

## Revisiting Exchange Rate Pass-Through to Inflation in Malaysia

### Introduction

In 2022, the ringgit depreciated by 5.4% against the US dollar.<sup>32</sup> Peak to trough, the ringgit depreciated by 12.2% over January to 4 November (when the ringgit depreciated from RM4.1665 at the end of 2021 to a low of RM4.7477 against the US dollar). With costs such as global commodity prices still elevated, there is particular interest on the impact of the recent depreciation episode on inflation in Malaysia. During this period, the impact of the exchange rate was not offset by other mitigating cost factors such as global commodity prices. Thus, there is belief that the exchange rate depreciation could be more than fully passed on to consumers, leading to higher headline inflation, as measured by the annual growth in the Consumer Price Index (CPI), unlike previous depreciation episodes experienced by the country.<sup>33, 34</sup>

The movement of the ringgit against the US dollar during the year largely reflected the strength of the US dollar following aggressive monetary policy tightening by the Federal Reserve to contain persistently high inflation in the US. The impact of the strong US dollar was evident globally with most other currencies also on depreciating trends albeit to varying degrees. In contrast to the performance against the US dollar, the ringgit strengthened against several other major and regional currencies. Consequently, the import-weighted nominal effective exchange rate (NEERM), which measures the ringgit's performance against a basket of currencies of key import partners, appreciated by 1.0%.<sup>35</sup>

In assessing the degree of exchange rate pass-through (ERPT) to inflation, a highly pertinent question is the choice between using a single bilateral exchange rate, like the RM versus the US dollar, or an average of a range of bilateral exchange rates between the RM and key trading partner currencies, like the NEERM. With trade largely invoiced in US dollar regardless of the origin or destination of trade flows (a phenomenon known as dominant currency pricing, as proposed by Gopinath et al. (2020)),<sup>36</sup> the bilateral RM/USD exchange rate may seem more relevant for understanding ERPT especially in the near term when import prices are relatively sticky (International Monetary Fund (IMF), 2019).<sup>37</sup> This is particularly true for internationally traded commodities such as crude oil and cereals, which are priced in US dollar.<sup>38</sup> However, the bilateral exchange rate may be less relevant over the medium term,<sup>39</sup> as prices in the invoice currency adjust. As an example, with currency depreciation under dominant currency pricing, exporters<sup>40</sup> may choose to reduce prices in the invoice currency beyond the short term. Exporters also tend to set prices according to global demand, rather than country-specific demand (Crookes et al., 2022). Here, the NEERM may be more relevant as the movement of all trading partners' currencies against the US dollar becomes important (IMF, 2019). It thus, more closely reflects the consequent adjustments in relative prices that can be expected to affect inflation (Caselli and Roitman, 2019), amid the attendant changes in import prices, domestic demand, and import intensity patterns.

Against such a backdrop, this article first presents an overview of the channels of ERPT to CPI inflation. It then provides estimates of ERPT associated with the RM/USD exchange rate since it may have more economic

<sup>32</sup> Calculated as the change between end-year exchange rates. Note that all bilateral exchange rate data in this draft are sourced from Bloomberg.

<sup>33</sup> The annual growth in the CPI is referred to as CPI inflation, henceforth, in this article.

<sup>34</sup> For example, in 2015, the ringgit depreciated by 21.5% over January to 29 September (when the ringgit reached a low of 4.4570 against the US dollar) and 18.6% against the US dollar for the year as a whole (change between end-year exchange rates). Notwithstanding the weakening of the ringgit, headline inflation, as measured by CPI inflation, remained relatively low at 2.1% with mitigating effects from a significant decline in global commodity prices.

<sup>35</sup> Calculated as the change between end-year exchange rates. This measure of the nominal effective exchange rate (NEER) differs from the NEER measure elsewhere in "Economic, Monetary and Financial Developments in 2022", which refers to the value of the ringgit against a total trade-weighted basket of Malaysia's major trading partners' currencies. Differences may arise between the two measures due to variations between import weights and total trade weights.

<sup>36</sup> For Malaysia, 83% of exports and 79% of imports were invoiced in US dollar in 2019 (Boz et al., 2020).

<sup>37</sup> Because US dollar import prices are largely unchanged, ceteris paribus, a depreciation against the US dollar increases import prices in the local currency, making it a more important driver than bilateral exchange rates in ERPT to import prices in local currency within a year of a depreciation shock (that is, the US dollar broadly appreciates) (IMF, 2019).

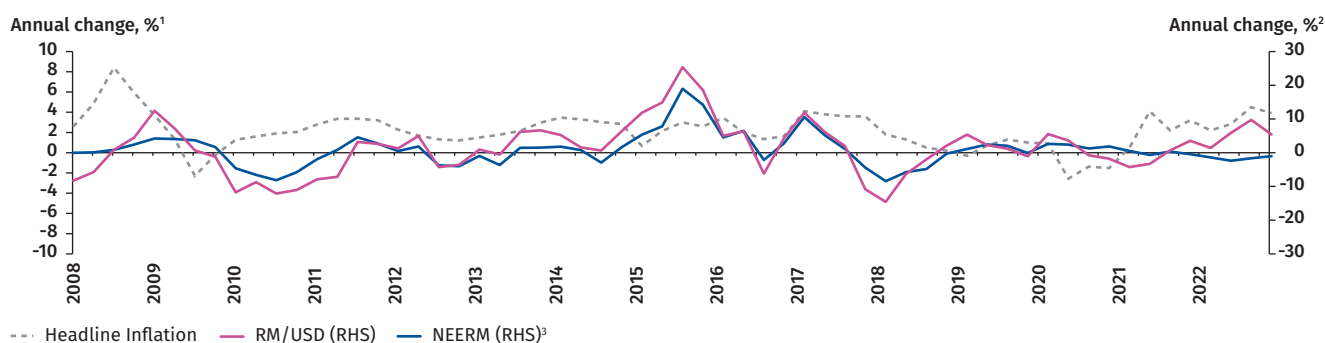
<sup>38</sup> See Bank Negara Malaysia (2022) for a discussion on the transmission of global commodity prices to inflation in Malaysia.

<sup>39</sup> Up to three years after the depreciation shock (that is, the US dollar broadly appreciates).

<sup>40</sup> Exporters refer to foreign producers from the perspective of the local economy.

relevance in the near term. This is done for aggregate import price inflation and CPI inflation, as well as for sectoral CPI inflation, highlighting segments that are particularly sensitive to exchange rate movements. Finally, it offers insights on the potential nature of ERPT in the context of the current environment. That is, whether it is likely to be higher than average, taking into account overall inflation dynamics, including the influence of administered prices, and firms' price-setting behaviour.

**Chart 1: Exchange Rate and Inflation**



<sup>1</sup> The headline inflation annual change refers to the annual growth in the quarterly average.

<sup>2</sup> The exchange rate annual change refers to the annual growth in the quarterly end-rates.

<sup>3</sup> The nominal effective exchange rate against import partners (NEERM) is calculated based on the weighted average of the bilateral exchange rate against Malaysia's top 15 import partners. A positive figure indicates a depreciation in the ringgit against Malaysia's main import partners relative to the year before.

Source: Department of Statistics, Malaysia, Bloomberg and Bank Negara Malaysia

## Transmission channels of exchange rate movements to inflation

Chart 2 provides an overview of the ERPT channels. The most direct channel of ERPT to CPI inflation is through import prices. The extent of pass-through of exchange rate depreciation to import prices in the short term (when trade contracts are relatively fixed) depends on the currency in which import prices are set – high pass-through with dominant currency pricing and producer currency pricing (prices set in the exporter country currency) and low with local currency pricing (prices set in the destination country currency). The differences in ERPT to import prices across the various types of currency pricing, whether dominant currency pricing, producer currency pricing or local currency pricing narrow over the longer term (Crookes et al., 2022) as ERPT would also partly depend on the subsequent response of other factors to the exchange rate shock. These other factors include exporters' pricing behaviour and contract revisions. They are typically influenced by exporters' market power, production costs and global demand conditions. Under perfectly competitive markets, ERPT to import prices tends to be complete. However, empirical evidence supports the occurrence of relatively high but incomplete pass-through to import prices. For example, Campa and Goldberg (2005) find that the change in the commodity composition of imports can influence the pass-through to import prices – ERPT is higher for energy and raw material imports than manufactured products and food products.

Changes in import prices would feed through to CPI inflation depending on the share of import content in private consumption. This includes directly through imported final consumption goods, which may still incur local distribution and transportation costs, and indirectly through imported intermediate inputs which affect firm production costs. Based on input-output tables, Malaysia's share of import content in private consumption as the sum of these two components amounted to 26% in 2020 (27% in 2019; 31% in 2015) (Chart 3).<sup>41, 42</sup> This appears

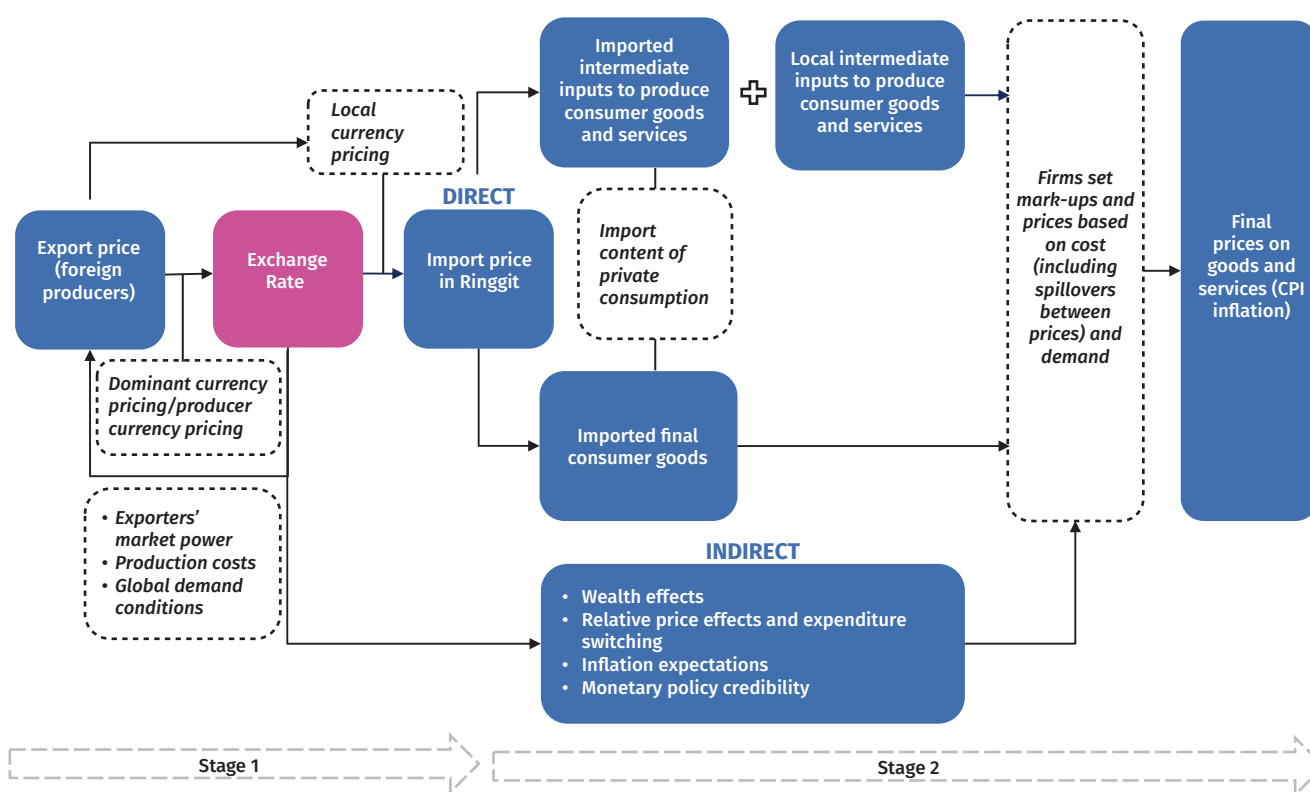
<sup>41</sup> Source: Department of Statistics Malaysia (2018, 2022) and Bank Negara Malaysia estimates based on the methodology to isolate the import content in final demand components in Kranendonk and Verbruggen (2005, 2008).

<sup>42</sup> Strictly speaking, the full import share of consumption would also include the share of capital (that is, machinery and equipment used in domestic production) which is imported. However, due to data limitations in input-output tables generally, this is excluded. Further, the concept of imported content of consumption depicted in this article is consistent with other studies on ERPT (see for example, Carrière-Swallow et al. (2021) and Gopinath (2015)).

to be slightly above average when compared to emerging market economies (based on Carrière-Swallow et al. (2021) which showed regional averages of 15 – 25%; and close to 30% on average for advanced economies). However, this is not unexpected given Malaysia is a relatively open, upper-middle income economy.<sup>43</sup>

The degree and timing of pass-through of higher production costs would also depend on the impact of the higher exchange rate on profit margins, balanced against the costs of price changes, firms' market power, and prevailing demand conditions. The ERPT to CPI inflation will also work through indirect effects over the longer term (see for example, Rincón-Castro and Rodríguez-Niño (2018), and Savoie-Chabot and Khan (2015)). The indirect effects include changes in the composition and level of domestic demand due to expenditure switching (towards domestically produced goods)<sup>44</sup> and wealth effects (depending on how balance sheets are affected by the exchange rate depreciation). In addition, if the exchange rate depreciation is prolonged, wage and price-setting behaviour may change due to higher long-term inflation expectations. Consequently, a key factor in ERPT is inflation expectations. Whether inflation expectations continue to be well-anchored, in turn, depends on the credibility of monetary policy. More stable inflation expectations and lower forecast disagreement among professional forecasters are associated with lower ERPT to CPI inflation (Carrière-Swallow et al., 2021). Owing to such dynamics, it is not necessarily the case that as the size of sectors and number of items rise in their imported content, or as they become more tradable, they would linearly experience higher ERPT to inflation; or that ERPT is constant across time.<sup>45, 46</sup>

Chart 2: Overview of Transmission Channels of Exchange Rate Shocks to Inflation



Source: Bank Negara Malaysia staff construction nominally based on Forbes (2015) and Rincón-Castro and Rodríguez-Niño (2018)

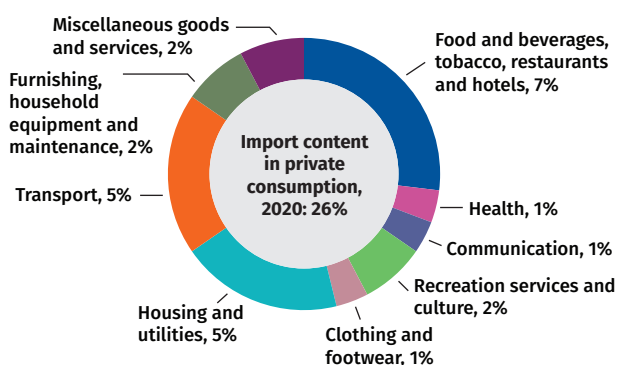
<sup>43</sup> For example, Singapore, a highly open and high-income country, had an import content in private consumption of 42% in 2019. Source: Bank Negara Malaysia estimates based on Singapore Supply, Use and Input-Output Tables 2019, available at <https://www.singstat.gov.sg/economy/io2019>. Accessed 25 January 2023.

<sup>44</sup> The availability of alternative local products would facilitate this expenditure switching. The net effect to CPI inflation would depend on the impact to imported content in private consumption, as well as pressures on domestic resources to meet production and demand.

<sup>45</sup> This is notwithstanding clear links for certain items, for example, retail fuel prices under the automatic pricing mechanism (APM) are closely linked to movements in global oil prices and the RM/USD exchange rate when not subject to price ceilings. The APM was implemented in December 2014. Fuel prices were floated over December 2014 – 2Q 2018, and from January 2020 – February 2021.

<sup>46</sup> See Forbes (2015) for a discussion on these three aspects of misunderstanding of ERPT in the context of the United Kingdom.

Chart 3: Import Content of Consumption



Note: Breakdown figures are only an approximation based on approximate mapping of the commodity classification in the input-output tables to consumption by purpose. The import content refers to imported intermediate inputs and final consumption goods. It excludes capital imports.

Source: Bank Negara Malaysia estimates based on Department of Statistics Malaysia (2022)

## Estimates of ERPT

The ERPT estimation comprises two stages. The first stage is the pass-through to import price inflation, and the second stage, which is ultimately the focus of ERPT analysis, is the pass-through to CPI inflation. The ERPTs from changes in the RM/USD exchange rate to import price inflation and CPI inflation were empirically estimated using quarterly data from 2006 to 2022.<sup>47</sup> In terms of the first stage of transmission (see “Direct” in Chart 2), for a 5% change in the RM/USD exchange rate, the immediate ERPT to import price inflation is about 0.8 percentage points in the current quarter (short run) and 2.1 percentage points over a year (long run).<sup>48, 49</sup> This means that about 40% of the exchange rate impact is translated to overall import prices after a year. This degree of pass-through to import price inflation is well within findings on average for both advanced and emerging market economies.<sup>50</sup> While dominant currency pricing would suggest a relatively high pass-through, the incomplete impact is influenced by other factors such as exporters’ pricing behaviour and contract revisions, driven by market structure of products, cost and demand, as mentioned earlier in this article.

The second stage of transmission, the ERPT to CPI inflation is, as expected, lower compared to import price inflation, partly reflecting the relatively moderate share of import content in consumption. A 5% change in the RM/USD exchange rate is associated with approximately 0.1 percentage points change in core inflation in the next quarter (short-run) and 0.2 percentage points over a year (long run).<sup>51, 52</sup> This is less than a full pass-through

<sup>47</sup> The analysis is based on a New Keynesian Phillips Curve (NKPC) type estimating equation, with controls for lagged inflation, domestic economic slack, global commodity price inflation, and import partners’ inflation (see for example Gordon (2013)).

<sup>48</sup> The short-run impact is similar to findings in Bank Negara Malaysia (2015) using the Producer Price Index (PPI) for imported raw and intermediate inputs.

<sup>49</sup> Empirical analysis based on depreciation episodes in the RM/USD exchange rate did not yield indications of asymmetric ERPT to import price inflation. Meanwhile, sub-sample analysis suggests pass-through has increased over time, whereby for the subsample of 2015Q1-2022Q2, ERPT to import price inflation is closer to 2.0 percentage points and 4.0 percentage points respectively.

<sup>50</sup> For example, Campa and Goldberg (2005), focusing on OECD countries, estimate that on average import prices in local currencies reflect 46% of exchange rate fluctuations in the short run, and 65% over the long run. Carrière-Swallow et al. (2021) find somewhat higher pass-through of 50% (75%) in the short run and about 80% (100%) in the long run for advanced economies (emerging market economies) but view their results as in line with Campa and Goldberg (2005), given the confidence intervals surrounding their estimations.

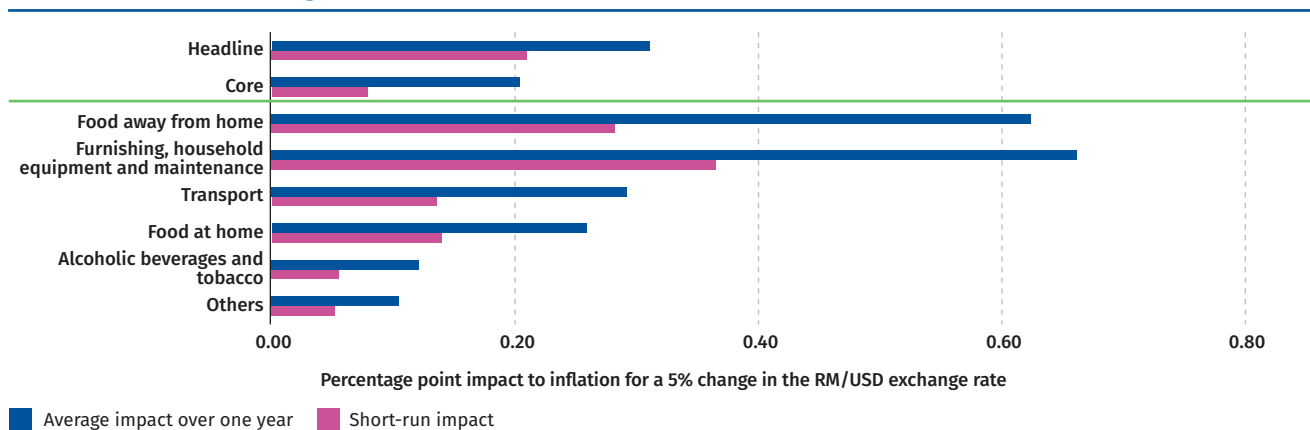
<sup>51</sup> Results are fairly similar for ERPT to overall CPI inflation at about 0.2 percentage points and 0.3 percentage points in the short run and long run respectively.

<sup>52</sup> The ERPT to CPI inflation embeds all the stages along the supply chain through which intermediate imported inputs may affect final consumer prices. For example, the ERPT to food away from home inflation would subsume the impact of higher imported poultry feed cost via higher fresh chicken prices. See Bank Negara Malaysia (2022) for related discussion on these interlinkages in the context of the transmission channels from global commodity prices.

of import price inflation,<sup>53</sup> and broadly consistent with findings on emerging market economies' ERPT to CPI inflation (Carrière-Swallow et al., 2021; Ha, Stocker, and Yilmazkuday, 2019).<sup>54</sup>

These results, nevertheless, mainly capture average effects and may not reflect key undercurrents such as changes in ERPT over time, heterogeneous effects across CPI items (see Chart 4), and potential averaging out of effects as the exchange rate appreciates and depreciates over time. It is observed that food inflation is more sensitive to exchange rate movements, and this sensitivity has increased over time. This potentially reflects, to some extent, the lower self-sufficiency and higher import dependency ratios for selected items that cut across meat and dairy, fish and seafood, fruits, and vegetables.<sup>55</sup> There is also indication that ERPT tends to be higher during depreciation episodes<sup>56</sup> – for example, for a 5% depreciation in the RM/USD exchange rate, the one-year ERPT to core inflation rose to 0.4 percentage points (versus 0.2 percentage points on average), though the short-run impact is relatively unchanged.<sup>57,58</sup> In sum, ERPT to overall CPI inflation has increased marginally over time,<sup>59</sup> reflecting differentiated impacts across relative prices, and tends to be higher during depreciation episodes. Nevertheless, it remains less than complete.

**Chart 4: Selected CPI Categories and ERPT**



Source: Bank Negara Malaysia staff estimates based on quarterly data over 2006Q1-2022Q4.

<sup>53</sup> A proxy of full pass-through to CPI inflation would be (import price inflation ERPT) x (import content of consumption) which yields 0.2 percentage points and 0.5 percentage points over the short run and one year respectively. For the sub-sample of 2015Q1-2022Q4, the indicative full pass-through to CPI inflation is estimated to be about 0.5 percentage points and 1.0 percentage points in the short run and long run respectively.

<sup>54</sup> While not explicitly discussed in this article, ERPT analysis carried out using the NEERM yielded similar results for import price inflation and core inflation. This is not unexpected given the strong correlation between the NEERM and the RM/USD exchange rate over the sample period of 0.85.

<sup>55</sup> Specific items include beef, mutton, fresh milk, cuttlefish, crab, coconut, mango, and round cabbage.

<sup>56</sup> This likely reflects downward price rigidity. For example, a one-off firm survey that the Bank collaborated on in early 2021 to better understand price setting behaviour suggests that when costs increase, prices were more likely to increase but when costs decline, prices were less likely to decline.

<sup>57</sup> The asymmetry is less discernible statistically in the case of NEERM depreciation in the sample under consideration in this article, which could be due to less sharp depreciation episodes in the NEERM. However, Chart 5 in Bank Negara Malaysia (2015) provides a visual depiction of the asymmetric relationship between the NEERM and inflation.

<sup>58</sup> Asymmetric ERPT has been found in the literature for both advanced and emerging market economies, whereby depreciations may generate larger reactions than appreciations. See, for example, Caselli and Roitman (2019), and Ha, Stocker, and Yilmazkuday (2019).

<sup>59</sup> Sub-sample analysis for 2015Q1-2022Q4 suggests ERPT to overall CPI inflation of about 0.3 percentage points and 0.5 percentage points in the short run and long run respectively.

## Current context: Extent of ERPT contained by administered prices and overall stabilising cost pressures

Given the above, the recent RM/USD exchange rate depreciation does have some impact on CPI inflation. This includes increases in salient prices<sup>60</sup> namely for food-related items which affect Malaysia's inflation through spillovers from exchange rate-sensitive food-related goods to food-related services, via the input cost channel. For example, higher prices of food goods, either directly or indirectly affected by the exchange rate, would raise the production cost for food service providers. This in turn would lead to higher selling prices. This propagation channel could be exacerbated when demand conditions are improving. In 2022, price pressures were particularly evident in food-related goods and services, which contributed to around half of overall headline inflation. Rising food inflation heightens cost-of-living concerns, as food items make up a larger share of the consumption basket for vulnerable groups. This in turn could shift inflation expectations and lead to higher wage demands which would then potentially set off spillovers to the prices of other goods and services.<sup>61</sup>

It is important to highlight that domestic price controls and subsidies have partly dampened the overall sensitivity of prices to exchange rate movements, especially in terms of retail fuel prices. As salient prices, these could have had a knock on to other components in the CPI basket including services inflation, if impacted by exchange rate movements. Further, industrial engagements<sup>62</sup> suggest that while the depreciation of the exchange rate was a prominent factor for cost pressures in late 2022 (specifically in September and October 2022), pass-through was partial. More generally, firms have resorted to several initiatives to manage costs and price increases,<sup>63</sup> including adjusting product design, negotiations with clients and suppliers, and increasing cost efficiency. Going forward, firms' pricing behaviour will be shaped by unfolding developments surrounding both the demand and cost outlook. For the latter, the recent weakening of the US dollar, easing supply chain constraints and moderating global commodity prices would contribute towards normalisation of cost pressures. Industrial engagements in early 2023 have indicated that there was less concern on the exchange rate compared to late 2022. The exchange rate was not seen as a predominant cost factor in firms' pricing outlook. This observation was evident in both the consumer and industrial-oriented segments. Nevertheless, as conditions continue to evolve with regard to U.S. monetary policy tightening, affecting exchange rate developments, the Bank remains vigilant on how firms' pricing behaviour may change given cost and demand conditions.

## Conclusion

The less than complete ERPT to CPI inflation finding for Malaysia based on empirical analysis (the lack of one to one for import price inflation, given imported content), suggests an overall moderate, rather than excessive, impact from the ringgit depreciation against the US dollar. This is generally in line with cross-country findings on ERPT. The implementation of administered prices and relatively stable firm pricing behaviour in Malaysia, also tend to limit the extent of ERPT. Nevertheless, the greater sensitivity of inflation to exchange rate depreciation for some CPI components, particularly food-related items, warrants attention. This is given the potential impact of these salient prices in propagating spillovers to other prices as well as inflation expectations, especially following improved demand conditions that facilitate the passing on of elevated costs. To the extent that cost shocks, including exchange rate shocks, have a transitory effect on CPI inflation, this allows the Bank to look through the shocks. However, when underlying inflation pressures become more persistent, this may warrant a monetary policy reaction. Consequently, it remains vital that the overall thrust of

<sup>60</sup> Salient price changes are defined as price changes of items that are more important for consumers, and could potentially have a larger bearing on the overall price trend (Bank for International Settlements (BIS), 2022). This could be due to their pervasive role in production chains (for example, energy prices) or their weight in consumption baskets (for example, food).

<sup>61</sup> BIS (2022) finds, for the US, that food and beverages, and gasoline, are relatively strong exporters of price spillovers to other goods and services. For food and beverages, the spillovers, during a low inflation regime are particularly apparent for food services. However, spillovers are more strongly dispersed across sectors in a high inflation regime, amid shifting inflation expectations and wage-price feedback.

<sup>62</sup> Using the Bank's Regional Economic Surveillance programme.

<sup>63</sup> This is notwithstanding sectoral price adjustments that have been undertaken throughout 2022 to address the general high-cost environment (for example, in the food and beverages sector) and to recoup lost sales during the pandemic (for example, in relation to recreation activities). Overall expected revenue and profit growth among small to mid-sized businesses have remained favourable across the four quarters of 2022 (VISTAGE-MIER, 2022).

monetary policy is pre-emptive in managing risks to both inflation and sustainable economic growth. Monetary policy remains one of the key tools in managing demand-driven inflation. Going forward, continued insights on firms' pricing behaviour regarding exchange rate movements, and more generally cost and demand conditions will be critical in understanding how imported inflation affects overall inflation dynamics.

## References

Bank Negara Malaysia. (2015). The Impact of Exchange Rate Depreciation on Inflation in Malaysia. *Bank Negara Malaysia Annual Report 2015*, pp. 70-78.

----- (2022). Global Commodity Price Trends, Inflation Dynamics, and Policy Responses: The Case of Malaysia. *Quarterly Bulletin 3Q 2022*, pp 25-34.

Bank for International Settlements. (2022). Inflation: A look under the hood. *Annual Economic Report*, June, pp. 41-71.

Campa, J. M., & Goldberg, L. S. (2005). Exchange Rate Pass-Through into Import Prices. *The Review of Economics and Statistics*, 87(4), 679-690.

Carrière-Swallow, Y., Gruss, B., Magud, N. E., & Valencia, F. (2021). Monetary Policy Credibility and Exchange Rate Pass-Through. *International Journal of Central Banking*, 17(3), 61-94.

Caselli, F. G., & Roitman, A. (2019). Nonlinear exchange-rate pass-through in emerging markets. *International Finance*, 22(3), 279-306.

Crookes, A., Zhang, A., Al Kasm, K., & Stoddart, P. (2022). *Exchange Rates and Trade*. A Report by Economic Insight for the Department for International Trade, United Kingdom. Retrieved from: <https://www.gov.uk/government/publications/research-on-the-relationship-between-exchange-rates-and-trade>

Department of Statistics, Malaysia. (2018). *Input-Output Tables Malaysia, 2015*. Department of Statistics, Malaysia.

----- (2022). *Input-Output Tables Malaysia, 2019 & 2020*. Department of Statistics, Malaysia.

Forbes, K. (2015, September 11). *Much ado about something important: How do exchange rate movements affect inflation?* 47th Money, Macro and Finance Research Group Annual Conference, Cardiff, UK. Retrieved from: <https://www.bankofengland.co.uk/speech/2015/much-ado-about-something-important-how-do-exchange-rate-movements-affect-inflation>

Gopinath, G. (2015). *The International Price System* (NBER Working Paper No. 21646). Cambridge, MA: National Bureau of Economic Research.

Gopinath, G., Boz, E., Casas, C., Díez, F. J., Gourinchas, P. O., & Plagborg-Møller, M. (2020). Dominant currency paradigm. *American Economic Review*, 110(3), 677-719.

Gordon, R. J. (2013). *The Phillips curve is alive and well: Inflation and the NAIRU during the slow recovery* (NBER Working Paper No. 19390). Cambridge, MA: National Bureau of Economic Research.

Ha, J., Stocker, M. M., & Yilmazkuday, H. (2019). *Inflation and Exchange Rate Pass-Through* (World Bank Policy Research Working Paper No. 8780). Washington, DC: World Bank.

International Monetary Fund (IMF). (2019). *Exchange Rate and External Adjustment*. External Sector Report: The Dynamics of External Adjustment, pp. 43-62.

Kranendonk, H.C., and Verbruggen, J.P. (2005). *How to Determine the Contributions of Domestic Demand and Exports to Economic Growth? Dutch Versus International Method* (CPB Memorandum No. 129). CPB Netherlands Bureau for Economic Policy Analysis.

----- (2008). *Decomposition of GDP Growth in Some European Countries and the United States, Different Methods Tell Different Stories* (CPB Memorandum No. 203). CPB Netherlands Bureau for Economic Policy Analysis.

Rincón-Castro, H., & Rodríguez-Niño, N. (2018). *Nonlinear state and shock dependence of exchange rate pass-through on prices* (BIS Working Papers No. 690). Bank for International Settlements.

Savoie-Chabot, L., & Khan, M. (2015). *Exchange Rate Pass-Through to Consumer Prices: Theory and Recent Evidence* (Bank of Canada Discussion Paper No. 2015-9). Bank of Canada.

VISTAGE-MIER (2022). *Q4 2022 CEO Confidence Index*. Retrieved from: <https://vistage.com.my/vistage-ceo-confidence-index/>