

Title: "The Effects of Exchange Rate Volatility on Exports-Some New Evidence for ASEAN Region"

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INTRODUCTION

In the light of International Financial Economic theory, this paper investigate empirically the impact of bilateral exchange rate volatility on the export flows of five regional ASEAN countries, namely Malaysia, Singapore, Philippines, Indonesia and Thailand to the United States, over the period January, 1990 to December, 2010. Exchange rate volatility is a source of concern as currency values partially determine the price paid or received for output/goods and, consequently, this affects the profits and welfare of the producers and consumers (Akhtar and Spence, 1984). As a result, exchange rate volatility can affect the volume of goods traded internationally by making prices and profits indeterminate.

PREVIOUS STUDY

Broadly discuss of this topic covered from the previous researcher, namely, Hooper and Kohlhaugen (1978), Gotur (1985), Brada and Mendez (1988), Peree and Steinherr (1989), Klein (1990), Feenstra and Kendall (1991), Hook and Boon (2000), Doyle (2001), Baak (2004), among others. For more recent studies, likes Arize et al. (2005), Lee and Saucier (2005), Baak et al. (2007), Chit et al. (2008), Aize (2008) and Baak (2009). However, the issue was rarely investigated according the exports of ASEAN countries. So far, only a small number of studies e.g. Arize et al. (2000), Baum et al. (2001), Doganlar (2002), Bahmani-Oskooee and Goswami (2004), Baak et al. (2007) have focus on or included ASEAN countries in their analyses.

RESULT

Error Correction Mechanisms Dependent Exports
Sample: January, 1990- December, 2010

Variable	ASEAN Countries				
	Singapore	Malaysia	Thailand	Philippine	Indonesia
Constant	-0.001 (-1.58)	0.006 (1.66)c	0.018 (4.67)a	0.004 (0.99)	0.012 (2.29)b
ECT _{ijt}	-0.22 (-5.00)a	-0.02 (-1.78)c	-0.03 (-7.42)a	-0.03 (-5.70)a	-0.01 (-1.57)c
AA _{ijt}	-0.68 (-11.33)a	-0.28 (-4.41)a	-0.60 (-9.56)a	-0.38 (-6.18)a	-0.44 (-7.46)a
AA _{ijt}	-0.26 (-3.80)a	-0.09 (-1.59)	-0.56 (-7.66)a	-0.32 (-5.34)a	-0.20 (-3.20)a
AA _{ijt}	0.10 (1.57)	-	-0.44 (-6.19)a	-0.18 (-3.21)a	-0.18 (-2.92)a
AA _{ijt}	0.16 (2.73)a	0.02 (0.34)	-0.51 (-7.97)a	-0.30 (-4.94)a	-0.194 (-3.14)a
AA _{ijt}	-	-	-0.46 (-7.43)a	-0.27 (-4.41)a	-0.22 (-3.52)a
AA _{ijt}	-	-0.14 (-2.32)b	-0.53 (-8.95)a	-0.21 (-3.74)a	-0.23 (-3.69)a
AA _{ijt}	-0.20 (-3.55)a	-0.14 (-2.40)b	-0.58 (-9.65)a	-0.16 (-2.82)a	-0.11 (-1.705)c
AA _{ijt}	-	-	-0.58 (-9.29)a	-0.27 (-4.31)a	-0.09 (-1.47)
AA _{ijt}	0.10 (1.77)c	-	-0.482 (-7.22)a	-0.28 (-4.65)a	-
AA _{ijt}	0.10 (1.72)c	-	-0.40 (-5.98)a	-0.19 (-3.39)a	-0.09 (-1.761)c
AA _{ijt}	-	0.13 (2.17)b	-0.25 (-4.23)a	-	-
AA _{ijt}	0.14 (2.61)a	0.28 (4.27)a	-	0.21 (3.48)a	0.24 (4.44)a
AG _{ijt}	0.01 (2.57)b	0.01 (2.86)a	0.01 (2.86)a	0.02 (4.40)a	0.01 (3.48)a
AG _{ijt}	0.02 (4.69)a	0.02 (4.62)a	0.02 (6.22)a	0.01 (3.16)a	0.01 (3.59)a
AG _{ijt}	0.01 (3.21)a	0.01 (0.69)	0.01 (3.08)a	-	-
AG _{ijt}	-	-	0.01 (2.16)b	-	-
AG _{ijt}	-0.01 (-3.38)a	-	0.01 (2.44)b	0.01 (1.27)	0.01 (2.29)b
AG _{ijt}	-0.02 (-5.34)a	-0.01 (2.12)b	-	-	-0.01 (-1.93)c
AG _{ijt}	-	-	0.01 (4.21)a	-	-
AG _{ijt}	-	-0.01 (-4.92)a	-	-0.01 (-4.70)a	-0.01 (-2.19)b
AG _{ijt}	0.01 (3.64)a	-0.01 (-1.68)c	0.01 (4.49)a	0.01 (1.67)c	-0.004 (-1.08)
AG _{ijt}	0.007 (1.91)c	-	0.009 (3.01)a	-	-
AG _{ijt}	-	-	-	-	-
AG _{ijt}	-	-	-	0.009 (2.93)a	0.008 (2.09)b
AP _{ijt}	-	-	-	-	0.155 (1.79)b
AP _{ijt}	0.962 (2.60)b	-	0.013 (0.08)	0.262 (1.36)	-
AP _{ijt}	-	0.246 (1.13)	-	-	-
AP _{ijt}	0.753 (2.06)b	-	-	-	-
AP _{ijt}	-	-	-	0.544 (2.48)b	-0.316 (-2.27)b
AP _{ijt}	0.544 (1.45)	0.506 (2.32)b	-0.01 (-0.07)	-0.256 (-1.29)	-
AP _{ijt}	0.839 (2.18)b	-	-	-	-
AP _{ijt}	-	-	-	-	-
AP _{ijt}	-	0.49 (2.418)b	-	-	-
AP _{ijt}	0.429 (1.13)	-	0.214 (1.41)	-	-
AP _{ijt}	-	-	-	0.240 (1.23)	-0.174 (-2.16)b
AP _{ijt}	-	-	-	-	-
AP _{ijt}	-	-	-	-	0.148 (1.17)
AP _{ijt}	-	-	0.620 (2.52)b	-	0.007 (0.063)
AP _{ijt}	-	0.986 (1.43)	0.291 (0.89)	-	-
AP _{ijt}	-	-	-	-2.02 (-3.13)a	0.500 (2.499)b
AP _{ijt}	-	-1.215 (-1.65)c	-	-	-
AP _{ijt}	-2.09 (-1.15)	-	-	-0.818 (-1.39)	-
AP _{ijt}	-4.23 (-2.26)b	-1.135 (-1.460)	0.103 (0.45)	-1.189 (-2.08)b	-
AP _{ijt}	-	-0.737 (-0.97)	-	-	-
AP _{ijt}	-	-	-	-	-
AP _{ijt}	-	-	-0.086 (-0.24)	-1.672 (-2.67)a	-
AP _{ijt}	-	-	-	-	-
AP _{ijt}	-	1.118 (1.93)c	-	-	-
AP _{ijt}	-	-0.028 (-1.65)	-	-	-
ACD _{ijt}	-	0.111 (2.62)a	0.134 (3.16)a	0.105 (2.37)b	0.153 (2.69)a
ACD _{ijt}	-	-0.066 (-1.54)	-	-0.093 (-2.09)b	-
ACD _{ijt}	-0.126 (-2.24)b	-0.104 (-2.43)b	-0.037 (-0.91)	-	-0.072 (-1.28)
ACD _{ijt}	-0.094 (-1.67)c	-0.058 (-1.309)	-	-0.034 (-0.74)	-
ACD _{ijt}	-0.082 (-1.45)	-	-	-	-
ACD _{ijt}	-0.122 (-2.12)b	-	-0.006 (-0.14)	-0.094 (-1.98)b	-0.102 (-1.65)c
ACD _{ijt}	-	-	-	-0.059 (-1.258)	-
ACD _{ijt}	-	-	-	-	-
ACD _{ijt}	-	-	0.075 (1.44)	-	-0.094 (-1.46)
ACD _{ijt}	-	0.106 (2.25)b	0.004 (0.10)	-	-
DW	2.0213	2.0680	1.9032	2.0800	2.0822
B-G	F=1.5[log(0.34)]	F=1.9[log(20.35)]	F=1.2[log(20.31)]	F=1.1[log(20.22)]	F=1.5[log(20.25)]
B-P-G	F=2.25[0.1887]	F=2.3[0.2432]	F=1.69[0.2938]	F=2.03[0.2180]	F=1.12[0.3180]
R ²	0.6343	0.5384	0.6386	0.6816	0.5746
Ads. R ²	0.5868	0.4759	0.6296	0.5744	0.5171
F-stat	13.3624	8.6229	13.1045	11.2332	9.9880
Prob.(F-Stat)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)

5% Critical values (Note that in the parentheses are the absolute t-statistic value)

HYPOTHESIS

The exchange rate volatility negatively effects the export demand from selecting ASEAN region, namely, Malaysia, Singapore, Thailand, Indonesia and Philippines to the United States.

MODEL SPECIFICATION

The Augmented model of exchange rate volatility-Export Demand Function :-

$$\ln A_{ijt} = \alpha_0 + \alpha_1 \ln G_{jt} + \alpha_2 \ln P_{ijt} + \alpha_3 \ln \sigma_{ijt} + \alpha_4 CD_{ijt} + v_{ijt}$$

Where, A_{ijt} denotes as real exports from a country i (for example, Malaysia) to a country j (the United States); G_{jt} is the GDP of an importing country (United States), j ; P_{ijt} is the real bilateral exchange rate, reflecting the price competitiveness; σ_{ijt} is the volatility (GARCH 1,1) of the bilateral real exchange rates; CD_{ijt} is representing the crisis dummy due to the Asian financial crisis in meddle 1997 to end of 1999; finally v_{ijt} denotes as a disturbance term. All variables are in natural logarithm and the subscript t symbolizes the time series data. This model originally proposes by Baak (2007), with additional contribution by the author.

METHODOLOGY

This section provides methodology framework for the study. According Arize et al. (2008), the multivariate analysis may lead to a precise analysis in order to capture the long run and short run relationships between the variables. Therefore, in term to capture these issues, the cointegration and error correction modelling (ECM) could be a good framework to follow. However, before we go further, the beginning of the multivariate analysis for time series data is the univariate unit root tests. In this study, we perform the unit root tests propose by Dickey and Fuller (1979).

FINDING AND DISCUSSION

In general, the major results suggests that increases in the volatility of the real bilateral exchange rate, approximating exchange rate risk, exert significant effects upon export demand in the short run in each country under considerations. Moreover, the finding suggests the direction of the significant effects are varies across the countries. Specifically, in the short-run, the findings are found to be significantly negative effects from Singapore and Philippines to the United States. In contrast, the bilateral exchange rate volatility from Indonesia to the United States is positive. The result furthermore proposes mixed sign for the bilateral exchange rate volatility from Malaysia and Thailand to the United States throughout the regression estimations.

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