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Exchange Rate Pass-Through and Economic Openness Under Inflation Targeting Framework in Asian ITF Economies

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Abstract
This study investigates overall ERPT in four ITF-adopting Asian Economies, emphasizing the trilemma between ERPT, economic openness, and the inflation target. Based on quarterly data observations from 1999 to the fourth quarter of 2022 with an application of combined distributed lag and adaptive expectation models that allows a fair assessment concerning ERPT throughout the time dimension, we reveal evidence that exchange rate changes will be transmitted immediately to increasing domestic prices in the short run. Similarly, increased interest policy, GDP, and trade openness will push consumer prices up in the short term through adaptive expectation mechanisms. However, the pass-through effect tends to decrease in the long run due to a credible ITF implementation. Meanwhile, the pass-through effect concerning trade openness varies across countries in the short run, while openness tends to increase pressures on consumer prices in the long run. This condition allows further investigation to examine the pass-through effect and its transmission to various prices, including prices, imports, export prices, economic structure, and the effect of fear of floating in the ITF.

Keywords:
exchange rate pass-through; inflation targeting framework; trade openness; distributed lag; adaptive expectation

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INTRODUCTION

Asian economies encountered volatility in global capital flows due to the Asian financial crisis in 1997, prompting them to transition to a floating exchange rate system (Calvo and Reinhart, 2002). With the widespread adoption of the floating exchange rate regime, the inflation targeting framework (ITF) emerged as a prevalent topic for monetary policymakers (Prasertnukul et al., 2010). Although the monetary authority does not directly control the exchange rate of the domestic currency, exchange rate movements still have profound implications for the monetary policy framework through inflation.

Following the currency crisis in 1997, Korea became the pioneer in Asia to embrace inflation targeting. Regarding exchange rate policy, Korea eliminated the daily range of exchange rate fluctuations in 1997, transitioning to a complete currency floating regime. The Central Bank of Indonesia partially adopted the ITF in January 2000 after amending the Central Bank Act in 1999 but only officially completed the ITF in mid-2005. Beforehand, the currency crisis had intensified speculative attacks in both money and foreign exchange markets, compelling authorities to permit the Rupiah currency to undergo free floating arrangments in August 1997. The Bank of Thailand (BOT) switched its monetary policy framework from monetary targeting to inflation targeting in May 2000, two years after the shift from a fixed to a floating exchange rate. The last one that adopted the ITF was the Phillippines, which adopted ITF in January 2002 after two years of preparation.

The ITF aims to reduce the loss function attributed to the actual deviation of inflation from its target using instruments such as alteration in interest rates. However, since ITF's introduction until now, there have been several challenges the central bank has been confronting in carrying out the policy framework. Among these challenges are imperfect policy credibility, fiscal dominance, exchange rate volatility, and financial system stability's role in conjunction with monetary policy (Agénor & da Silva, 2019). The central bank encountered difficulties embracing a freely floating exchange rate mechanism parallel to ITF. This fear of floating causes a reluctance to execute complete floating, which in turn creates a challenge for the optimal functioning of ITF, including limited policy flexibility, increased vulnerability to external shocks, and reduced policy credibility (Calvo & Reinhart 2002; Ball & Reyes, 2008). Moreover, the increasingly intense degree of openness and integration of a country's economy into the global economy has augmented the ITF's challenges. The issue of openness and price stability within ITF occupies the center of attention in this study, specifically the extent to which the degree of openness affects the exchange rate pass-through against inflation.

The adoption of ITF is expected to reduce the pass-through of the exchange rate against inflation. In the ITF regime, markets that import goods from abroad tend to absorb most of the exchange rate shock through minor variations in selling prices, isolating its impact on inflation. The price response to exchange rate shocks in the target country has decreased with the ITF, while in non-ITF countries, it has increased (Coulibaly & Kempf, 2010). Nevertheless, there is a bunch of literature that reveals divergent results regarding the influence of exchange rate pass-through on inflation within the context of ITF (Jongrim et al., 2020; Cheikh & Rault, 2016; Phuc & Duc, 2021; Brun-

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Aguerre et al., 2017; Agénor & da Silva, 2019; Prasertnukul et al., 2010). Even in the three pioneer countries that implemented the first ITF, an investigation by Nasir & Vo (2020) found evidence of country-level heterogeneity in the exchange rate pass-through. They showed that a positive shock to the real effective exchange rate led to increased inflation in Canada, contrary to that in the UK. At the same time, New Zealand, the first adopting country of ITF, showed a lower exchange rate pass-through to inflation and trade balance than Canada and the UK. Nasir and Vo (2020) suggested that the divergence results in the three pioneer countries are due to country-level heterogeneity and time variations where if there is something in a certain period, it can happen the other way around. In alignment with Nasir & Vo (2020), Forbes et al. (2017) highlighted nation-specific variations, temporal fluctuations, distinct shock attributes, and structural factors as contributors to variations in ERPT. In addition, Flamini (2007) argued that if ITF reduces ERPT, the effect is endogenously imperfect depending on the level of insulation of the economy from foreign and monetary policy shocks.

Although the results in the empirical tests vary, the ITF is still perceived as an effective policy to target inflation, but with due regard to country-specifics in its policy implementation. Particularly for developing economies, where exchange rate fluctuations often cannot completely absorb the impact of external shocks, attention to exchange rate stability becomes crucial. Moreover, the degree of economic openness in developing countries is increasing, leading to greater integration with the global economy and heightened vulnerability to external shocks.

Traditional ITF believes that ITF reduces exchange rate pass-through to inflation, allowing the markets to absorb most of the exchange rate shocks, and hence, there is no need to adjust the selling price variations. The assertion assumes a complete pass-through, suggesting that increased economic openness contributes to greater pass-through comprehensiveness, reducing the ERPT (Gust et al., 2010). Nevertheless, amidst a substantial body of literature concurring with diminished pass-through in a low inflation context post the embrace of inflation targeting across numerous nations, empirical findings also indicate divergent pass-through extents contingent upon the size and the direction changes of the exchange rate (Tunc, 2017). Besides, the source of exchange rate changes emerges as a critical issue for the differential pass-through that requires observing the disaggregated price data. Brun-Aguerre et al. (2017) revealed an asymmetric pass-through for currency appreciations and depreciations into import prices. They found that depreciations are more strongly pass-through than appreciations in the long run. The asymmetric effect is stronger in more import-dependent than less-dependent economies. Therefore, global economic disruptions, including exchange rate pass-through, wherein alterations in exchange rate impact processes across the supply chain, emerge as the challenge to attaining the inflation target (Phuc & Duc, 2021).

When it comes to policy execution, particularly within developing economies, preserving a steady exchange rate is regarded as the pivotal element in upholding price stability. Table 1 shows the correlation between nominal exchange rate and consumer price changes. By designating the 2008 global financial crisis (GFC) as the cut-off point, the observed association between exchange rate fluctuations and inflation rate alterations

within four nations that embraced ITF appears to rise when examining the periods preceding and succeeding the GFC. The relationship between exchange rate fluctuations and inflation, previously characterized by a relatively modest connection before the 2008 GFC, underwent a substantial increase post-GFC. This indicates an increase in ERPT against inflation in those countries.

Table 1. Correlation Between Exchange Rate Changes and Consumer Price Changes

	1999 to 2007	2008 to 2022
Indonesia	-0.10901	0.278638
Korea	0.054897	0.205608
Thailand	0.109398	0.111604
The Philippine	-0.13119	0.262992

Another intriguing feature worthy of observation pertains to the alteration in the correlation direction between fluctuations in the exchange rates and inflation in Indonesia and The Philippines. 2008 GFC has altered the direction where domestic currency depreciation is associated with higher inflation post-2008 GFC. It is of particular interest to further investigate this asymmetrical impact, whether this heightened indication of ERPT is a result of shifts in the economic structure in response to the distinct shocks as elucidated by Phuc & Duc (2021), Forbes et al. (2017), Nasir et al. (2020) and Brun-Aguerre et al. (2017) or whether it can be attributed to the degree of economic openness and its sensitivity to external and monetary policy shocks as expounded by Flamini (2007) or the extent to which small open economies depend on their trading partners investigated by Chua (2018).

Unlike Flamini (2007), Gust et al. (2010) argued that an economy's degree of openness to the global market inversely correlates with the magnitude of Exchange Rate Pass-Through (ERPT). With increased trade integration, exporters have become more responsive to the prices of their competitors. Foreign exporters find it optimal to vary their markup in response to shocks that change the exchange rate, insulating import prices from exchange rate movements and lessening ERPT against inflation. The proposition Gust et al. (2010) put forward was congruent with the conclusion drawn by Coulibaly and Kempf (2010), who examined the responses of ERPT to pricing and determined that the implementation of ITF with higher openness leads to a reduction in pass trough effect affecting consumer, import and producer prices.

This paper investigates the nexus between the degree of openness and its impact on the ERPT within four ITF-adopting countries in Southeast Asia. Associating economic openness with ERPT remains an area that warrants further exploration, especially in developing economies. Furthermore, this paper will provide additional insights into how the level of openness impacts Exchange Rate Pass-Through (ERPT) within the four ITF-adopting economies in Asia. The mechanism through which alterations in exchange rates lead to price adjustments can be delineated into two distinct pathways. A direct pass-through involves changes in the cost of imported goods due to a shift in exchange

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rates. When the domestic currency depreciates, the cost of imported goods denominated in foreign currency increases, leading to higher prices for imported products in the domestic market. An indirect pass-through is a channel through which exchange rate fluctuations affect prices through changes in competitiveness and shift domestic demand. Domestic currency depreciation can make domestically produced goods relatively cheaper for foreign consumers, boosting export demand. It can prompt consumers to switch from imported goods to domestic substitute goods. This substitution can influence the prices of domestically produced items, extending its impact beyond goods associated with imports (Hüfner & Schröder, 2005).

In addition to the significance of this research by linking it to increasing economic openness, this research contributes to the ERPT literature in terms of its comprehensive observations with the time dimension since the ITF was implemented until the most recent time. This provides a fair assessment with respect to the empirical literature body, where the results vary due to the varying time dimensions of the observations.

METHODS

We modify a single equation of the ERPT model developed by Campa and Goldberg (2005) as follows:

$$\Delta CPI = \tau + \sum_{0}^{4} \beta_i \Delta ER_{t-i} + \rho \Delta GDP_t + \gamma \Delta IR_t + \delta \Delta TS_t + \varepsilon_t \quad (1)$$

where *CPI* is the consumer price index, *ER* is the nominal exchange rate, *GDP* is real GDP, and *TS* represents trade openness as a ratio of trade (export plus import) to the GDP.

Unlike Campa & Goldberg (2005), who used import prices as the dependent variable per the underlying standard ERPT theoretical framework, we use consumer price as the dependent variable. This considers the concerns of this research regarding ERPT in the context of ITF and economic openness. Consequently, we include the policy interest rate *(IR)* and trade share *(TS)* variables as the explanatory variables against consumer prices.

The empirical model takes the first-differenced form to address the non-stationarity issue. ERPT identification is carried out by looking at the coefficient β_i which also shows price elasticity in response to changes in the exchange rate over the horizon. The short-run ERPT is given by β_0, while the long-run ERPT is given by $\sum_0^4 \beta_i$. Equation *(1)* estimate uses quarterly data; hence, the parameter estimates would provide "ERPT five quarters later" as it captures the accumulated impact of shocks over five consecutive quarters. The approach is widely applied in the literature (Aron et al., 2014). The estimation of equation *(1)* accomplishes a structural analysis of the ERPT and the factors expected to explain the short-run and long-run ERPT in the context of ITF and economic openness.

This model can be said to be a combined model between distributed lag and adaptive expectation. The effects of exchange rate changes on price changes are distributed periodically over four quarters since the occurrence of exchange rate shocks, and these effects decay exponentially from the first quarter to the fourth quarter. Hence, the coefficients $\sum_0^4 \beta_i$ decreases exponentially following the pattern as expressed in the following equation:

$$\beta^i = \beta_0 \lambda^i \tag{2}$$

where λ^i is the rate of decay of the distributed lag and lies between 0 to 1. The long-run effect of ERPT is defined as $\sum_0^4 \beta_i$ following Koyck's (1954) rule where (Gujarati, 2003):

$$\sum_0^4 \beta_i = \frac{\beta_0}{1 - \lambda^i} \tag{3}$$

At the same time, the effect of changes in GDP rates, policy rates *(IR),* and trade share *(TR)* on changes in consumer prices *(CPI)* follows an adaptive expectation pattern where:

$$\Delta\omega'_t = \phi'(\omega'_t - \omega'_{t-1}) \tag{4}$$

with ω' is a vector of explanatory variables that include *GDP*, *IR,* and *TS,* respectively, and the parameter ϕ' denotes the coefficient of expectation, which lies between 0 and 1.

The subsequence method is carried out to portray the dynamic pattern of ERPT in each ITF-adopting economy. Following Forbes et al. (2018), García-Cicco & García-Schmidt (2020), and Yilmazkuday (2022), the dynamic pattern of ERPT is obtained from the Cholesky decomposition of μ as follows:

$$ERPT\ (n) = \frac{\sum_{i=1}^{n} \mu_{ER}^{cpi}}{\sum_{i=1}^{n} \mu_{ER}^{ER}} \tag{5}$$

Where $ERPT\ (n)$ represents the reaction of consumer prices in response to changes in the exchange rate for n periods ahead; $\sum_{i=1}^{n} \mu_{ER}^{cpi}$ is the cumulative impulse response of consumer price *(CPI)* to the exchange rate *(ER)* shock and $\sum_{i=1}^{n} \mu_{ER}^{ER}$ is the cumulative changes in the *ER* in response to the shock associated with the *ER*. The ERPT is then the ratio of the cumulative percentage change in *CPI* relative to that in ER, originated by the shock associated with *ER*. The Cholesky decomposition to generate ERPT is based on the simple quarterly model of bivariate *CPI-ER* vector autoregression (VAR) where μ denotes the innovation variable in the VAR system as follows:

$$x'_t = \alpha + \sum_{k=0}^{k} \beta_k x'_{t-k} + \rho\delta'_t + \mu'_t \tag{6}$$

where x' is a vector of variables that are assumed to be endogenous and x' consists of ER, CPI, GDP, and TS. δ' is a vector of control variables that are exogenous, and μ' is a vector of residuals. The dataset used for estimating equations one through three was sourced from international financial statistics (IFS).

Estimating a set of empirical models is based on quarterly data for each country, with a time dimension from the fourth quarter of 2005 to the first quarter of 2023 for Indonesia. Meanwhile, for Korea, the estimate is generated based on observations ranging from the 1999 third quarter to the 2023 first quarter. The estimate for Thailand is based on observations from the 2002 third quarter to the 2022 third quarter. Finally, the Philippines estimate was generated based on observations ranging from 2000 in the second quarter to 2022 in the fourth quarter. This time span marks the implementation of ITF from the beginning until the latest data available in each country.

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RESULTS AND DISCUSSION

Table 2 shows the estimation results of the ERPT model in equation (1) using a full sample of quarterly data from the beginning of ITF implementation until the most recent data available for each country. The coefficient estimates displayed in Table 2 portray a short-run behavior of consumer price changes against ERPT and other variables whose mechanism through which they influence consumer price changes is the adaptive expectation mechanism. The coefficient estimate for ΔER in all countries, representing how changes in consumer price react to changes in exchange rates, shows a positive direction. This suggests that consumer prices tend to increase in the short horizon when the domestic currency depreciates. However, the coefficients for Indonesia and the Philippines are not statistically significant.

Table 2. Estimates of the Distributed Lag-Adaptive Expectation Model

	Indonesia	Korea Republic	Thailand	Philippine
Constant	1.408235***	0.531408***	0.473726***	0.899823***
ΔER	0.000253	0.003042***	0.170458*	0.100219
ΔER (-1)	-5.81E-05	0.002597**	-0.139062	0.105250*
ΔER (-2)	-0.000177	0.000955	-0.091712	-0.042545
ΔER (-3)	-0.000239	0.000241	0.114982	-0.081218
ΔER (-4)	4.84E-05	8.36E-05*	0.075886	-0.046951
ΔGDP	7.02E-10	1.13E-08	5.43E-06**	1.71E-06
ΔIR	0.626418***	0.528988***	0.927131**	-0.000115
ΔTS	-0.097255	0.097756**	0.011254	-0.000567

***) denotes: significant at α = 1%; **) significant at α = 5%; *) significant at α = 10 %.

The adaptive expectation mechanism that requires the coefficients on the *GDP*, *IR*, and *TS* variables to be positive and lie between 0 and 1 is satisfied for Indonesian, Korean, and Thailand ERPT estimates (Table 2). Besides, at least one of three variables deliberating adaptation mechanisms is statistically significant. As for the estimation of the Philippines ERPT, the coefficient on the *IR* and *TS* variables is negative, which means that it does not meet the conditions of the adaptive expectation mechanism. In addition, none of the vector variables expected to capture the adaptive expectation mechanism in the Philippines is statistically significant. Therefore, the adaptive expectation mechanism of how GDP, policy rate, and trade share influence changes in consumer prices applies in Indonesia, Korea, and Thailand.

The ERPT, which essentially measures the extent to which changes in exchange rates are transmitted to consumer prices, appears on the magnitude of the coefficient (ΔER). In the short term, ERPT is indicated by β_0, while in the long run, ERPT is indicated by of $\sum_0^4 \beta_i$. Nevertheless, given that $\sum_0^4 \beta_i$ are not statistically significant for all countries, one can infer that the pass-through effect decays in the long run, suggesting that changes in consumer prices will respond to changes in exchange rates during the short period until a certain point. The estimation of equation (5) based on the structural VAR in equation (6) confirms this conclusion. As shown in figure 1, consumer prices respond to shocks in exchange rate changes relative to cumulative responses of shock

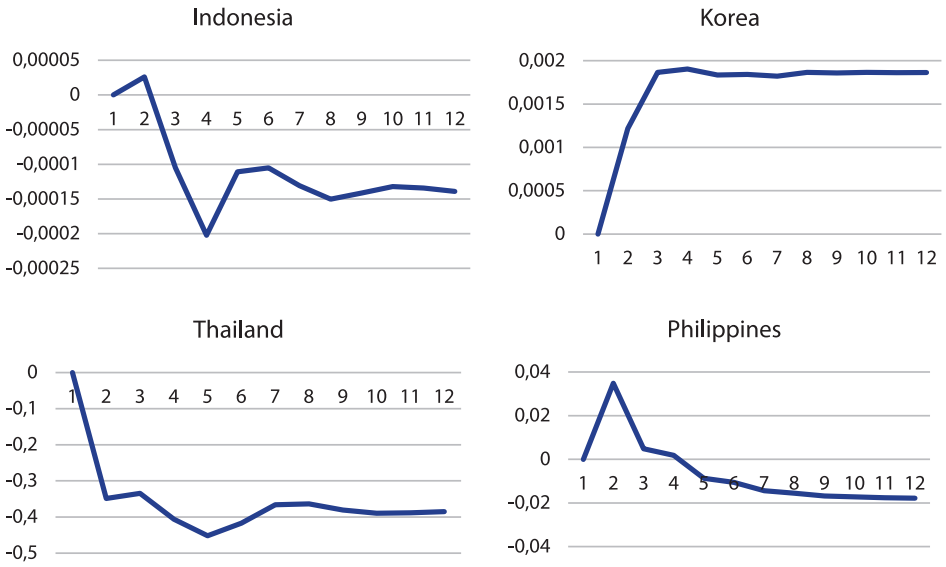
associated with the exchange rate several periods after the shock with a tendency to increase prices. That is, there is a point where the ERPT fully decays. At this point, consumer prices are in equilibrium at a new level, either higher (Korea) or lower than the initial level before the exchange rate shock (Indonesia, Thailand, and the Philippines).

We also estimate the linear model of how consumer price is explained against its explanatory variables representing the long-run equilibrium. The estimate of the long run-specification is also aimed at a robustness check shows in equation (7). The estimate for equation (7) is shown in table (3).

$$CPI = \varphi + + \sigma GDP_t + \eta IR_t + \kappa TS_t + \nu_t \quad (7)$$

With the *TS* variable for Indonesia as an exception, all variables in the long-run estimation have statistically significant impacts in explaining consumer price changes. It suggests that the model specifications developed in this paper are robust in terms of the underlying theoretical framework. In this case, the estimate of the long-run model specification shows the long-run equilibrium of the consumer prices against its explanatory variable, irrespective of the short-run model estimates, which indicate disequilibrium conditions (See Pesaran, 1997; Hendry & Richard, 1982).

Figure 1. Estimates of the ERPT based on the Distributed Lag-Adaptive Expectation Model



The analysis carried out in this study is the overall ERPT, in which case the ERPT is directly linked to consumer prices without looking in more detail at import, export, and producer prices. Because the analysis is aimed at the overall ERPT, it is essential to distinguish ERPT in the short run from ERPT in the long run. By differentiating short-run and long-run ERPT and associated with ITF policy and economic openness, this paper detects the final result of ERPT on consumer prices, which is accountable for ITF.

The estimation results presented in this paper confirm previous findings that ERPT behavior in ITF-adopting countries varied depending on country-specific heterogeneity, time variance, and types and sources of shocks in the economy. The estimate of the

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short-run ERPT model results in positive signs of ERPT, indicating that changes in the exchange rate will be transmitted to consumer prices, raising consumer prices in the short run (Table 2). Considering that the parameters are statistically significant for Korea and Thailand, the findings suggest that the impact of the exchange rate on consumer prices, in terms of the pass-through effect, was clear, but not in Indonesia and the Philippines.

Table 3. Estimates of the Long-Run Consumer Price Model

	Indonesia	Korea Republic	Thailand	Philippine
Constant	12.69761**	22.41288***	44.96244***	85.54418***
ER	0.001492***	0.008632***	-0.458698***	-0.217044*
GDP	4.51E-08***	1.09E-07***	2.44E-05***	2.08E-05***
IR	-0.861316***	-0.835616***	-0.719115*	-1.808929***
TS	0.027406	0.428298***	0.152190***	-0.502069***

***) significant at $\alpha = 1\%$; **) significant at $\alpha = 5\%$; *) significant at $\alpha = 10\%$.

These results must be read cautiously, considering that the ERPT model developed in this paper is the ERPT in the context of ITF and economic openness. Thus, these results may unnecessarily conclude that there is an indication of short-run price rigidity in Indonesia and the Philippines in response to changes in exchange rates. It could be that consumer prices react in response to exchange rate changes, but in the context of the ITF, the monetary authority, through its policies, mitigates the impact of exchange rate changes on consumer prices. The coefficient of *IR* in the long run estimate with a negative sign supports this intuition, meaning that a higher policy interest rate mitigates consumer price changes in the long run, as can be seen in the robustness check of Table 3. As explained by Ha et al. (2020), the ERPT tends to decrease in countries with a combination of a free-floating foreign exchanger regime and a credible ITF implementation, where central bank independence can greatly facilitate the task of stabilizing inflation by using the exchange rate as a buffer against external shocks and raising the policy rate simultaneously. Similarly, Prasertnukul et al. (2010) have conveyed that implementing ITF will help countries reduce the pass-through effect of the exchange rate changes on consumer prices.

However, in the short run, the effect of policy interest rates escalates consumer prices through an adaptive expectation mechanism, whereby economic agents will immediately react to interest rates upward alteration by the monetary authority by raising prices (Table 2). This becomes a significant contribution of this research to the literature on ERPT. Given the positive pass-through effect of the exchange rate on consumer prices, this not only underscores a crucial finding within this research but also presents a significant consideration for the central bank, wherein interest rates serve as the primary policy tool to target inflation. This observation suggests that when the central bank increases the policy rate to counter inflationary pressure, it is plausible that workers and producers could foresee the likelihood of further price increases. Consequently, they might modify their future actions, such as workers negotiating for higher wages and producers setting higher selling prices.

Similarly, when looking at trade shares. The impact of trade openness on consumer prices takes a different direction in the four economies, where Korea is the only nation

by which trade openness statistically significantly impacts consumer prices, while the others lack statistical significance (Table 2). This finding implies that consumer prices in Korea are sensitive to trade openness in the same direction. However, trade openness seems to have an impact on consumer prices in the long run, with the Philippines as an exception, as indicated in the robustness check of Table 3. The direction through which trade openness impacts consumer prices is that the more intense an economy gets involved in global trade, the higher the ratio of exports and imports to its GDP, and the more sensitive consumer prices to go up in the long run. This finding implies a critical insight into the empirical literature on ERPT. First, similar to Phuc and Duc (2021), we found various patterns concerning the effect of openness on inflation over the pass-through effect in the short run. It implies that even within an inflation-targeting framework, the effect of trade openness on consumer prices is unclear in the short term. Second, there exists a one-way connection between trade openness and consumer prices in the long term, in the sense that the more open an economy is, the more sensitive the prices of domestic goods are to shift upward. This highlights an incomplete pass-through effect, as has been recognized in earlier research works (See Flamini 2007; Phuc and Duc, 2021; Aron et al., 2014).

Further investigation needs to be carried out to see how this openness impacts consumer prices by looking at the impact on import, export, and producer prices distinctively, conditional on the economic structure. This is because changes in the exchange rate will be responded differently by economic agents. The depreciation of the domestic currency will directly affect consumer prices through the import price channel. Meanwhile, the same depreciation will also affect producer prices through rising production costs due to rising prices of imported intermediate goods. The depreciation of the domestic currency will also affect producer prices and how much a producer sets the margin level given the market structure.

Concerning the response of consumer prices to changes in GDP, the estimation results show that through an adaptive expectation mechanism, positive changes in GDP will push prices up in the short term. For all countries, the coefficient estimate is positive, although only the Thailand estimate produces a statistically significant estimated coefficient (Table 2). In this case, economic agents will react to the business cycle and anticipate the future where GDP is taken as the factor for workers to negotiate wages; firms take the increase in national income as information of rising future purchasing power and demand and, therefore, anticipate by increasing prices. The robustness test through the long-run equation confirms a positive relationship between changes in GDP and consumer prices. The estimation parameters for all countries are positive and statistically significant (Table 3).

CONCLUSION

This paper contributes to the empirical literature on ERPT by investigating an overall ERPT using combined distributed lag and adaptive expectation models. Using a quarterly database from the beginning of the implementation of ITF to the current period, we capture the effects of ERPT over a complete time horizon throughout ITF implementation. Several noteworthy findings emerge from the study; notably, the pass-through effect on consumer price changes exhibits distinct variation across individual economies, with an inclination wherein exchange rate alterations tend to escalate consumer

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prices in the short time horizon. However, the pass-through effect will decrease in the long run in line with an effective implementation of ITF. The short-term pass-through effect occurs through an adaptive expectation mechanism where economic agents will respond to domestic currency depreciation, increased GDP, trade share, and even increased policy rates by adjusting prices upward. However, in the long run, the effect of policy rates will reduce the pressure on consumer prices through the pass-through effect.

Another pivotal finding in this study pertains to the influence of economic openness, which appears to exert upward pressure on consumer prices. This finding contrasts the theoretical presumption that economic openness will lower consumer prices through production chain and competition channels. It suggests that the monetary trilemma is an issue that is still relevant in these countries. On the one hand, policy interest rates effectively control prices in the long term. On the other hand, openness with a floating exchange rate system increases consumer prices. It suggests that policymakers are supposed to strengthen the policy mix and shift the policy framework from flexible to integrated inflation targeting.

Further investigation is needed by analyzing the pass-through effect on prices in more detail, including import, export, producer, and consumer prices. An investigation also needs to be carried out regarding the possibility of fear of floating in small open economic countries within a perspective of the trilemma between free exchange rates, economic openness, and inflation targets.

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