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Examining the exchange rate regime–monetary policy autonomy nexus: Evidence from Malaysia

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ABSTRACT

Some studies suggest that Asian countries can be exempted from the impossible trinity. We examined the empirical relevance of this argument by reviewing the experience of Malaysia. We defined monetary autonomy by analyzing the interaction between the Malaysian and US interest rates. We used the Unrestricted Error Correction Model Pesaran Bounds test to analyze the interaction between the Malaysian and US interest rates during three different sub periods. Our empirical results showed that there is no cointegration evidence during the managed floating exchange rate periods. However, we found that there was a level relationship between the Malaysian and US interest rates during the period when Malaysia had a fixed exchange rate and an open capital account regime. In contrast with other existing studies, we conclude that Malaysia is not exempted from the impossible trinity. Our study has also highlighted that the Pesaran Bounds test must be interpreted carefully when applied to series with mixed orders of integration.

1. Introduction

The impossible trinity (or trilemma of international finance) postulates that a central bank cannot conduct an independent monetary policy while simultaneously maintaining a fixed exchange rate regime and an open capital account. At any one time, it can only choose two of these three policy objectives. Empirical examination of this theory is not abundant. Obstfeld et al. (2005) found that the trilemma makes sense as a guiding policy framework. Focused on a large group of countries, they found that countries without a pegged exchange rate and capital controls would retain their monetary autonomy, whereas countries with a pegged exchange rate and no capital controls would lose significant monetary independence. Similarly, Klein and Shambaugh (2013) provided supporting evidence that countries with extensive capital restrictions or flexible exchange rates do have monetary autonomy. However, there are studies that contend that Asian countries are exempted from the impossible trinity. Fry (1988) and Reisent (1993) are among the first studies which argued that Asian economies have successfully maintained an open capital account, an exchange rate target and an independent monetary policy. Both studies claimed that these economies have overcome the “impossible trinity”. Their argument is also supported by other studies such as Takagawa (2005), Latifah (2005), Umezaki (2007) and Volz (2010). Two recent studies that focused on Asian countries found it otherwise. Using non-linear functions to test the trilemma hypothesis, Yu Hsing

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(2012) found that there is support for the trilemma for Malaysia, the Philippines and Singapore, but a lack of evidence of the trilemma for Indonesia and Thailand. Examining the interest rate transmission from the US to a group of Asian countries before and after the onset of the global financial crisis, Chow (2014) also found that some Asian economies were constrained by the trilemma.

Looking at the mixed results on the trilemma in Asia, the objective of this paper is to provide further evidence by examining the experience of Malaysia, an emerging market that has selected alternative policy mixes during different time periods. During the Asian Currency Crisis (ACC), it abandoned its managed float and open capital regime in 1998 to impose a fixed exchange rate (against the US dollar) and selective capital controls so as to fend off the speculative attacks on the currency. In the 2000s, after the ACC ended, Bank Negara Malaysia (BNM), the central bank of Malaysia, kept the fixed exchange rates but gradually lifted its capital controls through May 2001. From then on, it kept a fixed rate/open capital markets combination until July 2005, when it switched back to the original managed float/open capital regime till the present.

This diverse experience of BNM is ideal for assessing the impact of the Trilemma during the peg/open capital period of 2001–2005, as well as the impact of exchange rate flexibility on monetary autonomy under managed floating from 2005 onwards. According to the Trilemma, we would expect that BNM would likely lose its monetary autonomy in 2001–2005 (the fixed exchange rate period) but the renewed exchange flexibility under managed floating should have restored some measure of monetary autonomy. By monetary independence meant the ability of a nation to set its own interest rate as an economic policy instrument, and not follow the rates of the base country. Frankel (1999), Frankel et al. (2004), Shambaugh (2004), and Kim and Lee (2008) provided empirical evidence of economies having fixed exchange rate regimes experiencing stronger correlations between domestic and foreign interest rate changes as opposed to countries with flexible exchange rate regimes.

The objective of this paper is to shed some insights into Malaysia's dependence on US monetary policy based on interest rate interactions between these two countries. We are particularly interested in examining the relation between the Malaysian and US interest rates from 2001.5 till 2005.6, when Malaysia had a fixed exchange rate and an open capital account, by using cointegration techniques. It is hypothesized that, during this period, interest rates in Malaysia should move closely in the long run with the interest rates in US, which is the anchor currency country. Hence, we should find evidence of cointegration during this period. As a counterfactual case, when Malaysia moved to a managed float on 21 July 2005, we would expect Malaysia to retain some monetary autonomy. Monetary autonomy implies that Malaysia's interest rate does not need to move closely with the US interest rate, so that no cointegration should be observed after the peg was abandoned.

Existing literature suggests that Malaysia has been successful in overcoming the trinity's constraints, for instance, Fry (1988), Gan and Kwek (1994), Takagawa (2005), Latifah (2005),[2] Umezaki (2007), and Volz (2010). Yu Hsing (2012) and Goh (2010)[3] found that Malaysia may not be exempted from the trinity's constraints. However, their studies combined data from periods of different policy regimes, so one cannot isolate the period when monetary independence was compatible with the trinity. Our paper differs from the above studies. We split our sample (January 1991 through November 2012) into three sub periods based on the exchange rate regime. During the first (January 1991–August 1998) and third (July 2005–November 2012) periods Malaysia followed a managed float policy, while a fixed exchange rate was imposed in the second period (May 2001–June 2005). In all these three sub-periods, the capital account is relatively open. We defined the second period when the exchange rate was fixed to the dollar and the capital account was open. Based on the impossible trinity Malaysia had to abandon monetary autonomy during this period.

This period has not been the focus of study by others except for Lim and Goh (2011). Using dummy variables to capture the different sub-periods, they estimated the capital account offset and sterilization coefficient for BNM and found that the central bank possessed some short-run control over its monetary policy under fixed exchange rates and an open capital account regime. However, the long-run offset coefficient was not significantly less than unity. These results show that Malaysia was not exempted from the impossible trinity during the fixed exchange rates except in the very short-run. However, Lim and Goh (2011) adopted the theoretical framework derived from the modification of the model of Brissimis et al. (2002), which defines the central bank's net domestic assets as its monetary policy instrument. This assumption may not hold as BNM shifted its monetary policy strategy from monetary targeting towards interest rate targeting in the mid-1990s. There is, therefore, clearly a gap in the literature in explaining how much monetary independence BNM has experienced based on the relation between the Malaysian and US interest rates. Our in-depth analysis on one country, operating under alternative policy regimes over different periods, could usefully contribute additional evidence to the existing literature on the impossible trinity.

To ensure that our inferences are robust, we employed a battery of cointegration tests appropriate under the assumption of weak exogeneity, in particular, the Unrestricted Error Correction Model (UECM) Pesaran Bounds test. Weak exogeneity of the US interest rate is a tenable assumption since it is unlikely that US monetary policy or macroeconomic activity is influenced by the small economy of Malaysia. An important consideration in empirical modeling is detecting and dealing with structural breaks. We split our sample into three sub periods to accommodate the different exchange rate regimes. However, there is still a possibility of additional economic shocks causing structural breaks even within any of the three sub-periods. Both the Zivot-Andrew (henceforth ZA) (1992), and Lee-Strazicich (henceforth LS) (2003, 2004) tests identified several break points in the Malaysian interest rate data that are consistent

[2] Latifah was a BNM Assistant Governor from 1996–2004. Her paper descriptively analyzes the reasons for BNM's success in escaping from the trilemma due to the fact that portfolio capital inflows into Malaysia were not excessive in the 2000s as compared to the 1990s, despite higher domestic interest rates relative to foreign rates. In addition, Malaysia's policy not to internationalize its Ringgit since 1 Sept 1998 has helped to prevent destabilizing capital flows. As a result, the foreign exchange reserves accumulated by BNM in the 2000s tended to reflect current account flows rather than financial flows.

[3] Goh (2010) takes a different approach. This paper descriptively explains how Malaysia adopted an intermediate regime, namely, a managed float or capital controls to manage the three Trilemma's goals simultaneously. At the end of the paper, the author conjectured that BNM lifted the exchange rate pegged in 2005 because Malaysia could not escape from the trilemma during the pegged exchange rate regime.