



Business cycles synchronization in East Asia: A Markov-switching approach[☆]

Gilles Dufrenot^{a,*}, Benjamin Keddad^{b,*}

^a Aix-Marseille Université (AMSE & CNRS & EHESS), Banque de France and CEPII, France

^b ESG Management School, Paris, France



ARTICLE INFO

Article history:

Accepted 1 July 2014

Available online xxxx

Keywords:

OCA

East Asia

Business cycles synchronization

Monetary union

Markov-switching

ABSTRACT

This paper attempts to analyze the relationships between the ASEAN-5's business cycles. We examine the nature of business cycle synchronization trying to disentangle between intraregional and interregional synchronization by considering the important role of China, Japan and the US in synchronizing the activity within the ASEAN-5. We employ a time-varying transition probability Markov switching framework in order to allow the degree of synchronization to fluctuate across the phases of the business cycles. We provide evidence that the signals contained in some regional and global leading business cycles can impact the ASEAN-5's business cycles.

© 2014 Elsevier B.V. All rights reserved.

1. Introduction

Over the last decades, regionalism has risen rapidly in various parts of the world and more specifically in East Asia.¹ Regional cooperation and integration in trade, investment, finance and money areas are actually perceived as the best strategies for reducing poverty, enhancing macroeconomic stability and promoting growth within the region. The Association of Southeast Asian Nations (ASEAN) Free Trade Agreement (AFTA), initiated in 1992, remains the most visible sign of closer cooperation among East Asian countries. More recently, other mechanisms including China, Japan and South Korea were established such as the ASEAN-China FTA (ACFTA, 2010), the ASEAN-South Korea FTA (AKFTA, 2010) and the ASEAN-Japan Comprehensive Economic Partnership (AJCEP, 2007), while China, Japan and South Korea are currently examining the possibility of forging a trilateral FTA. As a result, intra-regional trade has grown substantially over the last three decades. Along with these developments, the question of monetary integration has gained momentum after the Asian financial crisis considering the financial fragility induced by the US dollar peg. Since then, the East

Asian finance ministers agreed upon the need to achieve intra-regional exchange rate stability in order to avoid real exchange rate appreciation of their currency and its disruptive effect on competitiveness. For many researchers, this stability has become crucial for East Asian countries given their rising degree of trade integration and their export-led growth strategy (see, e.g., Kawai, 2005). In this regard, the Asian Development Bank (ADB) has proposed in 2006 the creation of the Asian currency unit (ACU) as a benchmark to monitor movements of regional exchange rates.² Since the adoption of a newly single currency is at least a long-term objective, several less demanding options have been suggested like a collective pegging to the US dollar (McKinnon, 2005), the yen (Kwan, 2001), or the yuan (Hefeker and Nabor, 2005; Park, 2010). Some economists have also considered the possibility of a basket peg composed of international currencies (Williamson, 2005) or even regional currencies (Keddad, 2013; Ogawa and Shimizu, 2006).

The choice of an exchange rate regime is generally studied in light of the Optimum Currency Areas theory (OCA) which examines the conditions under which two countries can find a gain in adopting a single currency or fixing their exchange rates. The arguments are generally based on the comparison between the costs and gains from fixed and flexible exchange rate regimes (see, e.g., Kenen, 1969; Mundell, 1961; McKinnon, 1963).³ From the perspective of the OCA theory, the costs

[☆] We would like to thank two anonymous referees for careful reading of the paper and very helpful suggestions.

* Corresponding authors at: Aix-Marseille School of Economics, Aix-Marseille University, Château La Farge, Route des Milles, 13290 Aix-en-Provence, France. Tel.: +33 4 42 93 59 60; fax: +33 4 42 38 95 85.

E-mail addresses: gilles.dufrenot@univ-amu.fr (G. Dufrenot), b.keddad@gmail.com (B. Keddad).

¹ East Asia generally refers to Indonesia, Malaysia, Thailand, Singapore, the Philippines, Brunei Darussalam, Cambodia, Laos, Myanmar, Vietnam, Republic of Korea, Hong Kong, Taipei, Japan, and China. However, the ASEAN-5 (Indonesia, Malaysia, Thailand, Singapore and the Philippines), as well as Japan and China provide the focus of the paper.

² Important efforts were also undertaken to improve regional economic surveillance (i.e. the Economic Review and Policy Dialog in 1999, ERPDI), promote the development of local-currency bond markets (i.e. the Asian Bond Markets initiative and the Asian Bond Funds in 2003, ABMI and ABF) and establish a network of currency swap arrangements (i.e. the newly established Chiang Mai Initiative Multilateralized in 2009, CMIM).

³ As Volz (2010) points out, the factors affecting the trade-off between a float and peg regime, or a float regime and monetary union are analytically the same.

of joining a monetary union are essentially the loss of the ability to conduct an independent monetary policy as an adjustment instrument to manage the performance of the economy. Indeed, without capital controls, a pegged exchange rate implies that monetary policy is only devoted to maintaining an exchange rate target which is generally incompatible with an internal target such as countercyclical policies. For instance, under floating exchange rate regime the central bank could initiate an expansionary monetary policy to stabilize output in the face of negative shocks. Conversely, easing the monetary policy would be incompatible under fixed exchange rate regime because increasing money supply would weaken the currency's external value as well as international reserves, thus undermining the peg's credibility. The decision to abandon its national currency by entering a monetary union implies, therefore, the complete loss of monetary sovereignty in favor of a common monetary policy that cannot be tailored to the need of any particular country within the currency area. Conversely, abandoning an independent monetary policy would be less costly if participants experience synchronous shocks or cycles, because the use of the exchange rate as a policy instrument to manage individual disturbances would be unnecessary. Consequently, the cost of giving up an autonomous monetary policy, or the desirability of joining a currency area, is inversely related to the synchronization of candidates' business cycles.

Since it is generally perceived as being of primary importance for the sustainability of a monetary union, East Asian business cycles synchronization has been largely studied. However, the empirical literature remains inconclusive. For instance, Bayoumi and Eichengreen (1994) find that supply shocks are symmetric, on the one hand, among Singapore, Malaysia, Indonesia and Hong Kong, and on the other hand, among Japan, Taiwan and South Korea. Chow and Kim (2003) find that domestic outputs of East Asian countries are strongly influenced by country-specific shocks while regional shocks are far more important in European countries that have joined the Economic and Monetary Union. Additionally, Genberg and Siklos (2010) do not clearly identify a group of countries for which shocks are unambiguously highly correlated, while Lee and Koh (2012) suggest that there is a scope among ASEAN countries for potential monetary integration. Also, the authors underline that the symmetry of shocks have increased after the 1997–98 financial crisis. Using cointegration techniques, Sato and Zhang (2006) find that some pair-countries in the region share both long-run and short-run synchronous movements of the real outputs, particularly within the ASEAN economies consisting of Singapore, Thailand and Indonesia, and the Northeast Asian region, which consists of Hong Kong, Korea, Mainland China, Japan and Taiwan. Socorro Gochoco-Bautista (2008) analyzes whether the common output fluctuation in East Asia is statistically significant in regressions explaining each country's output fluctuations. The author's findings indicate that there is a significant regional factor that explains the movement of East Asian business cycles. Moneta and Ruffer (2009) find a significant common growth dynamic inside the region using a state-space framework where a common movement is captured by unobservable variables influencing the evolution of the GDP growths. Allegret and Essaadi (2011) introduce a spectral analysis based on the time-varying coherence function and find the presence of a common cycle only at long-run frequency. At short-run, they find significant differences explained by different economic policy regimes. Lee and Azali (2012) examine regional and country-specific cycles simultaneously with the world business cycle by employing the Bayesian state-space based approach. The authors find an increasing role of region factor although country-specific factors are significant. Girardin (2004) and Girardin (2005) use Markov-switching techniques, assuming that synchronization of East Asian growth cycles is regime-dependent. His findings do not support a monetary arrangement involving the yen, as East Asian countries are not fully synchronized with Japan. Moreover, according to the author, China would be a better candidate for monetary integration with East Asian countries with Japan. Finally, some studies have emphasized the role of trade flows

in synchronizing economic fluctuations in East Asia (see, e.g., Lee and Azali, 2010; Rana, 2007; Shin and Sohn, 2006).

This paper provides a new approach of business cycles synchronization by considering the asymmetric nature of business cycles. We wonder whether cross-country synchronization differs between expansions and contractions, or between high-growth and low-growth regimes. We identify which leading cycles are helpful indicators in the prediction of turning points. To this end, we use a Markov-switching model with Time-Varying Transition Probabilities (TVTPMS model). First, the model takes into account the nonlinearity and the transitional dynamic of the business cycles synchronization process. This suggests that synchronization is conditioned by the state of the cycle. Second, the model assumes a notion of causality in the GRANGER sense among business cycles which consider that the effects of expansions and contractions in one country can spill over to the other countries. Accordingly, the leading variable acts as a forewarning indicator, informative with regard to detecting the expansion and recession phases in other countries. This allows for identifying which countries are leaders or followers in terms of business cycles synchronization. Third, the regimes are determined endogenously by the data while many previous studies choose exogenously and arbitrarily structural change dates. Fourth, we can identify whether the influence of the leading variable has increased or decreased at a particular point in time.

There are two potential causes of business cycles synchronization that are important for policy purposes. First, we investigate the hypothesis of contractions and expansions in one country spilling over to other ASEAN-5 countries. The driving forces behind such a phenomenon have been investigated in the literature: trade integration within the ASEAN-5, inter- and intra-industry linkages, and comovements in demand components. These factors explain why the juncture in the ASEAN-5 countries could be driven by a regional joint business cycle. In our framework, this means that an individual country's business cycle can be seen as a leading cycle of the other countries' business cycles. However, co-movements between the ASEAN-5's business cycles could also reflect the impact of increased globalization, the driving factor being a third country's cycle, typically Japan's, the United States' or China's, since these countries are their main trading partners. To confirm the presence of an ASEAN-5 regional cycle, we estimate the common growth cycle with the aim of testing its informational content on each country-specific cycle. Finally, we examine whether the ASEAN-5 (i.e. the regional cycle) is sensitive to some of the world's major industrial countries (China, Japan and the US). Given the leadership role of these countries in driving regional integration process, the extent to which the ASEAN-5 is affected by the cyclical movements in these world's major economies needs to be investigated. This issue is particularly important in regard to the possibility of a monetary arrangement institutionalized around the Japanese yen, the Chinese yuan or the US dollar.

The remainder of the paper is organized as follows. Section 2 presents the model and describes the data. Section 3 contains the empirical results and Section 4 concludes.

2. Data and methodology

2.1. Data

We use quarterly data of the real GDP growth rate of the ASEAN-5 countries, namely Malaysia, Indonesia, the Philippines, Thailand and Singapore. As original members and most advanced ASEAN economies, these five countries are more likely to initiate a multilateral negotiating forum for strengthening monetary integration. The data begins in the first quarter of 1975 and ends in the second quarter of 2010. Accordingly, our sample covers the years historically documented as those of crises (regional and global) as well as the period during which the East Asian countries have experienced a rapid rise of their economy. The GDP series are taken from the countries' national offices and from the University of

Download English Version:

<https://daneshyari.com/en/article/5054018>

Download Persian Version:

<https://daneshyari.com/article/5054018>

[Daneshyari.com](https://daneshyari.com)