

Impact of Ringgit Appreciation on Import Prices and Inflation

Introduction

The ringgit and other Asian currencies have been on a broad appreciating trend since early 2009 amid the nascent global economic recovery and improvements in the global financial markets. As market sentiments and risk appetites improved against a background of increased global liquidity, portfolio inflows to Asia rose significantly and regional currencies appreciated between 6.2% and 44.4% relative to the US dollar between March 2009 and July 2011 (Chart 1). At the same time, the fast pace of the economic recovery in the region over the course of 2010 and 2011 coincided with a gradual build-up of inflationary pressures following sustained increases in global commodity prices and rising domestic demand amid global supply disruptions. Given the heightened inflationary risks during the period, a pertinent issue is whether the currency appreciation would dampen some of the effects of the global cost-push factors on inflation by lowering the local-currency price of imports.

Chart 1

Performance of Regional Currencies Against US Dollar (March 2009 - July 2011)



Source: Bank Negara Malaysia

The relationship between the exchange rate and inflation is highly complex and it involves interactions through a number of transmission channels in the economy, including trade, domestic demand, expectations of households and businesses, financial markets, liquidity and monetary conditions, and the costs of production. This article discusses the role of exchange rate appreciation in containing the costs of imported inputs and final consumption goods and consequently, consumer prices. In summary, consistent with the findings in the literature, the pass-through from ringgit appreciation to import prices was found to be partial and incomplete. An even smaller pass-through to consumer prices was also observed. Given the weak relationship between the exchange rate and inflation, care must be exercised on the role that is attributed to the exchange rate in mitigating cost-push inflation from abroad.

The transmission of exchange rate changes to consumer prices

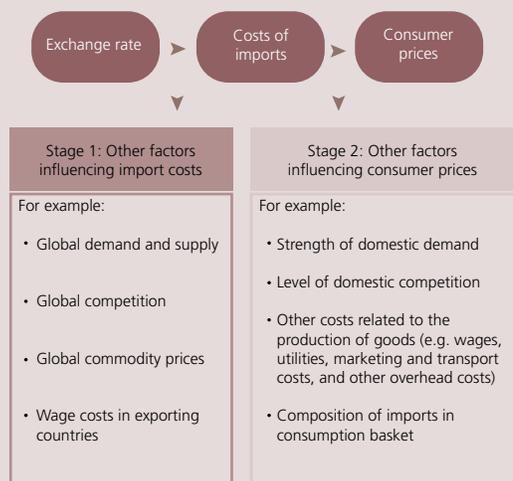
In general, exchange rate movements may have an effect on inflation through imports. The impact of exchange rate movements on consumer prices can be observed in two stages, namely from the exchange rate impact to import prices, and subsequently from import prices to consumer prices. At the first stage, changes in the exchange rate may be reflected through import prices that are paid by importers¹. In the absence of other influences, the hypothesis is that a ringgit appreciation against the US dollar would lower import costs in ringgit terms for Malaysian importers, assuming US dollar was

¹ These may include imports of raw materials, intermediate goods and final goods.

used for trade settlement. While the exchange rate could be an important consideration, there are other factors that could influence the prices of imports. These include global demand and supply conditions, global competition, prices of global commodities and production costs in the exporting countries.

Chart 2

Transmission of Exchange Rate Changes to Consumer Prices through the Cost of Production Channel



Source: Bank Negara Malaysia

At the second stage, the changes in import prices would feed into the overall cost of domestic production and eventually determine the final prices paid by consumers. The degree of pass-through from import prices to consumer prices depends essentially on the share of imported inputs and goods in overall production and distribution. In general, the smaller the proportion of imported inputs and goods into overall production and distribution, the smaller the impact on consumer prices. Beyond cost considerations, factors such as the strength of domestic demand and the extent of market competition could also influence the decision by firms to pass-on cost savings from cheaper imported prices.

The transmission of exchange rate changes to consumer prices in Malaysia is partial and incomplete

For Malaysia, the impact of exchange rate changes on import prices and subsequently on consumer prices was estimated using monthly observations from July 2005 to mid-2011². Our estimation suggests that exchange rate movements are statistically significant in influencing import prices³. A 10% Nominal Effective Exchange Rate⁴ (NEER) appreciation lowers import prices by between 1-3% within four months. This suggests that while ringgit appreciation can lower import prices, the degree of pass-through is relatively smaller than the magnitude of ringgit appreciation. The result also indicates that

² The model is developed on the basis that the effect of exchange rate movements on consumer prices is transmitted in two stages. At the first stage, import prices are determined by the costs of production in the exporting country, global demand conditions and the nominal effective exchange rates (NEER), in which the degree of exchange rate pass-through to import prices is given by the NEER coefficient. At the second stage, consumer prices are determined by import prices, the output gap and lagged inflation. The import price coefficient would reflect the degree of pass-through to consumer prices.

³ Imported goods are assumed to go through local production and distribution channels once they arrive in Malaysia. As a small economy, Malaysian importers are assumed to be price-takers; hence all imports are priced in foreign currency. This is not an extreme assumption as the bulk of our imports are denominated in USD, EUR and JPY in 2011.

⁴ NEER is the weighted average of home country's currency against the currencies of major trading partners.

global demand is a more important factor in influencing import prices in Malaysia, whereby a 10% increase in global demand would increase import prices by 1-5%. At the second stage, the impact of changes in import prices on consumer prices was found to be even lower. A 10% decrease in import prices would lower domestic inflation by 0.5% within 6 months. This estimate also suggests that domestic demand conditions are more important in influencing consumer prices. Combining the results for stage 1 and stage 2, the research outcome suggests that a 10% appreciation of the ringgit results in a fall of only 0.05-0.15% in consumer prices.

The finding that the impact of an exchange rate appreciation is greater on import prices than on consumer prices suggests that although ringgit appreciation can lower import prices, producers may not necessarily pass on these savings completely to consumers. An important caveat to this finding, however, is that the evidence of low pass-through reflects the average outcome across a range of different episodes. The degree of pass-through may vary across time in response to different shocks. For example, an extreme appreciation of the ringgit could erode export competitiveness, which in turn could reduce incomes and weaken domestic demand.

The findings from Malaysian data are broadly consistent with similar studies conducted elsewhere. Exchange rate appreciations are found to only partially reduce import costs, whereas the pass-through is even lower from import costs to consumer prices. Campa and Goldberg (2006) found that the consumer price index is less sensitive to exchange rate changes than import prices. For Organisation for Economic Co-operation and Development (OECD) countries, in the long run (about four quarters), a 10% depreciation of local currency leads to an average of 6% increase in import prices and 2% increase in consumer prices. For the United States, a 10% depreciation in the US dollar leads to an average of 4% increase in import prices and 0.1% increase in consumer prices. Ca'Zorzi, Hahn and Sanchez (2007) also found that the exchange rate pass-through to be lower on consumer prices than import prices. For selected Asian countries, the study found that exchange rate pass-through to import prices was between 0.12% and 0.78% within four quarters, while the pass-through from exchange rate to consumer prices was between 0.01% and 0.19%, also within four quarters. The paper also found that countries with low average inflation experienced lower levels of exchange rate pass-through than countries with higher average inflation. Mihaljek and Klau (2008) estimated a sample of 14 emerging economies and found that exchange rate pass-through to inflation was below 0.3% and that there has been a general declining trend across emerging economies since the 1980s⁵. Importantly, Mihaljek and Klau also found that there is an asymmetric effect of the impact of exchange rate movements on inflation. Exchange rate depreciations seems to have a significant and stronger effect on inflation than appreciations in Korea, Malaysia, Mexico, Poland and Turkey. Conversely, appreciations seems to have a significant and stronger effect on inflation in Philippines, Brazil and Hungary. Other countries in their sample⁶ however, do not display the presence of asymmetric effects of exchange rate movements on inflation.

Price rigidity and local currency pricing as sources of partial and incomplete exchange rate pass-through

There are several explanations for the partial and incomplete pass-through from exchange rate changes to consumer prices. These can be broadly categorised as rigidity in price adjustments, increasingly globalised production chain, the importance of distribution costs, firms changing profit margins, local currency pricing, magnitude of exchange rate changes and country-specific factors.

1. **Rigidity in price adjustments.** It is often observed that firms do not instantaneously adjust prices in response to changes in business conditions. More importantly, price adjustments are often seen to be asymmetric between price increases and price decreases, with less likelihood for firms to revise prices downward. Consequently, while an exchange rate appreciation may lower import costs and the overall cost of productions, these costs savings are not fully translated into lower prices

⁵ The decline in exchange rate pass-through to inflation across emerging economies since 1980 coincides with lower levels and volatility of domestic inflation and foreign prices.

⁶ Other countries refer to Thailand, South Africa, Chile, Peru and Czech Republic.

for consumers. There were various explanations for such observations, including the existence of pre-existing contracts to ensure stable prices, the high cost of frequently adjusting prices and the association of prices as a signal for quality and exclusivity.

2. **Increasingly globalised production chain.** There are now more goods being produced through multiple stages of production that are located in different countries. As a result, the final goods being produced embody input costs in various currencies that do not necessarily move in tandem. This means that a fall in cost from a bilateral appreciation against one particular currency may be offset by a rise in cost from a bilateral depreciation against another currency. As a result, the net impact of exchange rate movements on final goods' prices was limited.
3. **Distribution costs.** For some goods that are imported from abroad, the production costs may include a proportionately larger domestic cost component such as transportation, marketing, wholesaling and retailing. For example, a study by Feenstra (1998) illustrated that a Barbie doll shipped from PR China to the United States cost about USD2, where it sold for about USD10⁷. The relatively insignificant cost of imports in the overall cost structure reduces the price sensitivity to the impact of exchange rate changes.
4. **Firms changing profit margins.** In practice, many goods and services are traded in imperfectly competitive markets that allow producers to charge prices based on margins over costs. Producers may respond to exchange rate fluctuations by adjusting their profit margins instead of prices, which reduces the sensitivity of consumer prices to exchange rate changes.
5. **Local currency pricing.** International business strategies may also result in producers absorbing the impact of exchange rate variations. Cross-border product differentiations, market segmentations and competition have led many producers to price products based on the specific conditions in each market. This would reduce import and consumer price sensitivity to exchange rate changes.
6. **Magnitude of exchange rate changes.** Large changes in exchange rates may have more significant impact on pass-through to import prices and consumer prices than smaller exchange rate changes.
7. **Malaysia-specific factors.** The low pass-through could be attributed to the inherent characteristics of the domestic Consumer Price Index (CPI), which is compiled based on the expenditure pattern of the average household in Malaysia.
 - a. *CPI captures many goods that are not traded internationally.* Many items that are captured in the computation of the CPI are not traded internationally. For example, services like car wash, haircuts and other specialised services are determined entirely by domestic conditions and do not necessarily respond directly to external developments. While there are some imported inputs in the services category, the contribution to the overall cost of production is relatively small. Services components account for about 47.5% of the CPI basket in Malaysia.
 - b. *Limited direct import of final goods.* For Malaysia, direct imports of final goods only accounts for 15.9% of the overall CPI basket. Hence, the direct impact of exchange rate changes on consumer prices is often not pervasive and is limited to selected items. Prices for some of these imported items, such as petroleum products, were also subject to the Government's administered price mechanism, which would further limit the overall sensitivity of prices to

⁷ Source: "The Exchange Rate–Consumer Price Puzzle", FRBSF Economic Letter, 2006

exchange rate movements. While the gradual removal of price controls and Government subsidies on these products could potentially increase the degree of pass-through, the actual impact should not be overstated given that even countries with few price controls have low exchange rate pass-through.

Policy Implications and Conclusion

Empirical evidence suggests that there is only a relatively small reduction in import costs as the ringgit appreciates. Producers, in turn, do not entirely pass on these cost savings to consumers. This insensitivity of the CPI to exchange rate movements implies a rather limited role for the exchange rate in mitigating the impact of imported inflation. Although the finding is consistent with other studies in the literature, an important qualifier is that the period of coverage corresponds to the environment of relatively stable inflation and orderly ringgit appreciation. As noted, the magnitude of the exchange rate changes is important in terms of determining its impact on import prices and consumer prices. An extremely strong currency appreciation could erode competitiveness, which in turn reduces incomes and weakens domestic demand. Conversely, a very strong depreciation could exert upward inflationary pressure on consumer prices as rising import prices become unbearable for importers, who would in turn pass on this rise in import cost to consumers. In this regard, the importance of orderly two-way adjustment in the currency should remain an important policy objective for the central bank in a small open economy.