

## Report on Ph.D. Thesis Defense

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Main referee	吉野 直行 (慶應義塾大学)
Referees	Minchung Hsu Roberto Leon-Gonzalez 大山 達雄 阿曾沼 多聞 (IMF)
Dissertation Title	Capital Flows in Thailand: Determinants and Policy Effectiveness

Result: Pass (subject to minor changes)

### 1. Abstract

The thesis studies the capital flows and focuses on the case of Thailand. The dissertation mainly includes two related research topics: (i) the determinants of capital flows in disaggregate gross terms, and (ii) the policy effectiveness towards portfolio capital flows. Concerning the first research topic, the author applies Bayesian Model Averaging (BMA) to study the determinants of capital flows by considering the model uncertainty and find the patterns of determinants across different types of capital flows. Regarding to the second topic, the author evaluates the effectiveness of an indirect capital control measure through taxing on domestic asset return by constructing a structural model. Two kind of representative assets are studied but in separate cases.

By connecting savers from capital-abundant countries and investors in capital-scare countries, capital flows have been generally viewed to help resources to be allocated more efficiently. However, the Asian experience has not been in full agreement with such a theoretical understanding: Asia exhibits a reverse direction by collectively net holding long-term assets of advanced economies, with higher saving rates than investment rates. Therefore, capital flows deserve a perspective beyond the existing theoretical guidance. The behavior of capital flows and the policy responses deserve a deeper insight. As each type has different providers and users, capital flows should be studied in disaggregate and gross terms. On the other hand, as policy makers try to manage capital flows, the effectiveness of direct or indirect capital control measures should also be examined.

Chapter 2 describes net capital flows in Asia and Thailand, as well as key macro

variables in Thailand. In Chapter 2, concerning Asia as a whole, FDI has been a stable source though it declines after the Global Financial Crisis (GFC), while other components of flows are relatively more volatile; debt flows have been increasing, while the portfolio flows within the region has been enhanced after the GFC. To understand capital flows in the context of a certain economy, I focus on the case of Thailand and introduce the key macro variables with the relevance to net capital flows.

Chapter 3 applies Bayesian Model Averaging (BMA) to study the inclusion probabilities and expected values of explanatory variables for disaggregated gross capital. From a set of explanatory variables both from internal and external factors, and focusing on different disaggregate gross capital flows, the findings show that there is no universal determinant among all flows and it supports the view that both the internal and external factors are important from a perspective of disaggregate gross flows. With regards to each type of disaggregate flows, the determinants are identified. Finally, the role of a more floating exchange rate regime in capital flows is examined and it contributes to the increase of capital flows as a whole.

Chapter 4 evaluates the effectiveness of an indirect capital control measure through taxing on domestic asset return by constructing a structural model. Assuming monetary authority follows an independent rule, the model shows that the tax either helps to depreciate exchange rate but encourage capital inflows, or discourage capital inflows but appreciate exchange rate, given different behaviors of domestic asset types. Consequently, the desired effects to both depreciate exchange rate and discourage capital inflows cannot be achieved at the same time, based on the parameters estimated from Thai economy.

The revised version of the PhD thesis captures all the comments made at the oral presentation. Substantial changes were made based on all the comments given by examiners of the thesis. The paper is accepted as PhD thesis.

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

In the dissertation, the author has targeted to study the capital flows and focus on the case of her home country-Thailand. The dissertation mainly includes two related research topics: the determinants of capital flows in disaggregate gross terms, and the policy effectiveness towards portfolio capital flows. Concerning the first research topic, the author applies Bayesian Model Averaging (BMA) to study the determinants of capital flows by considering the model uncertainty and find the patterns of determinants across different types of capital flows. Regarding to the second topic, the

author evaluates the effectiveness of an indirect capital control measure through taxing on domestic asset return by constructing a structural model. Two kind of representative assets are studied but in separate cases.

There were many questions and comments from her dissertation defense. Some had been answered and others should be further addressed afterwards. Upon the comments from the dissertation committee and external reviewer, the responses have been summarized in the following.

Comments: Title

- a. It may not be proper as “Essays on...” since each chapter are closely related to each other.

Response

- a. Response: the title has been changed to “ Capital Flows in Thailand: Determinants and Policy Effectiveness “ (Title page)

Comments: Chapter 3

- b. As cointegration relations may exist among macro variables, it should be tested and whether it should include the cointegration term in the regression model.
- c. The selection of instrumental variables in endogeneity tests should be clearly stated.
- d. The conclusions should be narrowed down by having focus on most important flows.

Responses:

- b. Cointegration test: both Johansen System Cointegration test and Single-Equation Cointegration test are conducted, and the reasons for not putting cointegration (error correction) term for the determinant study are explained, as well as the concern of extension to dynamic model with lags. (page 39-40)
- c. Endogeneity test / Exogeneity of IV: using the past values of time series as Instruments, the endogeneity of the regressors have been tested. The chosen instruments are exogenous in this case as the past values of time series are predetermined. (page 41)
- d. The conclusions have been narrowed down by mainly focusing on interpreting the portfolio flows. (page 45)

Comments: Chapter 4

- e. It may be interested to look into the loss function and compared these two

different cases

- f. The estimation of structural parameters should be done simultaneously and include both stock (equity) and bond (debt) market.
- g. Modeling the stock and bond market at the same time in the model.

Responses:

- e. One period loss and multi period loss (accumulated) have been calculated and added. (page 65)
- f. In the estimation of structural parameters for the economy, the equity market (stock market) and debt market (bond market) are included at the same time as the simultaneous equations system estimations have been used to explore the inter-relation among the equations by considering the error covariance matrix through three-stage simultaneous estimation. (page 60)
- g. Both stock market (equity-type) and bond markets (debt-type) have been considered, however, in separate cases. Due to there is already one non-arbitrage condition for domestic and foreign assets already exist in the model, allow both bond and stock assets exist at the same time requires an extra non-arbitrage condition between bond and stock. Additional variables may need to be added to differentiate the modeling of stock and bond assets (currently only a function of interest rate may extend to be a function of volatility in order to model both of them at the same time). In this connection, the whole model has to be reconstructed and derived. Due to the limited time, the author wishes to do it as her future research.

Comment: Chapter 5

- h. This chapter has only section and should be extended briefly.

Responses:

- h. One more sub-section for summary has been added. The implications of policy timing, magnitude are discussed. (page 69-70)

Additional revisions

- i. A small addition in Chapter 2 for Thai policy responses and participation of regional cooperation.(page 20)
- j. The chapter 3 has been further revised in terms of wording as a whole.

Future research to consider:

- k. Concerning the determinants study by comparing different countries, the author

will choose either Malaysia or Indonesia depending on data availability, which is within the same region, to extend her research for the capital flow determinants in future.