



Trade intensity and business cycle synchronization: East Asia versus Europe

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ABSTRACT

This paper provides a comparative analysis of the relationship between trade intensities and synchronization of business cycles in East Asia and Europe (EU-15). It extends the work of Shin and Wang (2004, 2005) by providing a comparative perspective between East Asia and Europe. The paper finds that intra-industry trade, rather than inter-industry trade, is the major factor in explaining business cycle co-movements in both regions. The paper also supports the hypothesis that the relationship between trade intensity and output co-movement is stronger in East Asia than in Europe. The major policy implication of this finding is that East Asia needs to further strengthen macroeconomic policy coordination within the region.

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1. Introduction

Unlike Europe where political will to integrate was strong and supra-national institutions led to integrated economies, economic integration in East Asia was essentially market-led. It is only after the Asian financial crisis that East Asia started to supplement market-led integration with various official schemes to promote regional integration. The factors that led to this change in policy stance are discussed in ADB (2008) and Rana (2009), among others. These studies find that trade integration within East Asia has deepened considerably and the share of total trade conducted within it is over one-half in recent years. East Asia is now broadly as interdependent in trade as Europe and North America are.

The objective of this paper is to examine whether rising trade intensities among the countries in East Asia and Europe has led to more synchronization of business cycles. If so, is such synchronization higher in East Asia or Europe? This topic is important because if trade integration among countries in the region has led to increased output co-movement, it would provide a strong case for macroeconomic policy coordination.

Industrial structures in East Asia are more diverse than in Europe. The development path followed the “flying geese pattern” (Akamatsu, 1962) which involved the transfer of export markets from the more advanced to less advanced countries. Japan began as a producer of low-priced final consumer goods and later moved on to capital-intensive intermediates and capital goods as labor costs increased. It also shed low-productivity production to the second-generation countries, generally the newly industrializing economies (NIEs) comprising Hong Kong, Korea, Taiwan, and Singapore, as

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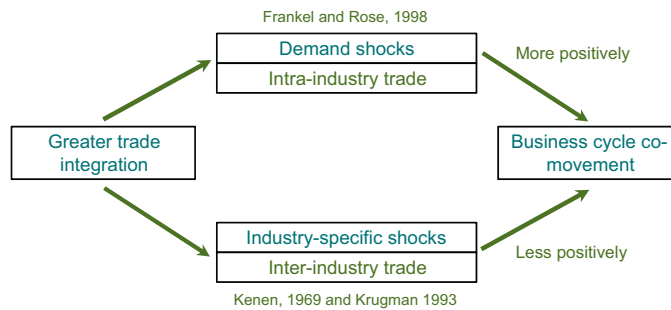


Fig. 1. Impact of greater trade integration on business cycle co-movement.

producers invested and relocated to these countries. Thereby, the second generation countries moved into the vacated consumer goods assembly in the 1960s. Similarly, in the 1970s and the 1980s, the third generation countries, including Indonesia, Malaysia, Philippines, and Thailand, and the fourth generation countries, namely China and Vietnam, moved in to fill the gaps left by the NIEs.

The traditional production networks in East Asia were triangular where Japan and the NIEs exported component parts for electrical appliances, office and telecom equipment and textiles and garments industry to China and the third generation countries which in turn completed the processing and exported the final product to markets in the US and Europe. Since the mid-1990s, more sophisticated and complex production networks have emerged which involve transshipment of components, back and forth, across East Asia (Gill & Kharas, 2007).

On the contrary, Europe industrial structures are more homogeneous and less vertically integrated. Using data from Athukorala and Kohpaiboon (2008), Baldwin and Carpenter (2010) estimate that in East Asia 71% of all its exports of parts and components in the manufacturing sector go to East Asia itself whereas the share of parts and components in EU-15's intra-regional trade is only 56%.

The impact of trade intensity on business cycle synchronization is theoretically ambiguous.

According to Frankel and Rose (1998), an output surge in one country can generate increased demand for imports, boosting economies abroad. Through these types of spillover effects, stronger trade flows result in more highly correlated business cycles across countries. Kenen (1969) and Krugman (1993), however, claims that trade flows could also induce increased specialization of production resulting in changes in the nature of business cycle correlations. If stronger trade flows are associated with increased inter-industry specialization across countries, and industry-specific shocks are important in driving business cycles, then international business cycle co-movement might be lower. Fig. 1 summarizes the economic prediction on the impact of trade integration on business cycle co-movement. Although the theoretical implications are not clear, empirical investigations help to test the validity of these theoretical predictions.

Although Frankel and Rose (1998) recognize the possible contrasting effects of inter- and intra-industry trade on business cycle synchronization, they continue to focus on the net effect of total trade on output co-movement. Many studies subsequently extend and complement the evidence presented by Frankel and Rose (1998) by analyzing the impact of intra-industry trade intensity on business cycle synchronization (Calderón, Chong, & Stein, 2007; Inklaar, Jong-A-Pin, & Haan, 2008; Shin & Wang, 2004). Shin and Wang (2004) find that intra-industry trade is the major channel by which Korea's business cycle becomes synchronized with that of other Asian economies, although increased trade itself does not necessarily lead to close business cycle coherence. In their study, Shin and Wang (2004) examines four different possible channels of trade affecting business cycle co-movement: inter-industry trade, intra-industry trade, demand spillovers and policy coordination. Theoretically, only the first channel implies that increased trade leads to less synchronization of business cycles, while the other channels show that increased trade induces more synchronization. Empirically, Shin and Wang (2004) run both pooled and panel regressions using data from twelve Asian economies for the period of 1976–1997 and show that the signs of coefficients are consistent with theoretical prediction, however, only intra-industry trade has a significant coefficient which suggests that business cycle co-movements are strengthened only when increased trade is of intra-industry type. In this paper we extend Shin and Wang (2004) by providing a comparative analysis of East Asia and Europe so that the above hypothesis can be tested using a common framework.

Our main findings are the followings. First, intra-industry trade rather than inter-industry trade is found to be the major factor in affecting business cycle synchronization in both East Asia and Europe. Second, the effect of intra-industry trade on business cycle synchronization for East Asia is found to be higher than the one for Europe.

The structure of the paper is organized as follows. Section 2 provides some literature review regarding the relationship between trade integration and the synchronization of business cycles. Section 3 discusses the data and presents the econometric methodology used in estimating trade intensity and business cycle synchronizations in East Asia and Europe. Section 4 presents empirical results and findings. Finally, Section 5 concludes with policy implications.

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