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East Asian Monetary Integration: an Empirical Assessment of the Optimum Currency Area Criteria

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5.1 Introduction

East Asian economies have exhibited high economic growth over the last several decades, while economic interdependence among them has grown substantially through trade and investment. The recent surge in free trade agreements (FTAs) in the East Asian region is further evidence of growing economic linkage. A natural question is, therefore, whether monetary arrangement is feasible in the East Asian region on the basis of this deepening interdependence. Whereas it is generally reckoned that most East Asian economies adopted the de facto US dollar pegged exchange rate system, the Asian currency crisis in 1997/98 focused renewed attention on regional exchange rate arrangements. It is currently a matter of much interest which exchange rate arrangement is most suitable for East Asian economies – independent floating, a basket pegged exchange rate, or a common currency. Before answering this question, we first need to explore whether East Asian economies meet the necessary preconditions for adopting a fixed exchange rate regime.

The theory of an optimum currency area (OCA) provides us with useful criteria to evaluate whether a fixed exchange rate or a common currency is feasible for the economies in question. Among the OCA criteria, the literature typically places particular emphasis on business cycle synchronization and/or symmetry in structural shocks between the economies concerned as major preconditions for forming a currency area. A large number of studies have applied the above OCA criterion to the European region, and there is recently a growing literature focusing on the East Asian region.

More specifically, these studies employ the structural vector autoregression (VAR) technique to identify fundamental shocks and then conduct a correlation analysis of shocks to assess which economies can form a currency area. Due to the problem in data availability for East Asian economies, however, most studies use annual data on output and prices with a relatively shorter sample period for the structural VAR analysis, which precludes us from taking into account possible changes in shock symmetry over time. In contrast,
although using a conventional two-variable VAR model, we use the quarterly series of real outputs and prices over a longer sample period of 1975Q1–2003Q4. By dividing the whole sample into subsamples and then identifying the shocks for each subperiod, we examine whether the symmetry in shocks has changed over the last three decades.

In addition, we attempt to investigate the costs involved in forming a currency area. If countries start to fix their currency values relative to each other or adopt a common currency, they typically abandon national autonomy in monetary policy and instead follow common stabilization policies within the currency area. Accordingly, the costs of forming a currency area either with fixed exchange rates or a common currency will be quite large if each economy encounters idiosyncratic shocks. By employing the output loss function analysis proposed by Ghosh and Wolf (1994), we compare the costs of renouncing autonomous monetary policy between several groups of economies that are suggested as possible candidates for forming a currency area using our analysis of shock correlation.

The remainder of this chapter is organized as follows. Section 5.2 reviews the theory of OCA. Section 5.3 makes a preliminary analysis of whether East Asian economies meet the OCA criteria. Section 5.4 discusses the analytical model and presents the results of empirical research. Finally, Section 5.5 concludes the chapter.

5.2 The theory of the optimum currency area

An optimum currency area (OCA) can be defined as “the ‘optimum’ geographical domain having as a general means of payments either a single common currency or several currencies whose exchange values are immutably pegged to one another with unlimited convertibility for both current and capital transactions” (Kawai 1987: 740). A key assumption of OCA theory is that of downward rigidity in nominal prices and wages. If a country suffers from price and wage rigidities, it would be more beneficial to adopt flexible exchange rates, because any policy implemented to correct a current account imbalance would lead to unemployment or inflation under fixed exchange rates. However, if a country is highly integrated with the outside world in trade and financial transactions, factor mobility, etc., fixed exchange rates may reconcile internal and external balances more efficiently than flexible exchange rates.

To form a currency area, which conditions does the OCA theory suggest countries meet? Existing studies commonly propose the following as the qualifying OCA criteria:

- Openness and goods market integration
- Factor market integration
- Business cycle synchronization and symmetry in shocks