

Report on Ph.D. Thesis Defense

Ph.D. Candidate	Md. Mizanur Rahman
Main referee	Kaliappa Kalirajan
Referees	大来 洋一 大山 達雄 福島 隆司 James R. Rhodes バク・サンジュン（早稲田大学国際教養学部）
Dissertation Title	Essays on Regional Exchange Rate Management and Trade Integration in East Asia

Result: Pass (subject to minor changes)

Presentation and Result:

1. Mr. Rahman gave a one-hour presentation of his dissertation titled, “Essays on Regional Exchange Rate Management and Trade Integration in East Asia.” The presentation was attended by all the committee members, and more than 20 other participants. Following the presentation, the committee members and other participants raised questions and comments and Mr. Rahman replied to the best of their satisfaction.

2. A dissertation examination meeting followed the presentation. The full examination committee attended the meeting and reached to a unanimous decision that Mr. Rahman had successfully defended his thesis. The committee further agreed that the manuscript met the requisite professional standards and no major revision would be necessary. A few minor changes, mainly in the organization of the thesis could be easily incorporated and the manuscript could be ready for final submission in a week from the date of presentation. As I know it, Mr. Rahman has done those revisions and shall duly submit his manuscript to the GRIPS office. I am satisfied with his revisions.

Summary of Thesis:

The thesis is that vertical fragmentation of product value chain, which is an outcome of ‘globally integrated business strategy of multinational corporations,’ is the driving

force of growing economic interdependency in East Asia. The study conjectures that that East Asia is an optimum currency area but the countries have independent national currencies and conduct heterogeneous exchange rate and monetary policies. In this context, the study develops a theoretical framework and obtains empirical estimates of the trade effect of a fixed exchange rate system whereby East Asian countries achieve trend flexibility in their intra-regional real exchange rates. Specifically, the thesis comprises two independent essays.

The first essay is titled, “The impact of a common currency on East Asian production networks and China’s exports behavior.” It addresses the research question, “How would a regional currency affect exports that are produced along the regional production networks and exports that are produced mainly by using domestic inputs?” The testable hypothesis is that the effect of a fixed exchange rate system would be far greater for those exports that have stronger production network linkage. In order to test the hypothesis, the study estimates the effect of a common currency on China’s processing and ordinary exports separately. The distinction is necessary because the processing exports, unlike the ordinary exports, are produced along the regional production networks, with final stages of assembly and exporting being increasingly concentrated in China. The long-run effect on the processing exports of intra-regional RER flexibility, which is otherwise the lack of a regional currency, is almost nine times as large as the long-run effect of a unilateral RMB appreciation. By contrast, the corresponding long-run effect is statistically insignificant for the case of ordinary exports that are produced primarily by using local inputs. The long-run coefficient of this intra-regional RER flexibility implies that the actual volume of processing exports is 20 percent below the potential.

The other essay is titled, “The impact of real exchange rate flexibility on East Asian exports.” The essay examines if a choice of fixed-to-floating can be optimal for a national currency in East Asia. If the region itself is an optimum currency area, any regime choice for a national currency will prove non-optimal. The paper examines this proposition for export performances of China and Japan, because these two countries have respectively de facto peg and independently floating exchange rate regimes. The analytical framework considers long-run effect of bilateral real exchange rate and that of the intra-regional exchange rate flexibility on their exports. A long-run coefficient of the latter, if statistically and economically significant for countries regardless of their exchange rate regimes, would validate the hypothesis that region itself is an optimum

currency area, not the countries within the region. The findings indeed validate the hypothesis. The findings further imply that a regional currency basket mechanism would lessen the adverse effect of exchange rate flexibility and engineer a collective exchange rate adjustment for resolving global payment imbalance against East Asia.

Discussion and Comments by Committee Members

1. The Committee came to the unanimous agreement that the dissertation met professional standards for conferring a doctoral degree. The following are, however, the pertinent discussions and/or comments that took place in the presentation session.

2. One commentator praised the accomplishment of the thesis and asked for few clarifications. One of them was that if the adjustment term $\exp(d_t)^{\hat{\phi}^*} \rightarrow 1$, when either $d_t \rightarrow 0$ or $\hat{\phi}^* \rightarrow 0$ or both tended to zero. Mr. Rahman explained that it would be so.

The commentator later suggested that the expression written as $\left[\exp(d_t)\right]^{\hat{\phi}^*}$ would make no confusion. Prof. Kaliappa Kalirajan also provided the same clarification on the matter. Mr. Rahman gladly accepted their suggestions on the matter. The commentator

further inquired about the derivation of the inefficiency term (y_{it}/y_{it}^*) . Mr. Rahman

explained that the linear prediction $\hat{y}_{it} = f(\mathbf{x}_{it}, \hat{\beta})$ based on consistent model estimation

and the non-linear upward adjustment term $\left[\exp(d_t)^{\hat{\phi}^*}\right] \leq 1.0$ would jointly produce

the measure of potential volume of trade $y_{it}^* = \left(\hat{y}_{it} / \left[\exp(d_t)^{\hat{\phi}^*}\right]\right)$. Given that the estimated model gave unbiased prediction of trade volume, the trade inefficiency solely due to the exchange risk (i.e., due to the intra-regional RER flexibility between China

and the rest of East Asia) would be $(y_{it}/y_{it}^*) \leq 1.0$.

3. The second commentator expressed his utmost satisfaction regarding both the innovative conceptual framework and the empirical methodologies Mr. Rahman used in

his thesis in order to conduct an ex ante analysis of trade effect of a potential institutional arrangement, i.e., a fixed exchange rates system in East Asia. He also expressed his full satisfaction on consistency and efficiency of the estimates reported in the thesis. He inquired if similar views as the thesis argued for were shared by other East Asian policy makers and researchers. Mr. Rahman replied that the issue of a regional currency in East Asia was an empirical question. Policy makers and researchers in East Asia and elsewhere largely share the idea. The divergent views are common though.

4. The third commentator remarked that if the long-run point estimate of -8.465 reported in row (3) of Table 6 for the panel of processing exports was both consistent and efficient and if its dispersion would be regarded too large. Mr. Rahman replied that the long-run estimate was both consistent and efficient for the following specific reasons.

(a) It was based on consistent dynamic GMM estimates, where the order of the ADL terms was based on the observed minimum of Akaike and/or Schwartz Bayesian information criteria. The tests of first-order and second-order serial correlation in the first-differenced residuals were too consistent with the maintained assumption of no serial correlation. (b) The dynamic GMM estimates were obtained after controlling for both weak exogeneity of the included variables and the weak instrument problem. Sargan/Hansen test of overidentifying restrictions proved the null of instrument validity. In addition, the study conducted a broad class of robustness checks of key parameter estimates. First, the study examined the robustness by changing definitions of key variables (e.g., real exports and real exchange rates). The study thereby obtained six additional long-run system GMM estimates. The estimates remained consistent and asymptotically efficient across the variations. The study then obtained another set of system GMM estimates where the estimated model included the fixed-effect dummies in the levels equations. Contrary to what the time series properties of the observed data indicated, the study also obtained the first-differenced GMM estimators. The long-run estimates of key parameters remained largely comparable in terms of both consistency and efficiency. Finally, the dynamic model was augmented by including proxy for the supply-side effect. A select group of these dynamic estimates is reported in Table 8. The corresponding long-run estimates of key variables were found to be statistically significant and the dispersion of these estimates well remained within half-standard error of that reported in Table 6. Mr. Rahman thus provided credible evidence that the empirical results of his thesis were robust.

5. The fourth commentator remarked that he believed that the flexibility based on national currencies would increase intra-regional stability in East Asia. Mr. Rahman replied that this was an important school of thought on the matter. However, if the region itself tends to be an optimum currency area, the question of flexibility should be based on a regional currency rather than the flexibility based on national currencies within the region. The thesis validates the hypothesis in the case of East Asia.

6. The fifth commentator remarked whether some organization of the thesis needed to be realigned. For example, he said, the title page of each essay could stand alone. Mr. Rahman accepted the suggestion. The commentator, however, further remarked that the section titled, 'Conceptual framework of the study (p. 14),' should have explained the concepts in more descriptive terms. He suggested that several mathematical formulations could better be included in the section of estimation methodologies. Mr. Rahman replied that the conceptual framework in fact contained conceptual issues underlying the thesis. Sometimes they are explained in simple mathematical parlance in order to highlight the underlying logic with more clarity. A simple mathematical derivation saved dozens of words, but enhanced the logical coherence of the argument. Mr. Rahman thus believes that the conceptual framework and the estimation methodologies are logically organized and they did not overlap.

7. Overall, I examined the revised version of Mizan's thesis and am satisfied fully.