

Effects of Pass-Through of Exchange Rates on Import Prices in East Asian Countries*

Yuri Sasaki

Department of Economics

Meiji Gakuin University

yurissk@eco.meijigakuin.ac.jp

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1. Introduction

In 1997, East Asian countries experienced currency crises. Many studies have investigated the mechanism of the currency crises, and some of the studies concluded that the “de facto dollar peg system” might have played a very important role in causing the crises¹. The East Asian countries had adopted a currency basket peg system that was weighted heavily in favor of the U.S. dollar (i.e., a de facto dollar peg), despite the strong trade relations between East Asian countries and Japan. This policy might have made their import and export prices vulnerable to the exchange rate risk of the Japanese yen. The higher the pass-through of the exchange rate of the Japanese yen, the stronger are the effects of changes in the Japanese yen rate. Thus, by estimating pass-through, we will know how the Japanese yen affects macroeconomies in East Asian countries through the trade relations between Japan and the other East Asian countries.

This paper examines the effects of the pass-through of exchange rates on import prices in East Asian countries by using aggregated data and nine-digit industry import unit values provided by the Japan Tariff Association.

Recently, the study of exchange pass-through has received renewed attention. In the late 1980s, pass-through research focused on industrial organizations and price discrimination between domestic and foreign markets. Those studies use partial equilibrium models, and much empirical evidence was gathered from developed countries. Recent studies are based on the new open macroeconomic models of Obstfeld and Rogoff (1995). These studies use the sticky price models of Obstfeld and Rogoff in which nominal prices are set in advance to consider the differences between the effect when prices are set in the consumers’ currency (LCP, or local-currency

¹ Ito, Ogawa and Sasaki (1998) discuss the de facto dollar peg system in detail.

pricing model) and the effect when prices are set in the producers' currency (PCP, or producer-currency pricing model).

Although the new wave of pass-through studies includes models of various types, most models that examine the selection of an exchange regime suggest "the type of price stickiness may be of critical importance" (Devereux and Engel (1998)). This indicates that empirical analysis of import prices has become more important in considering what type of exchange regime is best for East Asian countries. For example, if the pass-through of exchange rates on import prices in East Asian countries is low, then fluctuations in exchange rates will have little effect on import prices if these countries adopt floating exchange rates.

To examine the implications of the recent models, Campa and Goldberg (2004) examined the pass-through of exchange rates on import prices of OECD countries. Our analysis is similar to that of Campa and Goldberg (2004) but we focus on the Asian countries. Our empirical analysis, using aggregated data, found that changes in the exchange rate of the US dollar affected the import prices of all Asian countries studied, except Singapore, whereas the yen had no such effect. The empirical analysis using nine-digit industry import unit values found that the import prices of three out of 11 goods were affected by yen exchange rates.

Section 2 surveys recent literature on pass-through. Section 3 provides a simple analysis of aggregated data. Section 4 explains a model of pass-through and an empirical framework. Section 5 shows the regression results. Section 6 summarizes the conclusions.

2. Recent Literature on Pass-Through of Exchange Rates

After the Plaza Accord of 1985, the yen appreciated dramatically against the

US dollar; however, the current account balances of the USA and Japan did not change as expected. The reasons for this have been researched, and many studies (e.g., Marston (1990), Knetter (1993), Goldberg and Knetter (1997)) have presented considerable empirical evidence that Japanese exporters exhibit pricing-to-market (PTM) behavior. These studies focused on exporters' pricing behavior to discriminate between domestic and foreign market prices and use partial equilibrium models.

The purchasing power parity (PPP) hypothesis had been studied for many years; however, Engel (1993) and Engel and Rogers (1994) showed that violation of the law of one price across national borders is much greater than can be explained by geographical distance or transportation costs. Their analysis, using a co-integration technique with longer time-series data, also shows that the law of one price is violated beyond mere short-term adjustments. Feenstra and Kendall (1997) found that a significant portion of observed deviations from the law of one price is attributable to incomplete pass-through of the exchange rate, which results from PTM behavior. That is, PTM, or local currency price-setting behavior, is recognized as one reason for violations of the law of one price.

In new open macroeconomics, Obstfeld and Rogoff (1995) developed a sticky price model. They assume that the price is set in the producers' currency and that there is no violation of the law of one price. Betts and Devereux (1996) extended the model of Obstfeld and Rogoff (1995) to allow for incomplete pass-through of exchange rates. Betts and Devereux (1996) developed a general equilibrium model consistent with the lack of response of prices to exchange rate movements that are generated by money shocks. They showed that the combination of PTM and sticky local currency nominal prices amplifies the effect of money shocks on exchange rates.

In the new wave of pass-through studies, Devereux and Engel (1998) directly

examined how price setting affects the optimal choice of exchange rate regime. They show that, when prices are set in the consumers' currency, the adoption of a floating exchange rate system would be better because a floating exchange rate insulates domestic consumption from foreign monetary shocks. Under floating exchange rates, the prices paid by home residents for imported goods are not affected by exchange rate fluctuations if producers set the price in the consumers' currency. When prices are set in the producers' currency, a fixed exchange rate regime is better than a floating exchange rate system if the negative effect of uncertainty of floating exchange rates on domestic consumption dominates the insulation effect of the floating exchange rate regime. This reveals that, when prices are set in the producers' currency, there is a trade-off between floating and fixed exchange rates. Exchange rate adjustment under floating rates reduces the variance in consumption, but exchange rate volatility itself leads to a lower average level of consumption.

These local-currency pricing models assume that stickiness of the local currency price is the reason for consumer prices not responding greatly to exchange rates. Nevertheless, there are other possible explanations for the incomplete pass-through.

Campa and Goldberg (2004) provide empirical evidence of the exchange rate pass-through into the import prices of 23 OECD countries. They estimate pass-through elasticities from quarterly data from 1975 to 2003, and find that countries with less variability in the exchange rate and inflation are likely to have lower rates of pass-through of exchange rates into import prices. They also find a weak tendency toward a decline in exchange rate pass-through rates. The empirical analyses in this paper are similar to those of Campa and Goldberg (2004); however, we focus on the Asian countries.

3. Aggregated Data

This section uses aggregated data to consider the macro effects of pass-through. To investigate the effects of exchange rates on aggregated import prices, the following equation is estimated separately by country:

$$(1) \Delta (P^m_t) = \alpha + \beta \Delta S^{\$}_t + \gamma \Delta S^Y_t + u_t,$$

where $S^{\$}_t$ is the nominal US dollar rate (per one US dollar) at time t , S^Y_t is nominal Japanese yen rate (per one yen) at time t , P^m is the price of import goods in the currency of the importing country, Δ denotes a variable for the rate of change, β is the pass-through elasticity of US dollar rates on import prices and γ is the pass-through elasticity of yen rates on import prices. If these pass-through elasticities are high, exporters might set prices in their own currency (not PTM). If the coefficients are near zero, pass-through is incomplete and exporters might set prices in the consumer's currency.

The data are annual and the period is from 1974 to 2000. The Philippines data are only up to 1990. The data are from the International Financial Statistics (IFS) CD-ROM and Taiwan's National Statistics Home Page (<http://www.stat.gov.tw/>).

Table 1 shows the results of the equation for the effects of exchange rates on aggregated import prices. The coefficient for the US dollar (β) is positive and significant in Korea, the Philippines, Thailand, Taiwan, Hong Kong and Japan. The only exception is Singapore. This may mean that US exporters set the prices of goods to those countries, except Singapore, in US dollars. The coefficients of Japanese yen (γ) are not positive. This suggests that Japanese exporters set the prices in the

consumers' currency in these East Asian countries.

If we use changes in effective exchange rates as an independent variable, the coefficient for the changes in effective exchange rates becomes one when pass-through is complete. However, as we could not obtain the effective rates for some Asian countries, we used the US dollar and Japanese yen rates separately. Thus, when pass-through is complete, the coefficient for the US dollar rate becomes the import share of the USA and the coefficient for the Japanese yen rate becomes the import share of Japan. We report the F value with the restriction that the coefficient for the US dollar rate is the import share of USA and the coefficient for the Japanese yen rate is the import share of Japan.

F statistics are significant for all the coefficients for the yen and are not significant for the coefficients for the US dollar. This means that yen rates do not pass-through into the import price of Asian countries and US dollar rates pass-through into the import price of Asian countries.

4. Model of PTM and Empirical Framework

Many papers have analyzed the pass-through of exchange rates empirically. Knetter (1989) published a highly regarded study on the pass-through of exchange rates, and this section reviews Knetter's model, in order to explain the empirical framework of the analysis in Section 3.

Consider an exporter selling to N foreign destinations, indexed by i. Demand in each destination market is assumed to have the general form of

$$(2) q_{it} = f_i(s_{it} p_{it}) v_{it}$$

$$i = 1, \dots, N, t = 1, \dots, T,$$

where q_{it} is quantity demanded by destination market i in period t , p is price in terms of the exporter's currency, s is the exchange rate (destination market currency per unit of the exporter's currency) and v is a random variable that may cause demand to shift. The exporter's profit in period t is

$$(3) \Pi_t = \sum p_{it} q_{it} - C(\sum q_{it}) z_t,$$

where C is the cost function and z_t is a random variable that may shift the cost function in period t . The first-order condition is

$$(4) p_{it} = c_t (e_{it} / (e_{it} - 1)),$$

$$i = 1, \dots, N, t = 1, \dots, T,$$

where c_t is the marginal cost of production in period t and e_{it} is the elasticity of demand with respect to the local currency price in destination market i . This price equation is the basic case in an incomplete market. The marginal cost, c , is common among destination countries. The markups over marginal cost differ between destination countries and this is the source of price discrimination. If the market is competitive, the markup over marginal cost is infinite and the marginal cost is equated to the world price.

The estimated equation is:

$$(5) \Delta S_{it} P_{it} = \text{Country}_i + \text{year}_t + \beta_i \Delta S_{it} + u_{it},$$

where S is nominal exchange rate of the yen (unit of country i 's currency per yen) at time t , P is price of export goods from Japan in yen, $year$ is a dummy variable that takes the value of one at time t and the value of zero at other times, and $Country$ is a country dummy variable.

In the literature on pass-through, it is usual to use the price in terms of the yen as the left-hand variable of the equation. However, our interest here is how the exchange rates affect the price in terms of the destination market (import side) currency, and so we use $S_{it}P_{it}$ as the dependent variable instead of P_{it} .

β is pass-through elasticity. If producers set the prices in their own currencies, then import prices will be affected by the exchange rate and β will become positive. If producers set the prices in the consumers' currency, import prices will not be affected by the exchange rate and β will become zero.

5. Results of Empirical Analysis

5.1. Description of data

The data of Japanese import goods (nine-digit data) were collected from JTrade, a Web-based search service that provides statistics on Japan's foreign trade from Japan's exports and imports. The data from JTrade start from 1988. Before 1988, the data were classified by a different system (seven-digit) but they roughly correspond to the nine-digit data available after 1988. We collected corresponding data (seven-digit) from Japan Exports and Imports (1973–1987).

We chose 11 industries, following Knetter (1989). The data are annual, and the period is from 1976 to 2000. Exchange rate data were collected from the IFS CD-ROM, and the exchange rate series was adjusted using 1990 as the base year.

5.2. Regression results

Table 2 shows the results. The first column is the estimated coefficient of the intercept (α). The reported coefficients (excluding that for the USA) are the differentials from the coefficient for the USA. The second column is the estimated coefficient for yen rates (β). Like the first column, the reported coefficients (excluding that of the USA) are the differentials from the coefficient for the USA. The third column is the sum of β for the USA and the β for each other country. Thus, the coefficients in the third column are not differential and show each country's pass-through elasticity. The results are summarized by the following points.

First, none of the β for the USA is significant at the 1% level. This means that US import prices of those 11 goods from Japan were not affected by Japanese yen rates. Only in the case of color film (3702092) is the coefficient for the USA positive and significant at the 5% level. The lack of significance also indicates that Japanese exporters set prices of goods shipped to the USA in US dollars, i.e., they exercised PTM behavior. This is consistent with previous empirical evidence.

Second, in golf balls, aluminum foil and color film, more than three coefficients are positive and significant; these coefficients are bigger than the coefficients for the same countries for other goods. For golf balls, the pass-through elasticity is in the following order:

US<HK<KR<GR<TH<SI<TW.

The smaller the elasticity, the more competitive the market may be. The elasticity of the USA is the smallest. This means that Japanese exporters set the most stable prices for the US market because that market is the most competitive.

For aluminum foil, the elasticity is in the following order:

SI<US<GR<ML<IN<CH<PH<HK<KR<TW.

The elasticity of the USA is the second smallest, and the elasticity of Germany is the third smallest for aluminum foil. These results suggest that the USA and Germany are more competitive markets for Japanese exporters.

For color film, the elasticity follows the order:

TH<SI<ML<GR<KR<CH<TW<US<HK,

which is different from those for golf balls and aluminum foil. In this case, Thailand is the most competitive and the USA is not so competitive for Japanese exporters.

6. Conclusion

This paper examined the effect of pass-through of exchange rates on import prices in Asian countries. Empirical analyses using aggregated data revealed that the exchange rate of the US dollar affected the import prices of almost all the countries studied, except Singapore, but that the Japanese yen exchange rate had no such effect. Empirical analyses using disaggregate data found that the import prices of three goods (golf balls, aluminum foil and color film) of the 11 studied were affected by the yen exchange rate. Although the sample sizes were small, this evidence does suggest that the degree of pass-through differs by the type of goods and that, overall, the yen does not affect the import prices of Asian countries.

Devereux and Engel (1988) find that, when prices are set in the consumers' currency, floating exchange rates always dominate fixed exchange rates. When prices

are set in the producers' currency, there is a trade-off between floating and fixed exchange rates.

The simple analysis of this paper shows that US exporters set the price in the producers' currency, and Japanese exporters set the price in consumers' currency. These results indicate that, if the only trading partner is the USA, fixing a home currency to the US dollar is better than floating exchange rates in a situation of volatile exchange rates, whereas, if the only trading partner is Japan, a floating exchange rate is better than a fixed exchange rate regime. However, East Asian countries export to and import from both the USA and Japan. Thus, from the recent literature, we cannot know which regime is better for East Asian countries. Nevertheless, this analysis suggests that a dollar peg regime is not adequate for Asian countries because Japanese yen rates are not adjusted to stabilize consumption under a dollar peg regime and, probably, the volatility of Japanese yen would make the fundamentals of Asian countries unstable.

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Table 1. Pass-through coefficients (aggregated data)

Coefficient	C	t stat.	US\$	t stat.	JPY	t stat.	R bar square	F stat. (US\$)	Signif. level	F stat. (JPY)	Signif. Level
Korea	0.1	2.2	0.8	3.4	-0.2	-1.1	0.28	0.75	0.4	32.75	0
Philippines	0.1	2.1	1.3	3.1	-0.6	-1.9	0.3	0.47	0.5	28.21	0
Singapore	0	0.9	0	-0.1	-0.1	-0.9	-0.05	14.84	0	95.85	0
Thailand	0.1	4.1	0.6	2.3	-0.4	-2.1	0.19	2.13	0.16	51.51	0
Taiwan	0	1	1.4	5.7	-0.1	-0.9	0.57	2.19	0.15	59.74	0
Hong Kong	0	2.5	0.5	1.8	0	0.1	0.07	3.61	0.07	81.32	0
Japan	0	1.9	1.2	5.4	0	0	0.52	0.8	0.38	-	-
Germany	0	2.3	0.4	3.1	-0.3	-1.9	0.25	16.34	0	69.14	0
USA	0.1	2.7	0	0	-0.1	-0.8	-0.01	-	-	48.23	0

Table 2. Pass-Through coefficients (nine-digit industry data)

Selenium (2804220)						
	Alpha		Beta		(US+Country dummy)	
	Coef.	(t stat.)	Coef.	(t stat.)	Coef.	(t stat.)
US	0.221	(1.06)	0.74	(0.96)	0.74	(0.96)
KR	-0.115	(-1.23)	0.558	(0.73)	1.298	(1.82)
CH						
TW	-0.055	(-0.60)	0.023	(0.03)	0.763	(0.85)
HK						
TH	-0.009	(-0.08)	-0.33	(-0.39)	0.408	(0.43)
SI						
ML						
PH						
IN						
GR						
A-R2:	0.18		Smpl:	91		

Pneumatic tires for bicycles (4011420)						
	Alpha		Beta		(US+Country dummy)	
	Coef.	(t stat.)	Coef.	(t stat.)	Coef.	(t stat.)
US	-0.678	(-2.03) *	1.554	(1.42)	1.554	(1.42)
KR						
CH						
TW						
HK	-0.118	(-0.81)	0.706	(0.61)	2.26	(2.12) *
TH	0.107	(0.69)	-2	(-1.56)	-0.45	(-0.37)
SI	-0.034	(-0.24)	0.053	(0.04)	1.607	(1.36)
ML						
PH						
IN						
GR	-0.084	(-0.61)	-0.45	(-0.35)	1.105	(1.04)
A-R2:	0.063	*	Smpl:	122		

Golf balls (9706051)						
	Alpha		Beta		(US+Country dummy)	
	Coef.	(t stat.)	Coef.	(t stat.)	Coef.	(t stat.)
US	-0.058	(-0.18)	1.415	(1.44)	1.415	(1.44)
KR	-0.102	(-0.68)	0.401	(0.34)	1.816	(1.95)
CH						
TW	-0.098	(-0.68)	1.331	(1.06)	2.746	(2.41) *
HK	-0.05	(-0.34)	0.085	(0.07)	1.5	(1.52)
TH	-0.098	(-0.62)	0.882	(0.69)	2.297	(1.99) *
SI	-0.068	(-0.48)	1.139	(0.95)	2.554	(2.37) *
ML						
PH						
IN						
GR	0.028	(0.19)	0.45	(0.34)	1.865	(1.72)
A-R2:	0.528		Smpl:	158		

Fish hooks (9707020)

	Alpha		Beta		(US+Country dummy)	
	Coef.	(t stat.)	Coef.	(t stat.)	Coef.	(t stat.)
US	0.001	(0.00)	0.942	(0.43)	0.942	(0.43)
KR	0.019	(0.05)	-0.32	(-0.11)	0.626	(0.30)
CH						
TW	0.074	(0.21)	-1.78	(-0.59)	-0.833	(-0.32)
HK	-0.01	(-0.03)	-0.14	(-0.05)	0.803	(0.34)
TH	0.065	(0.17)	-0.64	(-0.21)	0.307	(0.12)
SI	-0.102	(-0.29)	2.229	(0.77)	3.171	(1.32)
ML	-0.026	(-0.07)	-0.66	(-0.23)	0.287	(0.13)
PH	-0.03	(-0.08)	0.41	(0.16)	1.352	(0.74)
IN	-0.689	(-1.80)	0.783	(0.34)	1.725	(1.77)
GR	-0.126	(-0.38)	1.105	(0.37)	2.048	(0.89)
A-R2:	-0.066		Smpl:	220		

Portland cement (2523010)

	Alpha		Beta		(US+Country dummy)	
	Coef.	(t stat.)	Coef.	(t stat.)	Coef.	(t stat.)
US	0.069	(0.11)	2.558	(1.17)	2.558	(1.17)
KR						
CH						
TW	-0.168	(-0.83)	-3.78	(-1.94)	-1.217	(-0.50)
HK	-0.04	(-0.19)	-2.36	(-1.35)	0.201	(0.10)
TH						
SI	-0.081	(-0.40)	-2.07	(-1.14)	0.485	(0.21)
ML						
PH						
IN						
GR						
A-R2:	-0.104		Smpl:	91		

Aluminum foil (7604000)

	Alpha		Beta		(US+Country dummy)	
	Coef.	(t stat.)	Coef.	(t stat.)	Coef.	(t stat.)
US	0.151	(0.78)	0.628	(0.88)	0.628	(0.88)
KR	-0.107	(-0.93)	0.976	(1.08)	1.605	(2.38) *
CH	-0.061	(-0.53)	0.75	(0.94)	1.378	(2.81) **
TW	-0.074	(-0.68)	1.217	(1.24)	1.846	(2.26) *
HK	-0.011	(-0.10)	0.854	(0.95)	1.482	(2.12) *
TH	-0.077	(-0.64)	1.008	(1.02)	1.637	(1.99) *
SI	0.007	(0.07)	-0.02	(-0.02)	0.61	(0.79)
ML	-0.036	(-0.31)	0.647	(0.71)	1.275	(1.80)
PH	-0.065	(-0.54)	0.768	(0.91)	1.396	(2.43) *
IN	-0.067	(-0.57)	0.713	(0.95)	1.341	(4.37) **
GR	-0.03	(-0.27)	0.133	(0.14)	0.762	(1.04)
A-R2:	0.064		Smpl:	268		

Color Film (3702092)

	Alpha		Beta		(US+Country dummy)	
	Coef.	(t stat.)	Coef.	(t stat.)	Coef.	(t stat.)
US	0.005	(0.02)	1.544	(2.02) *	1.544	(2.02) *
KR	0.024	(0.19)	-0.246	(-0.25)	1.298	(1.79)
CH	-0.085	(-0.69)	-0.102	(-0.12)	1.442	(2.75) **
TW	0.013	(0.11)	-0.053	(-0.05)	1.49	(1.70)
HK	-0.021	(-0.17)	0.301	(0.31)	1.845	(2.45) *
TH	0.074	(0.59)	-1.185	(-1.12)	0.359	(0.41)
SI	0.039	(0.34)	-0.935	(-0.93)	0.609	(0.74)
ML	0.062	(0.52)	-0.931	(-0.96)	0.613	(0.81)
PH						
IN	0.054	(0.43)	-0.824	(-1.02)	0.72	(2.20) *
GR	0.071	(0.62)	-0.786	(-0.76)	0.758	(0.97)
A-R2:	0.33	**	Smpl:	243		

Color photo paper (3703010)

	Alpha		Beta		(US+Country dummy)	
	Coef.	(t stat.)	Coef.	(t stat.)	Coef.	(t stat.)
US	-0.378	(-1.07)	-0.334	(-0.29)	-0.334	(-0.29)
KR	-0.032	(-0.17)	1.459	(0.99)	1.125	(1.02)
CH	-0.081	(-0.43)	2.032	(1.56)	1.698	(2.11) *
TW	0.102	(0.57)	-1.036	(-0.65)	-1.371	(-1.02)
HK	0.146	(0.79)	-1.168	(-0.80)	-1.503	(-1.31)
TH	0.127	(0.66)	-0.567	(-0.35)	-0.901	(-0.67)
SI	0.009	(0.05)	0.136	(0.09)	-0.198	(-0.16)
ML	0.013	(0.07)	0.93	(0.63)	0.596	(0.51)
PH						
IN	-0.005	(-0.02)	1.524	(1.24)	1.189	(2.37) *
GR	-0.078	(-0.44)	0.828	(0.53)	0.493	(0.41)
A-R2:	0.173		Smpl:	243		

Autos (8702191)

	Alpha		Beta		(US+Country dummy)	
	Coef.	(t stat.)	Coef.	(t stat.)	Coef.	(t stat.)
US	-0.402	(-1.95)	-0.312	(-0.46)	-0.312	(-0.46)
KR						
CH						
TW						
HK	0.005	(0.06)	0.373	(0.52)	0.062	(0.09)
TH						
SI	-0.041	(-0.47)	0.518	(0.69)	0.207	(0.28)
ML	0.057	(0.64)	0.189	(0.26)	-0.122	(-0.19)
PH						
IN						
GR	-0.01	(-0.11)	0.481	(0.60)	0.17	(0.26)
A-R2:	-0.047		Smpl:	122		

Autos 1.1-2 L engine (8702192)

	Alpha		Beta		(US+Country dummy)	
	Coef.	(t stat.)	Coef.	(t stat.)	Coef.	(t stat.)
US	0.081	(0.49)	0.233	(0.51)	0.233	(0.51)
KR						
CH	0.001	(0.02)	0.437	(0.86)	0.67	(2.13) *
TW	0.024	(0.35)	-0.937	(-1.52)	-0.704	(-1.34)
HK	-0.011	(-0.16)	0.368	(0.65)	0.601	(1.33)
TH	-0.05	(-0.67)	0.352	(0.56)	0.585	(1.10)
SI	-0.026	(-0.38)	0.526	(0.89)	0.759	(1.53)
ML	0.074	(1.04)	-0.87	(-1.52)	-0.637	(-1.40)
PH						
IN	0.001	(0.01)	0.469	(0.97)	0.702	(3.60) **
GR	-0.021	(-0.31)	0.288	(0.47)	0.521	(1.11)
A-R2:	0.13		Smpl:	218		

Autos over 2 L engine (8702193)

	Alpha		Beta		(US+Country dummy)	
	Coef.	(t stat.)	Coef.	(t stat.)	Coef.	(t stat.)
US	0.052	(0.09)	-0.795	(-0.46)	-0.795	(-0.46)
KR						
CH	0.004	(0.02)	0.903	(0.48)	0.108	(0.09)
TW	-0.026	(-0.10)	0.586	(0.24)	-0.209	(-0.10)
HK	0.011	(0.04)	0.29	(0.14)	-0.505	(-0.30)
TH	0.079	(0.28)	-0.251	(-0.11)	-1.046	(-0.53)
SI	-0.04	(-0.16)	0.368	(0.17)	-0.428	(-0.23)
ML	0.03	(0.12)	0.027	(0.01)	-0.769	(-0.45)
PH						
IN	0.468	(1.69)	-1.609	(-0.89)	-2.405	(-3.31) **
GR	-0.007	(-0.03)	-0.339	(-0.15)	-1.134	(-0.65)
A-R2:	-0.032		Smpl:	216		