in the form of portfolio limits for equities and international assets. With a bootstrap simulation approach, Chapter 3 attempts to quantify the impacts on retirement benefits of restricting international assets from the investment portfolios of emerging market pension funds. On average, over half of the pension portfolios of emerging market countries should be in international assets in order to maximize the expected utility of moderate and conservative pension fund participants. More generally, international assets can play a significant role in the investment portfolios for workers with risk aversion varying from aggressive to conservative. With few exceptions, the entire probability distribution of wealth accumulations at retirement could be shifted higher with the inclusion of international assets.

Finally, Chapter 4 compares the performance of various fixed and lifecycle portfolio strategies for the accumulation phase of retirement planning in emerging market countries. With an expected utility framework and a bootstrapped Monte Carlo procedure, the chapter finds that the majority of emerging market investors with varying attitudes toward risk can maximize their expected utility by using lifecycle strategies instead of fixed allocation strategies. Most commonly, emerging market investors maximize expected utility with a lifecycle strategy using a 30 percent average equity exposure, though the results vary among countries.

Comments of Committee Members

1. Professor Hsu was satisfied with the dissertation. He had made comments at the Ph.D. Candidate Seminar which Mr. Kumara incorporated before the final defense. As for the defense, Prof. Hsu suggests in future work to consider the role of income uncertainty.
2. Prof. Munro heard Mr. Kumara's presentation prior to the defense date and provided several comments. Mr. Kumara already revised the dissertation to reflect these comments by the dissertation. He added details about how increasing income is an inefficient way to raise school attendance. He also compared elasticities from his results with existing studies about conditional

cash transfer programs. He also added details about how income uncertainty in each country would make the wealth accumulations more volatility than the results made with the assumption of constant income growth.

3. Prof. Takahashi also provided comments prior to the defense date, which Mr. Kumara had incorporated by the defense date. He explained more about unconditional and conditional cash transfers, about comparisons with the existing Samrdhi program, and about how a family's expenditures may not be exogenous to the schooling decision.
4. Prof. Oyama provided some comments at the defense date. He believed that Chapter 1 is too long, and the other chapters should be emphasized more. In this regard, Sisira added more material to the other chapters about background and methodology which I had earlier suggested he remove to make the papers as short as possible for journal submission. In particular, he added more about the theoretical foundations and assumptions behind the utility framework used in Chapters 2-4. Naturally, a dissertation can include more details than a published paper in a journal, so this makes sense to do.

Respectfully submitted,

Wade D. Pfau

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Chairman of Supervisory Committee,

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