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BEYOND LINEARITY: EXCHANGE RATE AND FUEL PRICE EFFECT ON CURRENT ACCOUNT BALANCES (STEPS TO STRENGTHEN REGIONAL COOPERATION IN AN EMERGENCY SITUATION)

Maaz Javed
Faculty of Business and Finance, University of Prince Mugrin, Madinah, Saudi Arabia
Email: m.javed@upm.edu.sa

Misbah Hameed
University Sains Malaysia
Email: misbah_hameed@outlook.com

Kinza Qureshi
University Sains Malaysia
Email: kinza.kureshi@outlook.com

Sidra Hameed Qureshi
University Sains Islam Malaysia
Email: hqsidra@gmail.com
Corresponding Author: Misbah Hameed, misbah_hameed@outlook.com

ABSTRACT
This study investigates the influence of exchange rates and fuel prices on the current account balance, using Nonlinear Autoregressive Distributed Lag (NARDL) to capture asymmetries and nonlinear dynamics. This approach allows the study to uncover channels through which external shocks propagate across the balance of payments. It identifies long-term negative impacts and short-term variabilities, with government interventions playing a key role in mitigating oil price volatilities. This study further highlights the necessity for tailored economic strategies that accommodate diverse market conditions, emphasizing the importance of stable exchange rate policies.

INTRODUCTION
The balance of payments of economies that import oil is susceptible to sudden shocks in oil prices and exchange rates, which have a significant effect on the overall economy through the current account balance (Kaminsky et al., 1998, 1999; Varlik et al., 2020; Başarır et al., 2016).

When faced with an oil price shock, oil importing economies cannot immediately reduce their oil consumption, resulting in an initial decline in the current account balance, typically in the short term.

Unfortunately, this initial effect is followed by a deficit in the current account due to subsequent shocks, as consumption expenditures decline over the period of time (Agmon et al., 1978). Consequently, changes in oil prices have a more severe effects on the current account balance of oil importing countries compared to oil exporters. This is because oil importers have limited fiscal space due to high oil import bills, which hinders their ability to invest in alternative energy sources to meet domestic needs. The fluctuations in oil prices negatively impacts the current account balance of oil importers, and indirectly influence the adoption of RE, as explored in previous chapter.

However, this study endeavors to evaluate the linear and nonlinear impact oil price and exchange rate on current account balance (Bass, 2023). To conduct this analysis, an economic framework incorporating several pivotal factors is employed. Firstly, it is imperative to assess the price elasticity of oil demand, which elucidates the responsiveness of quantity demanded to change in oil prices. If oil demand is relatively inelastic, indicating less responsiveness to price fluctuations, a change in oil prices could exert a substantial impact on the current account balance. Another aspect to take into account is the income elasticity of oil demand, which ascertains how changes in income levels influence the quantity of oil demanded (Huntington, 2019).

The Asian countries, including Pakistan look forward to crude oil and natural gas for contentment of their main energy share. However, unfortunately, the domestic resources are insufficient to fulfil the energy demands and hence necessitating the import of oil and gas. Achieving equilibrium in an economy requires a well-adjusted balance between demand and supply, which is crucial for sustainable economic growth. But due to continuously and ever-increasing energy demand and depletion of domestic energy resources, the Asian economies are bound to import the oil from abroad. Oil being a major source to fulfil energy demand puts pressure on the current account of these countries. Besides current account and exchange rate relationship, this essay made a further attempt to explore the nexus between oil price changes, exchange rate and current account balance.

To be more precise, any fluctuation in oil price influences the exchange rate and current account through different channels with the context of oil importing or oil exporting countries. The relationship between global oil prices and a country's exchange rate is of great importance, as any changes in oil prices are transmitted through the exchange rate to the real economy (Eugster, 2022; Bresser, 2022). The influence of oil price changes on the exchange rate is mediated through different channels, which also vary depending on whether a country is an oil importer or exporter. An increase in international oil prices leads to a current account surplus for the oil-exporting countries and vice versa. Conversely, a decrease in international oil prices is more advantageous for oil-importing countries than for oil-exporting nations.

Additionally, the oil price impacts on the exchange rate eventually effects the current account depends on the asymmetry among the Asian countries. For instance, the impact of oil price shocks on the current account balance (CAB) primarily depends on how a country generates its wealth (Golub, 1983). If a country's wealth is closely tied to the external sector of its economy, then oil prices will affect the current account through both the exchange rate and direct channels.

The motivation for adopting a nonlinear framework stem from growing empirical and theoretical evidence suggesting that macroeconomic responses to external shocks are often nonlinear and state contingent. For example, exchange rate adjustments may have diminished or amplifying effects on trade balances depending on existing trade elasticities, degree of import dependence, or the initial current account position. Similarly, the effect of oil price changes on net exports and consumption may differ depending on the size and direction of the shock, the underlying oil dependency of the economy, and the prevailing policy environment. Hamilton (2009) argues that the macroeconomic impact of oil price increases is significantly larger than that of price declines, emphasizing the need to account for non-symmetric effects. Likewise, Kilian and Vigfusson (2011) provide robust evidence of nonlinearities in the oil price–output nexus, challenging the conventional linear transmission mechanisms typically employed in macroeconomic modelling.

The significance of this research lies not only in addressing these conceptual gaps, but also in its potential to inform exchange rate and energy policy design in a post-pandemic, high-volatility global environment. For many Asian economies—particularly oil-importing nations such as India, Pakistan, and the Philippines—the dual pressures of exchange rate depreciation and rising oil prices can simultaneously strain external balances and macroeconomic stability. Recognizing whether these relationships exhibit threshold behaviour or asymmetry is crucial for designing policies that are robust to exogenous shocks and that minimize adjustment costs. In this light, exploring the nonlinear behaviour of the current account in response to oil and exchange rate volatility offers not only empirical novelty but also practical policy relevance.

Contribution of the Study

This study distinguishes itself by explicitly focusing on nonlinear dynamics and its asymmetric effects across diverse Asian economies. Unlike conventional studies that assume linearity or homogeneity, this research integrates NARDL model to capture structural breaks, and country-specific analysis, providing a more realistic depiction of how shocks affect the current account under different economic conditions. This study further aims to investigate the dynamic effects of oil prices and exchange rate volatilities on the current account of selected Asian economies. Here, an exchange rate shock is defined as a sudden and unexpected change in the value of a country's currency relative to other currencies, which is not anticipated by market participants or fully explained by ongoing economic trends. By explicitly defining exchange rate shocks, the study captures their short-term and asymmetric effects on the current account balance, allowing for a more precise analysis of how Asian economies respond to both anticipated and unanticipated currency fluctuations. Previous studies have snubbed to explore this particular relationship for Asian countries. The reason for selecting these countries is their similar economic outlook, reliance on oil imports, and the economic challenges these countries are facing due to high current account deficits. The research objectives are achieved by employing the non-linear ARDL which help to disclose how the current account is influenced by oil prices and exchange rates.

Review of Literature

The nexus between oil prices volatility, exchange rate fluctuations and current account imbalances is a subject of significant research since the past three decades (Bass, 2023). This is attributed to the frequent occurrence of the crises as well as the continuous rise in the scarcity of fossil energy (Adun et al., 2022, Duarte et al., 2015; Mussa, 2000). The short-term oil price impact on CAB has been widely studied in the literature. Extensive literature has focused on examining the short-term impact of oil prices on the CAB (Varlik et al., 2020; Başarır et al., 2016; & Change et al., 2023). It is well established that oil-importing countries face higher oil import bills because the demand for oil is relatively inelastic when it comes to price changes., which can lead to an upsurge in the current account deficit in the short run (Kilian et al., 2009). However, it is important to note that the current account balance is also influenced by exchange rate dynamics (Yildirim et al., 2021, Wairooy et al., 2023; Eugster, 2022; Bresser, 2022). This study aims to analyze the impact of both oil price volatility and exchange rate volatility on the current account balance, specifically with the background of Asian economies.

In the case of a small open economy, the nexus between oil price and the exchange rate is unidirectional as the former is treated as exogenous (Malik et al., 2019; Lv et al., 2019, Anjum et al., 2019). It is then through the exchange rate that the CAB of the country is influenced. But if the country is dependent more on the external sector in terms of primary or secondary income, then a change in oil price also affects the current account directly which ultimately put pressure on the country's exchange rate. Through these channels, the relationship between the ER and the CA can be uni- or bi-directional. When there is a change in international oil prices, it results in higher income for oil-exporting countries. This, in turn, presents an opportunity for these countries to accumulate more foreign assets, leading to an increase in their current account balance (Iwatsubo et al., 2019; Huntington, 2015; Amuzegar, 1982).

There is a significant relationship among exchange rate and current account (Bitzis et al. 2008; Eugster, 2022; Bresser, 2022). In the empirical studies, several studies have examined the relationship between oil prices and exchange rates (Ahmed, 2016; Coudert, 2005; T. et al., 2014). It is commonly observed that this relationship is inversely proportional. Specifically, when oil prices increase, the exchange rate tends to depreciate significantly (Jiranyakul, 2015; Tiwari, 2016; Ji, 2018; Kin, 2014), and the impact of oil price hikes on the exchange rate is often persistent (Dogan, 2012; Ahmed, 2016; Nouira, 2018). Many researchers have confirmed this relationship (Fowowe, 2014; Dawson, 2007). However, some studies using impulse response functions have found the nexus between OP and exchange rates to be insignificant (T.et al., 2014).

Theoretical Framework

Any fluctuation in oil price influences the exchange rate and current account through different channels. For instance, an increase in international oil prices leads to a current account surplus for the oil-exporting countries while it is the opposite for oil-importing countries. Conversely, a decrease in international oil prices is more advantageous for oil-importing countries than for oil-exporting nations. The alteration in international prices also leads to wealth redistribution within a country, thereby impacting the exchange rate. When oil prices rise, oil-importing countries must spend more on fuel imports, increasing the import bill and widening the current account deficit (Hamilton, 2009; Kilian, 2009). The larger deficit reduces net foreign currency inflows, creating pressure on the domestic currency to depreciate, as demand for foreign currency rises to pay for imports (Chen et al., 2007). This redistribution of wealth from domestic consumers and firms to foreign oil exporters captures both the fiscal and external sector impact of oil price increases. In this context, higher oil prices effectively act as an exogenous shock that can alter the current account and exchange rate simultaneously, justifying its inclusion in the analysis. This kind of impact, flowing from oil price to the current account deficit and to the exchange rate, is illustrated in early theories proposed by Krugman (1983), Golub (1983), and Rogoff (1991). These classical theorists believe that an increase in the oil prices causes the fluctuation in exchange rate for oil-importing countries and leads to appreciation when the oil price drops.

When international oil prices change, it results in the increase in the income level of oil-exporting countries, and it provides an opportunity to hoard more foreign assets causing an increase in the CAB. On the contrary, an increase in oil prices internationally is an expense for oil-importing countries as it puts negative pressure on the income level of these countries. A decline in income or foreign assets of oil-importing countries causes the depreciation of the exchange rate of an oil-importing country. But the effect of oil price increases on oil-importing countries does not stop here. An upsurge in oil prices further makes the oil importer less competitive in the international market. So, these negative oil price shocks not only decrease the income level of oil importers (Turhan et al., 2013) but also hurt their trade balance.

These effects of rising oil prices on oil-importing countries lead to a transfer of wealth from these nations to oil-exporting countries. Some of the literature also focuses on the short- VS the long-term impacts of oil price volatility on the exchange rates (Khudhair, et al., 2023; Liu et al., 2015; Coudert et al., 2008; Lizardo and Mollick, 2010). but other studies emphasize only the short-run impact. The reason for considering the impact of oil prices on the short-term aspect of this relationship is the efficiency of the currency exchange market in reacting to any change in the economy.

Data and Methodology

While exploring the impact of oil price and exchange rate shocks on the current account of selected Asian economies, there exists a possibility of symmetric as well as asymmetric relationship. The non-linear auto-regressive distributed lag model (NARDL) developed by Shin et al., (2014) is found to be an appropriate methodology to apply i.e., an extension of Pearson et al., (2011). One of the major advantages of using NARDL is that it considers the independent variables even if they are integrated at level zero or one (Pesaran et al., 2001). In addition, this approach can be employed if the variables of interest have long run relationship with different order of integration. It means that the cointegration analysis that involves relatively small sample sizes are robust using the bound test . So, based on the bound test procedure, the preliminary model for the simple linear regression model can be written as below. In addition to oil/fuel price and exchange rates, the other variables included in the model are interest rate, inflation rate, and industrial production index.

$$CA_t = \alpha_0 + \alpha_1 IR_t + \alpha_2 OP_t + \alpha_3 IP_t + \alpha_4 ER_t + \alpha_5 INF_t + \varepsilon_t \quad (3.1)$$

In this model, the current account is the dependent variable, which is influenced by the interest rate (IR), oil price (OP), industrial production (IP), exchange rate (ER), and inflation rate (INF) in the economy. To convert this equation into an autoregressive distributed lag (ARDL) model, lag terms need to be included. This transforms equation 1 into a conditional ARDL model with the following specifications:

$$\Delta CA_t = \alpha + \beta_0 CA_{t-1} + \beta_1 IR_{t-1} + \beta_2 OP_{t-1} + \beta_3 IP_{t-1} + \beta_4 INF_{t-1} + \beta_5 ER_{t-1} + \sum^{p}_{i=1} \delta_{1i} \Delta CA_{t-1} + \sum^{q}_{i=1} \delta_{2i} \Delta INF_{t-1} + \sum^{m}_{i=1} \delta_{3i} \Delta IP_{t-1} + \sum^{n}_{i=1} \delta_{4i} \Delta ER_{t-1} + \sum^{s}_{i=1} \delta_{4i} \Delta OP_{t-1} + \sum^{p}_{i=1} \delta_{4i} \Delta IR_{t-1} + \varepsilon_t \quad (3.2)$$

Here, the term Δ signifies the 1st difference operator, and εt is the disturbance term or white noise that is serially uncorrelated. This equation allows for the estimation of both short- and long-run effects in a single equation. The estimates for short-run coefficients can be obtained by taking the first difference, while the long-run estimates are derived by normalizing the β's. However, it is worth mentioning that the long-run estimates are only meaningful when there is co-integration or the presence of a long-run relationship.

The previous section describes the linear ARDL model. However, the effect of independent variables on the dependent variable may be asymmetric. The linear ARDL or NARDL model can be used when none of the variables are stationary at the 2nd difference. One of the significant advantages of using this model is its ability to handle all variables, regardless of whether they are integrated at a level or integrated at a level of one.

$$\Delta CA_{it} = \alpha + \beta_0 CA_{it-1} + \beta_1 OP^{+}_{it-1} + \beta_2 OP^{-}_{it-1} + \beta_3 ER^{+}_{it-1} + \beta_4 ER^{-}_{it-1} + \beta_5 INF_{it-1} + \beta_6 IP_{it-1} + \beta_7 IR_{it-1} + \sum^{p}_{i=1} \delta_{1i} \Delta CA_{it-1} + \sum^{q}_{i=1} \delta_{2i} \Delta INF_{it-1} + \sum^{m}_{i=1} \delta_{3i} \Delta IP_{it-1} + \sum^{s}_{i=1} \delta_{3i} \Delta IR_{it-1} + \sum^{z}_{i=1} (\theta^{+}_{i} \Delta OP^{+}_{it-1} + \theta^{-}_{i} OP^{-}_{it-i}) + \sum^{z}_{i=1} (\theta^{+}_{i} \Delta ER^{+}_{it-1} + \theta^{-}_{i} ER^{-}_{it-i}) + \mu_i + \varepsilon_{it} \quad (3.3)$$

In this revised model, the independent variable of oil price is replaced with fuel prices. To capture the influence of fuel prices, an energy price index is created. This index is calculated by assigning weights to the average prices of oil and LNG, based on their respective contributions to the energy mix across the selected Asian economies. This allows for a comprehensive assessment of the impact of fuel prices on the dependent variable in the model.

$$\Delta CA_{it} = \alpha + \beta_0 CA_{it-1} + \beta_1 FP^{+}_{it-1} + \beta_2 FP^{-}_{it-1} + \beta_3 ER^{+}_{it-1} + \beta_4 ER^{-}_{it-1} + \beta_5 INF_{it-1} + \beta_6 IP_{it-1} + \beta_7 IR_{it-1} + \sum^{p}_{i=1} \delta_{1i} \Delta CA_{it-1} + \sum^{q}_{i=1} \delta_{2i} \Delta INF_{it-1} + \sum^{m}_{i=1} \delta_{3i} \Delta IP_{it-1} + \sum^{n}_{i=1} \delta_{3i} \Delta IR_{it-1} + \sum^{z}_{i=1} (\theta^{+}_{i} \Delta FP^{+}_{it-1} + \theta^{-}_{i} FP^{-}_{it-i}) + \sum^{z}_{i=1} (\theta^{+}_{i} \Delta ER^{+}_{it-1} + \theta^{-}_{i} ER^{-}_{it-i}) + \mu_i + \varepsilon_{it} \quad (3.4)$$

In the NARDL model, an error correction term is included to determine the presence of cointegration or a long-run relationship between the exchange rate, oil price, and current prices. The lag length is denoted by p, q, m, and Δ represents the difference operator. Additionally, the term ∑zi=1 θ+i Δ FP+it-1 represents the short-run increase in fuel price or a positive fuel price shock, while ∑zi=1 (θ-i Δ FP-it-1) represents the short-run decrease in fuel price. These terms indicate an asymmetric relationship in the short run.

Model 3.4 is used to analyze the short-run asymmetric impact of oil price shocks and exchange rate shocks on the current account for the short-run impact of fuel price and exchange rate shocks on the current account balance.

To serve the objectives of this research, the data for thirteen Asian economies is collected. These countries comprise of Bangladesh, China, India, Indonesia, Japan, Malaysia, Pakistan, Philippines, Sri Lanka, South Korea, Nepal, Thailand, and Singapore. These countries were selected because they all belong to the same geographic region and share the characteristic of being majorly net importers of oil. The monthly panel data spanning from January 2010 to December 2023 has been used, resulting in a total of 168 observations for each country. The decision to commence the data from 2010 is intended to exclude the effects of the global financial crisis of 2007 and 2008. The data of exchange rates, oil prices, and LNG prices has been sourced from online trading platforms such as investing.com, along with WDI, while the monthly data for the current account, trade balance, and net income has been obtained from the respective central bank websites of relevant countries, IFRS and CEIC database. It is worth mentioning that the trade balance of goods is also considered, given that it is primarily affected by changes in the exchange rate compared to services trade.

Empirical Analysis

To assess the short- and long-term effects of OP and exchange rate shocks on the current account balance, we used the Panel Non-linear Autoregressive Distributed Lag (NARDL) approach, since the variables are stationary at level or at the first difference and none of the variables is stationary at the 2nd difference. To determine the appropriate lag length for our dynamic panel ARDL model, we utilize the Akaike Information Criterion (AIC), which allows us to select the lag length that maximizes the analysis across cross-sections. The optimal lag length will be involuntarily determined for the pooled mean group (PMG) dynamic panel ARDL model, enabling us to examine the impact of both oil/fuel price and exchange rate shocks. The results of the full sample Panel ARDL and Panel NARDL models are illustrated in the table below.

The outcomes are segregated into two sections vertically and horizontally. Vertically, the results are shown for linear ARDL and Panel Non-linear ARDL (NARDL) model . The horizontal bifurcation will categorize the impact of oil price shocks on the CAB into the short and long run. The term ECT shows the speed of recovery of the dependent variable. The negative sign of ECT exhibits the convergence from the short- to long-run. Empty cells in the table indicate that the results of either ARDL or NARDL are present for the specific independent variable. The negative (Neg) and positive (Pos) impact of energy price shocks (oil prices) and the exchange rate are presented for the NARDL model.

Table 1.1: Symmetric and Asymmetric Impact of Oil Price and Exchange Rate Shocks

Independent Variable	**Panel A (ARDL)**	**Panel B (NARDL)**
	Dependent variable: Current Account	
	Lag length: Dep=1, Indep=1	**Lag length: Dep:4, Indep=4**
Short-run dynamics		
	Coefficient	**Coefficient**
D(IR)	-0.4119***	-0.5763***
D(IPI)	0.4549	-0.0173
D(INF)	-2.3313*	-5.6967

D(ER)	-3.8142***	-
D(ER)-POS	-	-4.146
D(ER_NEG)	-	-2.4545
D(OP)	0.2196	-
D(OP)-POS	-	-1.5335
D(OP_NEG)	-	0.9910
ECT	-0.7548***	-1.1751***
Long-run dynamics		
IR	-0.0018	-0.0098
IPI	-0.2767***	0.3037***
INF	-1.0210**	0.0349
ER	-1.1586***	-
ER-POS	-	-0.8173**
ER-NEG	-	-0.1569
OP	-0.2196	-
OP-POS	-	1.0399*
OP-NEG	-	1.2368

Here *, ** and *** shows the level of significance at level 99, 95 and 90 percent, respectively.
Source: Author's own

As discussed, the effect of oil price shocks on CAB is explained in terms of linear and nonlinear ARDL. It is noteworthy that the oil price represents a significant portion of variations in the CAB. In this way, the OP shocks are closely linked with changes in the current account while adjusting for the discount rate and economic activity (Zare et al., 2015; Bitzis et al., 2008; Eugster, 2022; and Bresser (2022). In addition, the change in the exchange rates affects the current account as the expectations of future inflation also change which influences the trade balance of the country (Lobo, 2000).

Consequently, the literature exhibits that the different oil price shocks affect CAB differently (Aristovnik, 2007; and Huntington, 2015). Diverse literature shows the linear relations amongst the oil price and CAB. The outcomes of long-run impacts on current account balance are significant for the exchange rate but insignificant for the oil price shocks. It shows that the oil price volatility is absorbed by government policies when it fixes the price of oil in the domestic market. The impact of monetary policy, however, is significant and negative for CA in the short run but insignificant in the long run. It shows that any increase in the interest rate exerts a downward force on CAB as the crowding out of investment happens.

In comparison, the Panel NARDL model is not significantly different in this regard. For instance, in the long run, the exchange rate and the oil price shocks affect the current account only in case of positive change in these independent variables. The negative oil price and exchange rate shocks don't lead to changes in the current account. These results exhibit that in the long-run the increase in oil price and an exchange rate depreciation puts short-run downward pressure on the CAB of Asian countries (Jammazi et al., 2015). In the short run, the coefficients of ER and OP for NARDL are insignificant, meaning that the change in ER and OP takes more than one time period to be transmitted to change in the current account (Yildirim, et al.2021). It is also because of the government intervention in the energy market and the money market to stabilize the energy and currency prices in the past. It leads to a decrease in the transmission impact of changes in international prices on the domestic variables.

In addition, the error correction term shows the speed at which the current account leads to its equilibrium. Its value should be negative which shows the convergence. In both, Panel ARDL and panel NARDL, the value of this term is negative and significant. The value of coefficients shows that the speed of convergence is high, and the current account converges to the equilibrium value in the current period. Outcomes of both, ARDL and NARDL, demonstrate the similar statistic.

The following are the findings regarding the influence of fuel prices and exchange rates on the CAB. Here, in addition to oil prices, the analysis of ARDL and NARDL is carried out by taking the fuel prices shocks along with the exchange rate shocks. The benefit of taking fuel price at place of oil price is that the oil comprises some percentage of the total energy mix of the countries. Another major fuel source for energy-dependent countries is LNG. So, the same analysis is done by taking both the oil and the LNG. Price and constructing a fuel price variable i.e., a weighted average of oil and LNG prices in accordance with the energy mix of respective country over the time. These outcomes are illustrated in Table 1.2.

Table 1.2: Symmetric and Asymmetric Impact of Fuel Price and Exchange Rate Shocks

Independent Variable	**Panel A (ARDL)**	**Panel B (NARDL)**
	Dependent variable: Current Account	
	Lag length: Dep=1, Indep=1	**Lag length: Dep:4, Indep=4**

Short-run dynamics		
	Coefficient	**Coefficient**
D(IR)	-0.0372**	-0.0051***
D(IPI)	0.4549*	-0.0313
D(INF)	-1.2834	-1.6340**
D(ER)	-2.1126	-
D(ER)-POS	-	-1.5122**
D(ER_NEG)	-	-1.0358**
D(FP)	0.0814	-
D(FP)-POS	- -	-1.0135
D(FP_NEG)	- -	0.0210
ECT	-0.0812	-1.0017
Long-run dynamics		
IR	-0.1142**	-0.2467*
IPI	0.8826	0.3351**
INF	-0.8812**	-0.3420*
ER	-0.3470	-
ER-POS	- -	-0.0427**
ER-NEG	-	-0.1132*

FP	-0.5527***	-
FP-POS	-	-1.4250
FP-NEG	-	0.6697*

Here *, ** and *** shows the level of significance at level 99, 95 and 90 percent, respectively.

For the linear panel ARDL, the exchange rate is insignificant for the short- and the long-run while the fuel price has a significant impact on the current account only in the long run. It can be due to the reason that governments make the contract of oil and LNG imports, and it reduces the volatility at the local level and hence less impact on the current account balance of the country. The asymmetric relationship is shown in Panel B of Table 1.2. The only insignificant coefficient is for the positive fuel price shock in the long run. These results show that in the long run, only an increase in fuel prices leads to a current account deficit but an impact of the decrease in fuel price is not witnessed on the current account deficit. One of the main reasons for this insignificant impact on fuel prices is that for any negative change in it the government tries to benefit from it by not letting the whole impact of decreased prices to the consumers. It helps the government to earn revenue that can be used in the future at times of negative oil price shocks. However, due to a lack of financial cushion available to the governments, the positive shocks are passed through to the consumers in the short run and lead to a decline in the current account balance in the long run.

In the case of the exchange rate, there exists an asymmetric relationship with the current account balance as the coefficient signs are significant and negative for both the exchange rate appreciation and depreciation (Bitzis et al. 2008; Eugster, 2022; Bresser, 2022). In the short run, the impact of exchange rate depreciation leads to a decrease in the CAB and the value of the coefficient is quite higher relative to the exchange rate appreciation. Depreciation of a country's currency increases the domestic cost of imported goods and services, leading to higher import bills. When import payments rise faster than export receipts, the net trade balance deteriorates, which in turn reduces the current account balance. In other words, a weaker domestic currency makes imports more expensive relative to exports, putting downward pressure on the overall current account. This effect is particularly pronounced for countries that heavily rely on imported energy or intermediate goods, as the increase in import costs directly translates into a larger current account deficit. Exchange rate appreciation generally makes a country's exports more expensive for foreign buyers, leading to a decline in export volumes, while imports become cheaper, potentially increasing import demand. Both effects can deteriorate the current account balance, particularly in export-dependent economies. Accordingly, throughout the thesis, all references to the effects of exchange rate movements on the current account have been revised to clearly reflect that appreciation tends to reduce exports and may negatively impact the current account. It might be due to an increase in current value leads to a decrease in foreign income of the country but doesn't significantly improve the exports. The ultimate result of this asymmetric relationship is that the current account is exposed negatively to all types of exchange rate shocks.

Conclusion and Policy Implications

This research is an attempt to explore the nexus between oil price, exchange, and current account for

Asian economies. Since, current account balance and exchange rate variation debate has been hand in hand in literature particularly in conjunction with the current account and oil price relationship. Any deviation from the current account balance would result in an external imbalance, which prompts regulations through exchange rate movements to restore the balance. Understanding the patterns and composition of international trade is crucial for comprehending the liaison between the current account balance and exchange rate.

The asymmetric effects identified through NARDL highlight that positive and negative changes in both exchange rates and fuel prices do not produce mirror-image outcomes. Specifically, exchange rate depreciations generally improve trade balances by boosting exports in oil-importing countries, while appreciations may not correspondingly enhance the current account due to limited responsiveness of exports.

From a policy perspective, these findings carry several implications. First, countries should prioritize exchange rate risk management, including adopting consistent and transparent exchange rate policies, hedging strategies, and stabilizing interventions to reduce the negative effects of volatility on the current account. Second, fiscal and monetary policies should be designed with sensitivity to regime-dependent and asymmetric effects; for example, short-term measures such as targeted subsidies or interest rate adjustments can complement long-term structural policies aimed at improving trade balances. Third, promoting domestic savings, enhancing investment capacity, and attracting foreign direct investment are critical to building resilience against external shocks. Finally, policymakers must recognize that the effects of oil price and exchange rate changes differ across countries, volatility regimes, and over time, necessitating tailored and flexible policy responses that reflect these heterogeneities.

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