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DRIVERS OF RESERVES ACCUMULATION IN THE SOUTH EAST ASIAN COUNTRIES

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Table of Contents

Abstract

Most of the developing countries in the past were striving to maintain a comfortable level of foreign exchange reserves sufficient to cover imports of goods and services. These days, several emerging economies hold a high volume of foreign exchange reserves. This paper reviews the foreign exchange reserves accumulation trends in the South East Asian countries and investigates the major causes behind the surge in foreign exchange reserves in these economies. The empirical test results suggest that economic growth is the main driver of reserves accumulation in the South East Asian countries and the direction of impact of other factors on reserves accumulation differ according to the structure of trade and capital flows of the respective countries.

Keywords: Foreign Exchange Reserves, Reserve Management, South East Asian Countries, ARDL Method

JEL Classification: C12, E58, F31, O53

DRIVERS OF RESERVES ACCUMULATION IN THE SOUTH EAST ASIAN COUNTRIES

1. Introduction

Traditionally, countries maintained sufficient level of foreign exchange reserves to meet the payment obligations for the imports of goods and services and external debt. The main objective was to maintain a smooth supply of foreign goods and services and maintain creditworthiness of the country. However, in modern times, foreign exchange reserves serve various other purposes in addition to meeting above payment obligations. Central banks hold reserves to perform monetary policy functions such as exchange rate intervention and domestic liquidity operations. Reserves are also used in banking and fund management functions.

Borio et al. (2008) list the potential uses of foreign exchange reserves as (i) intervention in the foreign exchange market with a view to influencing the exchange rate; (ii) execution of payments for goods and services; (iii) granting of emergency liquidity assistance to key sectors of the economy; (iv) underpinning of investor confidence in the country's ability to meet its foreign exchange commitments; (v) execution of payments for the government in the context of broader debt management operations; and, (vi) support of domestic monetary policy liquidity management operations.

According to Aizenman and Lee (2007), hoarding international reserves can be viewed as a precautionary adjustment, reflecting the desire for self insurance against exposure to future sudden stops. This view, however, contradicts with the mercantilist view which claims that international reserves accumulations are mainly triggered by concerns about export competitiveness. Jeanne and Ranciere (2011) argue that the main benefit of reserves is to allow the government to smooth domestic absorption in crises. Garcia and Soto (2006) view that reserves accumulation can help in dealing with the macroeconomic conditions. For Alfaro and Kanczuk (2009), the main role of reserves

is to act as a buffer stock, useful for consumption smoothing even when the sovereign is excluded from capital markets.

The main objective of this paper is to analyze the causes behind the surge in reserves in the South East Asian region. In this regard, reserves accumulation trends in the six emerging South East Asian countries are analyzed and the major causes behind reserves accumulation in these countries are empirically investigated. The countries included in this study are Indonesia, Korea, Malaysia, Philippines, Singapore and Thailand.

The rest of the paper is organized as follows. Section 2 presents a brief literature survey on the key aspects of foreign exchange reserves. Section 3 discusses recent trends in reserves accumulation in the selected South East Asian countries. Section 4 conducts empirical investigation on the determinants of reserves accumulation in these countries. Finally, Section 5 presents concluding remarks.

2. Literature Survey

2.1 Cost and Optimal Level of Reserves

Foreign exchange reserves provide various benefits but they also incur various costs to the economy. One of the major costs of holding reserves is that they yield a lower return than the interest rate that the government must pay on its long term external liabilities (Jeanne and Ranciere, 2011). Reserves are generally invested in highly liquid and low return assets such as the US Treasury securities. This implies that the returns on reserves may be lower than the returns on alternative investments at home. According to Rodrik (2006), the cost of reserves accumulation is close to 1% of GDP. Ramaswamy (2008), however, argues that for a number of countries, holding foreign exchange reserves may actually have provided an additional source of government revenue and the net financial costs might have been mostly negative.

As mentioned above, reserves incur various costs to the economy. Therefore, it is in the favour of economies to maintain an optimal level

of reserves. The traditional rule of thumb for central banks was that they should hold a quantity of foreign exchange reserves equivalent to three months of imports (Rodrik, 2006). More recently, emerging economies are referring to Guidotti-Greenspan rule in determining the optimal level of reserves. The Guidotti-Greenspan rule maintains that reserves should be sufficient to fully cover the total short term debt, which means a ratio of reserves to short-term debt of 1.

Rodrik and Velasco (2000) demonstrate that a country that abides by the Guidotti-Greenspan rule of holding reserves equal to at least its short-term debt reduces the probability of experiencing a sharp reversal in capital flows by 10 percentage points on average. Garcia and Soto (2006) also find that the ratio of reserves to short-term debt is robust in explaining international crisis. Jeanne and Ranciere (2011) argue that the recent build up of reserves in Asia seems in excess of what would be implied by an insurance motive against sudden stops. Lane and Burke (2001) find that smaller developed countries hold higher reserves than larger countries and highly indebted developing countries hold less reserves. Alfaro and Kanczuk (2009) argue that the optimal policy is not to hold reserves at all.

2.2 Consequences and Drivers of Reserves Accumulation

The accumulation of large scale reserves has various implications for the domestic financial system and the economy. Mahony and Turner (2006) argue that the financing of the prolonged and substantial accumulation of foreign exchange reserves affects the balance sheets of the central bank, the banking system and the private sector. The balance sheet effects arising from the valuation losses due to currency appreciation might reduce the effectiveness of sterilisation, with possible inflationary implications. Continued reserves accumulation may also lead to overinvestment, asset price bubbles, complications in the management of monetary policy, segmentation of the public debt market and misallocation of bank lending (European Central Bank, 2006). Garcia and Soto (2006) pose the view that large reserves stocks may create moral hazard problem that could weaken the financial system of a country.

According to European Central Bank (2006), the fundamental drivers of reserves accumulation include (i) desire to self insure against financial crises; (ii) the pursuit of export led growth supported by exchange rates anchored to the US dollar; and (iii) the combined effect of a number of features related to the domestic financial structure. Borio et al. (2008) point out to two sources of foreign exchange reserves accumulation. These are (i) accumulation as a deliberate attempt to build the stock up in order to meet potential future uses and (ii) accumulation as a by-product of the implementation of policies aimed at managing the exchange rate and which require adjustments in that stock.

The precautionary approach links reserves accumulation directly to exposure to sudden stops, capital flight, and volatility. On the contrary, the mercantilist approach views reserves accumulation as a residual of an industrial policy, which could impose negative externalities on other trading partners. Aizenman and Lee (2007) suggest that the self insurance motive has been predominant as a driver of reserves accumulation in developing countries. However, Rodrik (2006) argues that the rapid rise in reserves in recent years has little to do with the self insurance motive, but is instead related to policy makers' desire to prevent the appreciation of their currencies and maintain the competitiveness of their tradable sectors. For Dooley et al. (2004), reserves accumulation is a by-product of promoting exports, which is needed to create better jobs, thereby absorbing abundant labour in traditional sectors.

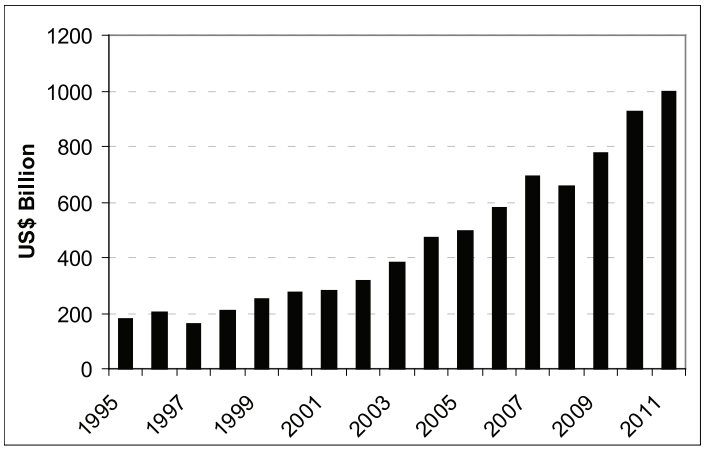
Aizenman and Lee (2007) find that variables associated with trade openness and exposure to financial crises are both statistically and economically important in explaining reserves. In contrast, variables associated with mercantilist concerns are statistically significant, but economically insignificant in accounting for the patterns of hoarding reserves. Bastourre et al. (2009) use a panel data of 139 countries for the period 1973-2003 and suggest that financial openness and economic development are more important determinants than exchange rate flexibility in order to explain recent reserves accumulation. Ozyildirim and Yaman (2005) argue that the weaknesses in the financial structure necessitate more foreign reserves to prevent the country from possible

economic and financial shocks. Delatte and Fouquau (2011) view the recent surge in international reserves in the emerging countries as a consequence of US macroeconomic imbalances.

3. Recent Trends in Reserves Accumulation

Total reserves held by six South East Asian countries: Indonesia, Korea, Malaysia, Philippines, Singapore and Thailand saw a gradual increase after the financial crisis of 1997 until 2002 and a significant increase thereafter until 2007. As a result of the global financial crisis that erupted in 2007, reserves observed a decline in 2008 but picked up again in 2009 and continued to surge afterward. The total reserves of these countries reached US$695 billion in 2007 from US$160 billion in 1997, but declined to US$655 billion in 2008 and then increased again significantly reaching US$997 billion in 2011 (Figure 1).

Figure 1
Reserves Accumulation Trend

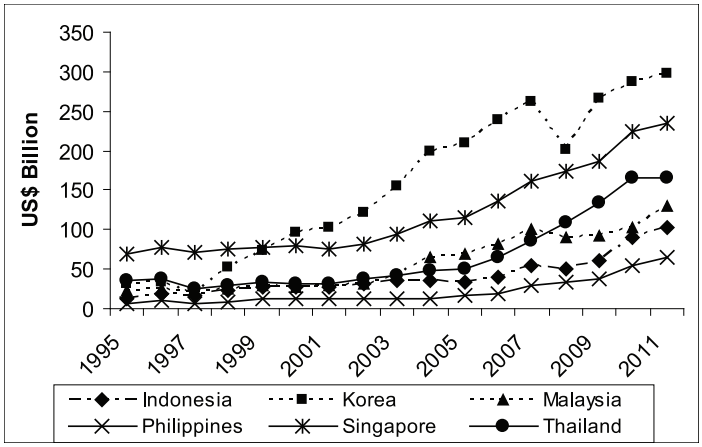


(Total of six countries)
Source: International Financial Statistics, December 2012, International Monetary Fund.

Countrywise breakdown shows that Korea recorded a highest rate of increase in reserves holding starting immediately after the 1997 crisis while the reserves holdings of Indonesia, Malaysia, Philippines, Singapore and Thailand recorded a positive growth trend after 2002

which had remained sluggish from 1997 to 2002. The impact of the global financial crisis of 2007 remained mixed on the reserves holding of these countries. Reserves held by Korea saw a sharp decline while reserves held by Indonesia and Malaysia saw a moderate decline in 2008. On the other hand, the reserves held by Thailand recorded a steady growth and Philippines and Singapore saw a slow growth in their reserves in 2008 (Figure 2).

Figure 2
Countrywise Reserves Accumulation Trend



Source: International Financial Statistics, December 2012, International Monetary Fund.

The average imports coverage of the reserves held by the South East Asian countries covered in this study was 3.8 months in 1995 which has reached 7.9 months in 2010. The average reserves to GDP ratio of these countries has increased to 43.3% in 2010 from 24.9% in 1995. Similarly, the average reserves to short-term external debt ratio has increased to 4.4 in 2010 from 1.4 in 1995 (Table 1). It shows that the volume of reserves held by the South East Asian countries in the recent years is far more than prescribed by the Guidotti-Greenspan rule. In 2010, the imports coverage of these countries ranged between 6.5 months and 9.8 months while reserves to GDP ratio ranged between 12.7% and 98.4%.

Table 1
Foreign Exchange Reserves Growth

Country	*Indicator*	*1995*	*2000*	*2005*	*2010*
Indonesia	Volume of reserves (US$ billions)	13.3	28.3	32.9	90.0
	Imports coverage (months)	2.9	6.8	4.6	6.6
	Reserves to GDP ratio (%)	6.6	17.1	11.5	12.7
	Reserves to short term external debt (ratio)	0.5	1.3	3.6	2.7
Korea	Volume of reserves (US$ billions)	31.9	95.9	210.0	286.9
	Imports coverage (months)	2.5	6.0	8.2	6.8
	Reserves to GDP ratio (%)	6.2	18.0	24.9	28.3
	Reserves to short term external debt (ratio)	n.a.	n.a.	n.a.	
Malaysia	Volume of reserves (US$ billions)	22.9	27.4	69.4	102.3
	Imports coverage (months)	3.2	3.5	6.4	6.5
	Reserves to GDP ratio (%)	25.8	29.2	50.3	41.5
	Reserves to short term external debt (ratio)	3.2	6.0	5.3	2.9
Philippines	Volume of reserves (US$ billions)	6.3	13.0	15.8	54.0
	Imports coverage (months)	2.3	3.8	3.7	8.9
	Reserves to GDP ratio (%)	8.4	17.1	16.0	27.1
	Reserves to short term external debt (ratio)	1.2	2.4	2.5	8.6
Singapore	Volume of reserves (US$ billions)	68.5	79.7	115.7	223.7
	Imports coverage (months)	6.6	7.1	6.9	8.6
	Reserves to GDP ratio (%)	81.4	86.0	92.3	98.4
	Reserves to short term external debt (ratio)	n.a.	n.a.	n.a.	n.a.
Thailand	Volume of reserves (US$ billions)	35.5	31.9	50.5	165.7
	Imports coverage (months)	5.2	5.4	4.6	9.8
	Reserves to GDP ratio (%)	21.1	26.0	28.6	51.9
	Reserves to short term external debt (ratio)	0.8	2.1	3.2	3.5
Average imports coverage (months)		**3.8**	**5.4**	**5.7**	**7.9**
Average reserves to GDP ratio (%)		**24.9**	**32.2**	**37.3**	**43.3**
Average reserves to short term external debt (ratio)*		**1.4**	**3.0**	**3.7**	**4.4**

* Average of 4 countries

Data source: International Financial Statistics, December 2012; World Bank Database 2013.

4. Determinants of Reserves Accumulation

As discussed in Section 2, possible determinants of reserves accumulation include desire to self insure against financial crises, promotion of exports, implementation of policies aimed at preventing the appreciation of domestic currencies and so on. Empirical studies

(Aizenman and Lee, 2007; Bastourre et al., 2009) have indicated that trade openness, financial openness, exposure to financial crises and economic development are more important determinants that explain recent reserves accumulation in emerging economies. In a similar line, empirical investigation is conducted in this study to examine the determinants of reserves accumulation in the South East Asian region employing the following model.

$$RES_t = \alpha_0 + \beta_1 XRVOL_t + \beta_2 XPVOL_t + \beta_3 TRADE_t + \beta_4 CFLOW_t + \beta_5 GDP_t + e_t \quad (1)$$

where,

RES – volume of reserves in US$ million

XRVOL – exchange rate volatility: standard deviation of the monthly period average exchange rate

XPVOL – export volatility: standard deviation of the monthly export receipts

TRADE – total trade: total of imports and exports

CFLOW – capital flow: gross capital flows (inflows and outflows)

GDP – economic growth: nominal gross domestic product in US$ million

In the above equation, α_0 is the intercept, β_1, β_2, β_3, β_4 and β_5 are the coefficients of independent variables; and e_t is the error term. The sign of all of these coefficients are expected to be positive. Higher exchange rate volatility and export volatility will necessitate the holding of higher level of reserves as a precautionary measure. Similarly, increase in volume of trade, gross capital flows and economic growth are viewed to have positive impact on reserves accumulation.

In this study, annual data of six countries have been employed for empirical tests. The data of Korea, Malaysia, Philippines, Singapore and Thailand range from 1980 to 2011 while data of Indonesia covers a period of 1981-2011.

The standard procedure for analyzing the time series data is conducting cointegration test. Prior to conducting the cointegration test, it is essential to check each time series for stationarity. If a time series is nonstationary, the regression analysis done in a traditional way will produce spurious results. Therefore, the unit root test needs to be conducted first.

Perron (1989) showed that the presence of structural break creates problem in determining the stationarity of a time series. Perron (1989) re-examined Nelson and Plosser (1982) data and found that 11 of the 14 important US macroeconomic variables were stationary when known exogenous structural break was included. Perron (1989) allows for a one time structural change occurring at a time T_B ($1 < T_B <$ T), where T is the number of observations. Traditional tests for unit root such as Dickey-Fuller, Augmented Dickey-Fuller and Phillips-Perron are viewed to have low power in the presence of structural break. Perron (1989) models cannot be applied where structural break is unknown. To solve this problem, Zivot and Andrews (1992), Perron and Vogelsang (1992), and Perron (1997) among others have developed unit root test methods which include one endogenously determined structural break.

Table 2
Unit Root Test Results

Country	*Variable*	*ADF test*		*Perron 1997 (AO) model test*		
		t-Statistics	*Inference*	*Break date*	*t (α =1)*	*Inference*
Indonesia	RES_i	- 2.1783	Nonstationary	2000	- 7.0612***	Stationary
	$XRVOL_i$	- 3.1598	Nonstationary	1999	- 3.7769	Nonstationary
	$XPVOL_i$	- 2.5606	Nonstationary	1989	- 7.7724***	Stationary
	$TRADE_i$	1.6105	Nonstationary	1989	- 4.7449	Nonstationary
	$CFLOW_i$	- 0.5291	Nonstationary	2002	- 3.8504	Nonstationary
	GDP_i	2.4375	Nonstationary	1986	- 4.2892	Nonstationary
Korea	RES_k	- 1.3698	Nonstationary	1999	- 3.1627	Nonstationary
	$XRVOL_k$	- 3.9042**	Stationary	1984	- 4.4604	Nonstationary
	$XPVOL_k$	- 2.3647	Nonstationary	2001	- 5.0371**	Stationary
	$TRADE_k$	- 0.1169	Nonstationary	1989	- 8.0859***	Stationary
	$CFLOW_k$	- 4.7446***	Stationary	2004	- 4.9983**	Stationary
	GDP_k	- 3.0221	Nonstationary	2001	- 4.4457	Nonstationary
Malaysia	RES_m	- 0.0537	Nonstationary	2000	- 4.2325	Nonstationary
	$XRVOL_m$	- 3.8860**	Stationary	1996	- 4.1060	Nonstationary
	$XPVOL_m$	- 4.2092**	Stationary	2003	- 4.8822**	Stationary
	$TRADE_m$	- 1.9145	Nonstationary	1996	- 3.7649	Nonstationary
	$CFLOW_m$	- 7.5626***	Stationary	1996	-12.8631***	Stationary
	GDP_m	0.2539	Nonstationary	2000	- 4.9266**	Stationary
Philippines	RES_p	3.4333	Nonstationary	1998	- 5.2646**	Stationary
	$XRVOL_p$	- 4.8356***	Stationary	1980	- 5.0264**	Stationary
	$XPVOL_p$	- 3.8697**	Stationary	1998	- 4.3918	Nonstationary
	$TRADE_p$	- 3.0542	Nonstationary	1998	- 5.8592***	Stationary
	$CFLOW_p$	- 5.1367***	Stationary	2007	- 4.2481	Nonstationary
	GDP_p	1.1897	Nonstationary	2009	- 4.0231	Nonstationary
Singapore	RES_s	- 0.3891	Nonstationary	1992	- 6.2837***	Stationary
	$XRVOL_s$	- 6.0310***	Stationary	2004	- 7.2224***	Stationary
	$XPVOL_s$	- 3.0143	Nonstationary	2003	- 4.0206	Nonstationary
	$TRADE_s$	- 0.8351	Nonstationary	2000	- 4.8235	Nonstationary
	$CFLOW_s$	- 5.1960***	Stationary	1997	- 1.9488	Nonstationary
	GDP_s	1.0961	Nonstationary	1986	- 4.3873	Nonstationary
Thailand	RES_t	- 1.0368	Nonstationary	2009	- 5.1154**	Stationary
	$XRVOL_t$	- 3.5986**	Stationary	1999	- 4.1862	Nonstationary
	$XPVOL_t$	- 0.0774	Nonstationary	1989	- 5.5576***	Stationary
	$TRADE_t$	- 0.0701	Nonstationary	1989	- 6.5340***	Stationary
	$CFLOW_t$	- 2.9265	Nonstationary	1984	- 3.1887	Nonstationary
	GDP_t	- 0.1755	Nonstationary	2009	- 3.8100	Nonstationary

*** Significant at 1% level.
** Significant at 5% level.

The unit root tests conducted following Augmented Dickey-Fuller and Perron 1997 (AO) models indicate that the variables included in the regression model for each country are of mixed order of integration (Table 2). Because of this, the standard cointegration tests such as Johansen (1991; 1995) cannot be employed as these tests require all the variables to be of equal order of integration, which is I(1). Therefore,

the OLS based autoregressive distributed lag (ARDL) method is employed to analyze the cointegration among the variables in each model. This method can be applied irrespective of whether the regressing variables are I(0) or I(1) (Pesaran and Pesaran, 1997). From the ARDL model, a dynamic error correction model (ECM) also can be derived which integrates the short run dynamics with the long run equilibrium without losing long run information.

The ARDL method estimates $(p+1)^k$ number of regressions in order to obtain optimal lag length for each variable, where p is the maximum number of lag to be used and k is the number of variables in the equation. As the data used in this study are in annual frequency, lag 2 is selected as the maximum lag (p) to be used, following Pesaran and Pesaran (1997). The model can be selected using the model selection criteria like Schwartz-Bayesian Criteria (SBC) and Akaike's Information Criteria (AIC). In this study, models are selected based on AIC as it is known to take maximum relevant lags.

The ARDL model for equation (1) is as follows:

$$\begin{aligned}\Delta RES_t = {} & \beta_0 + \sum_{i=1}^{p} \chi_i \Delta RES_{t-i} + \sum_{i=1}^{p} \delta_i \Delta XRVOL_{t-i} + \sum_{i=1}^{p} \varepsilon_i \Delta XPVOL_{t-i} + \sum_{i=1}^{p} \phi_i \Delta TRADE_{t-i} \\ & + \sum_{i=1}^{p} \varphi_i \Delta CFLOW_{t-i} + \sum_{i=1}^{p} \gamma_i \Delta GDP_{t-i} + \lambda_1 XRVOL_t + \lambda_2 XPVOL_t + \lambda_3 TRADE_t \\ & + \lambda_4 CFLOW_t + \lambda_5 GDP_t + \lambda_6 D_{RESt} + u_t \end{aligned} \quad (2)$$

In the above model, a dummy variable D_{RES} has been included to capture the endogenously determined structural break in RES following Perron (1997). As RES goes through a structural break in time T, the dummy takes the value of 0 until time T and 1 starting from T+1. The null hypothesis is $\lambda_1 = \lambda_2 = \lambda_3 = \lambda_4 = \lambda_5 = 0$, which means the nonexistence of the long run relationship. The key statistics of the ARDL based cointegration test are presented in Table 3.

Table 3
ARDL Model Cointegration Test Results
(Long-run and ECM)
Dependent variable: RES (Volume of reserves) of the respective economy

Variable	*Indonesia*	*Korea*	*Malaysia*	*Philippines*	*Singapore*	*Thailand*
Constant β_0	-4532.5***	-8037.6	-14085.5***	-16445.7	-5227.0**	-6537.4***
Exchange rate volatility (XRVOL)	18.6956***	-554.3388**	-18160.2	-455.1308	-69098.0	-313.8478**
Export volatility (XPVOL)	-3.5069	-32.0223***	-0.8566	14.1380	2.6179	47.2313***
Total trade (TRADE)	-0.0886	0.8807***	-0.3968**	-0.0994	0.1155**	0.0822
Gross capital flows (CFLOW)	0.2593	1.1105***	1.1433**	0.8488	-0.0565**	-0.1580**
Nominal gross domestic product (GDP)	0.1236***	-0.3927***	0.9348***	0.5331***	0.7154***	0.1075***
Structural break dummy (D_{RES})	10007.9***	-18544.6	30307.6**	-6679.5	-3804.9	38866.5***
ECM	-1.5993***	0.2570***	-0.3896**	-0.2299	-1.0000	-1.0000

*** Significant at 1% level.
** Significant at 5% level.

The long-run statistics of the ARDL model tests show that exchange rate volatility and economic growth are the main factors affecting the reserves accumulation in Indonesia. In Korea, trade openness and capital openness affect the reserves positively but exchange rate volatility, export volatility and economic growth have negative impact on it. The negative association of exchange rate and export volatility with reserves indicates that less volatility in these variables might have created favourable environment for reserves accumulation in Korea, while negative association of economic growth indicates to the precautionary motive of reserves accumulation. In the case of Malaysia, capital openness and economic growth are positively

associated with reserves accumulation but trade openness impacts the reserves negatively. In Philippines, economic growth affects the reserves positively but other variables do not seem to be associated with the reserves accumulation. In Singapore, trade openness and economic growth increase reserves but capital openness affects the reserves negatively. Similarly, export volatility and economic growth are associated positively but exchange rate volatility and capital openness are associated negatively with reserves in Thailand.

Among the five independent variables included in the model, the impact of economic growth proxied by nominal GDP on reserves accumulation is statistically significant for all the countries included in this study. However, such impact is positive in Indonesia, Malaysia, Philippines, Singapore and Thailand, while the impact is negative in Korea. This shows that the main driver of reserves accumulation in most of the countries covered in the study is economic growth but in the case of Korea, the country tends to accumulate more reserves when the economic growth declines. Capital openness seems to help increase the reserves in Korea and Malaysia but the reserves tend to decline with increased capital openness in Singapore and Thailand. The negative association between capital openness and reserves accumulation might be the result of higher capital outflows and lower capital inflows occurred along with the increased capital openness. Trade openness increases the reserves accumulation in Korea and Singapore but it has negative impact on reserves in Malaysia. This shows that trade openness increases trade surplus in Korea and Singapore but it incurs trade deficit in Malaysia. Exchange rate volatility impacts reserves accumulation positively in Indonesia but negatively in Korea and Thailand. Precautionary motive may be the possible reason behind the positive impact of exchange rate volatility on reserves while less volatility in the exchange rate in Korea and Thailand might have encouraged reserves accumulation by creating a stable environment. Export volatility affects the reserves accumulation in Korea and Thailand only. However, the direction of impact differs in these countries. The positive impact of export volatility on reserves accumulation in Thailand shows that the reserve accumulation occurs due to the precautionary measure. But in the case of Korea, stable export condition helps reserves accumulation.

5. Concluding Remarks

Total reserves held by six South East Asian countries increased significantly after the financial crisis of 1997 recording a growth of more than six folds in 14 years. The average imports coverage of the reserves held by these countries has increased from 3.8 months in 1995 to 7.9 months in 2010. Similarly, the average reserves to GDP ratio of these countries has increased to 43.3% in 2010 from 24.9% in 1995. Due to the global financial crisis erupted in 2007, the South East Asian countries experienced a decline in their reserves holding in 2008, but they saw a recovery in 2009. Slowing capital inflows and surging capital outflows coupled with dramatically diving export receipts were the main reasons behind such decline in the reserves level in 2008. The empirical test results show that economic growth is the main driver of reserves accumulation in the South East Asian countries. Capital openness, trade openness and exchange rate volatility are other variables affecting reserves accumulation in some of these countries but the direction of the impact is not the same. This suggests that the direction of the impact of these variables on reserves accumulation differ according to the structure of trade and capital flow of the respective countries.

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