

An Anatomy of Inflation: Effects from the Prolonged Pandemic

Introduction

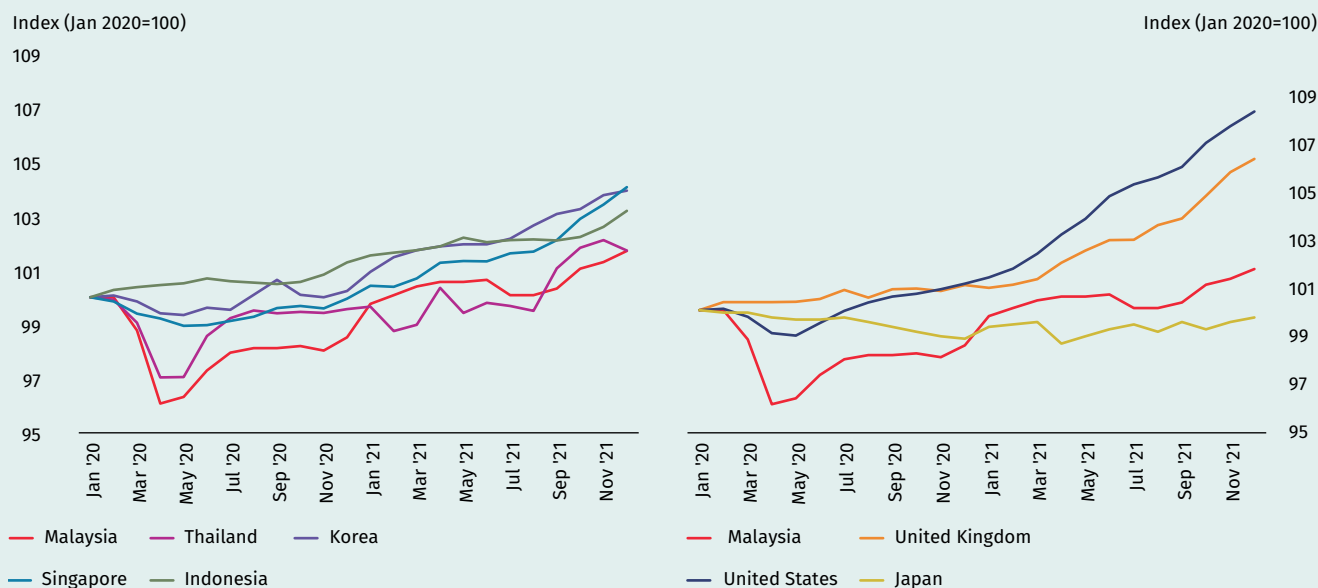
In Bank Negara Malaysia's 2Q 2020 Quarterly Bulletin¹, an interim assessment of how the COVID-19 pandemic would impact consumer inflation was outlined. Since then, the pandemic impact has not just persisted, but also evolved. Globally, the risks to consumer inflation have turned from being deflationary at the onset of the pandemic, to inflationary at present. With the uneven pace of the global economic recovery, the extent of inflationary pressures have also varied in magnitude across countries (Chart 1).

This article provides an update on the pandemic effects on consumer inflation in Malaysia. Given the highly uncertain outlook, it also contextualises the risks to consumer inflation from pandemic disruptions going forward by exploring potential country-specific factors. The findings suggest that some of the pandemic disruptions driving high consumer inflation in some other countries are either less severe or partly mitigated in Malaysia. Nonetheless, vigilance continues to be warranted. With some staple food segments more exposed to acute upward price pressures, concerns over rising cost of living remain prominent.

Breaking down the pandemic's impact on consumer inflation

In assessing the pandemic impact to consumer inflation, a framework adapted from Shapiro (2020a) is utilised.² Selected items in the Consumer Price Index (CPI) basket³ are placed into two mutually exclusive groups: COVID-

Chart 1: Evolution of Consumer Price Indices since January 2020



¹ This article is an extension to the Box Article on *COVID-19: Impact on Inflation*, published in Bank Negara Malaysia's Quarterly Bulletin 2Q 2020. The previous box article highlighted that Malaysia had experienced muted inflationary pressures since the onset of the pandemic. It also outlined the mechanisms by which the pandemic could affect inflation going forward, including changes in labour market conditions and competitive dynamics.

² A complete replication is not possible due to data limitations. In particular, while Shapiro (2020a) considered both price and quantity adjustments in the empirical exercise, this article only considered price adjustments, due to unavailability of granular and frequent personal consumption expenditure data. A framework based on difference-in-difference is used.

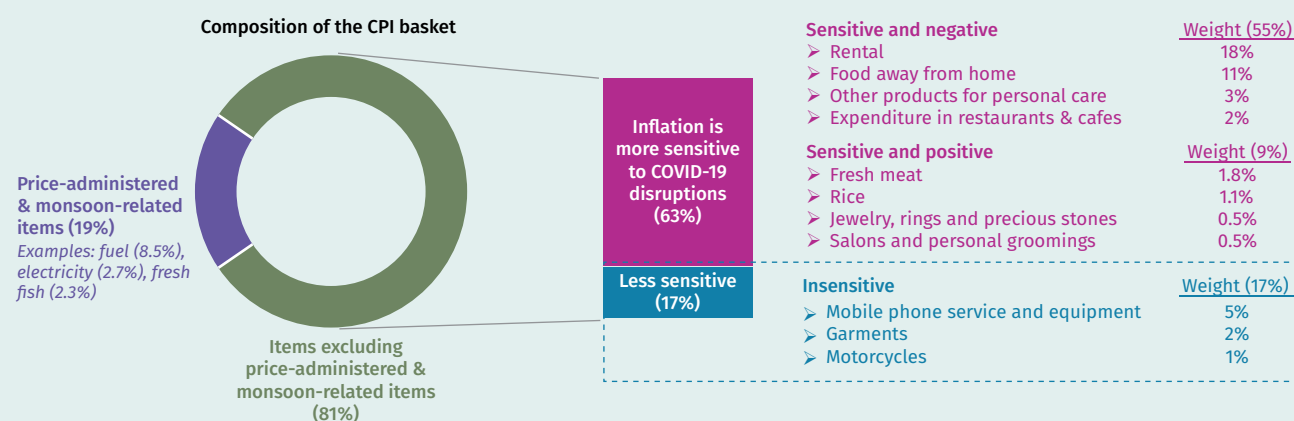
³ At the 4-digit level of the CPI basket.

sensitive⁴ or COVID-insensitive. This classification is designed to capture the direct effects of the pandemic. Namely, inflation for COVID-sensitive items would correspond more with disruptions from the pandemic, such as social distancing, supply chain constraints, or pent-up demand. As these disruptions intensify, so will the impact on consumer inflation. Conversely, as they fade away, the impact would likely moderate in tandem.

In contrast, COVID-insensitive items are less likely to be directly influenced by such factors. An implication of this is that if excessive and persistent price pressures have begun to spread in the less sensitive items, it could signal price pressures becoming more entrenched (Casselmann, 2021).

The classification is summarised in Chart 2. Sensitive categories comprise around 63% of expenditures in the CPI basket. A closer look shows that the pandemic disruptions can be either negative or positive to inflation on a net basis, reflecting the balance of demand and supply. For instance, items such as *rental* had exhibited reduced inflationary pressures relative to pre-pandemic trend at the onset of the pandemic outbreak, suggesting their greater sensitivity to demand conditions. This group of items is referred to as “sensitive and negative”. Conversely, some items had exhibited increased inflationary pressures relative to pre-pandemic trend at the onset of the pandemic outbreak, potentially reflecting their greater sensitivity to supply and cost pressures⁵ (e.g. disrupted supply chains and standard operating procedures (SOP) costs). These items are referred to as “sensitive and positive”. As the balance of demand and supply induced by the pandemic evolves, so likely would the inflation of these sensitive items.

Chart 2: CPI Items by Pandemic Sensitivity



Note: To ensure an assessment that is reflective of the pandemic shocks only, the classifications according to COVID-sensitivity exclude items that are price-administered (e.g. water bill, sewerage bill, gas, fuel, rail tickets). Furthermore, given exceptional monsoon season in 2021, directly affected items (i.e. fresh fish) have also been excluded. Together, these form the “Price-administered and monsoon-related” items (19% of the CPI basket). Numbers may not add up due to rounding.

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

As of 2021, the pandemic impact to overall consumer inflation has remained broadly contained, although a few segments have experienced acute upward pressures

Equipped with this framework, the evolution of the pandemic impact to inflation can be dissected (Chart 3). Firstly, the pandemic effects are most obvious in the “sensitive and positive” items, where prices tend to be more affected by cost pressures. At the onset of lockdown in early 2020, its higher inflation partly reflected supply-related pressures on selected food items. Namely, this included disruptions to production amid movement restriction measures, as well as some shortages in imported inputs, leading to higher prices of food

⁴ Sensitive categories are those that, following the outbreak of the COVID-19 pandemic, recorded price changes – either positive or negative – that are statistically significantly different from pre-pandemic trends. To ensure an assessment that is reflective of the pandemic shocks only, these classifications exclude items that are price-administered, and items whose prices have been largely affected by monsoon seasons. Furthermore, given that the classification was a data-driven empirical exercise on the 4-digit CPI basket in the periods following the initial pandemic outbreak, it is mainly focused on the shorter-term direct effects of the pandemic, and may miss out on longer-term structural changes arising from the pandemic.

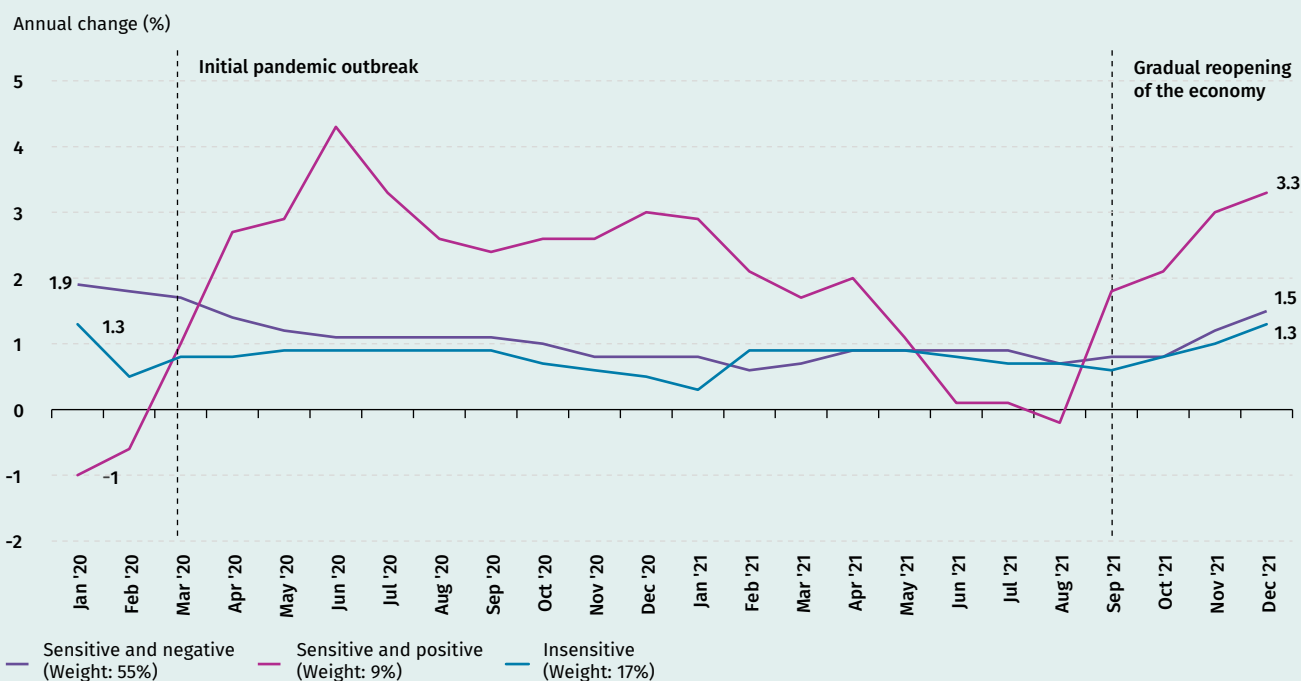
⁵ Another reason for why these items showed increased inflationary pressures at the onset of the pandemic is due to higher demand relative to supply. For instance, the pandemic led to higher global demand for safe assets such as gold, which spilled over into higher jewelry prices in Malaysia.

such as fresh chicken and eggs. These disruptions also occurred amid large-scale substitution in consumers' spending to food at home. With global supply disruptions re-intensifying towards the end of 2021, together with improving demand amid the economic reopening, its inflation has again risen in tandem.

Secondly, "sensitive and negative" inflation has been more slow-moving, broadly corresponding with domestic demand conditions. After declining for most of 2020, it has modestly increased towards the end of 2021 in line with the reopening of the economy, though remaining below the pre-pandemic level. An example of items in this category is rental inflation, which has remained subdued.⁶

Thirdly, with inflation for the "insensitive" group remaining relatively stable, there has been limited evidence of the spread of inflationary pressures beyond pandemic-related items.

Chart 3: Inflation by Pandemic Sensitivity



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

Ultimately, to get a better sense of how each series affects headline inflation, Charts 4 and 5 show the contributions of each category to headline inflation. Notwithstanding higher COVID-sensitive inflation at end-2021, its contribution to headline has thus far been limited (Chart 4), and somewhat close to pre-pandemic averages (Chart 5). Instead, most of the movements of headline inflation in 2021 were attributable to price-administered items, mainly reflecting the unwinding of policy measures introduced during the height of the pandemic (i.e. electricity rebates), and the base effect from fuel prices.⁷

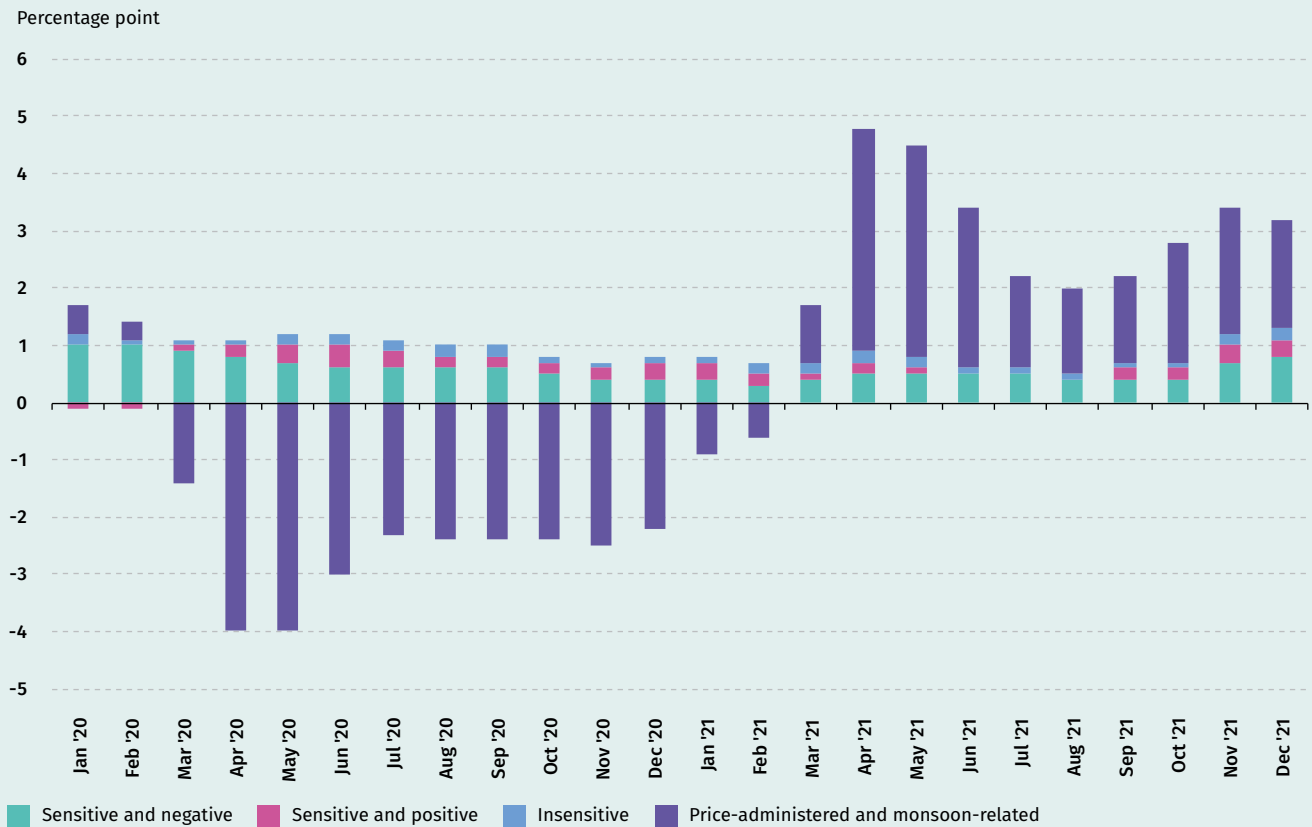
Explaining differences in consumer inflation across countries

The category-level analysis suggests that the pandemic effects to consumer inflation have so far been broadly contained, with most price pressures limited to a few segments. As demand continues to recover going forward, and with supply disruptions remaining acute, consumer prices could experience greater increases. But how high could consumer inflation be? Amid elevated uncertainty, emerging studies could provide some guidance.

⁶ Rental inflation in December 2021 is 0.6% (2011-2019: 2.5%).

⁷ The administered ceiling price of RON 95 has remained unchanged at RM2.05/litre from March 2021 to December 2021. The increase in fuel inflation was instead largely due to the low base in 2020.

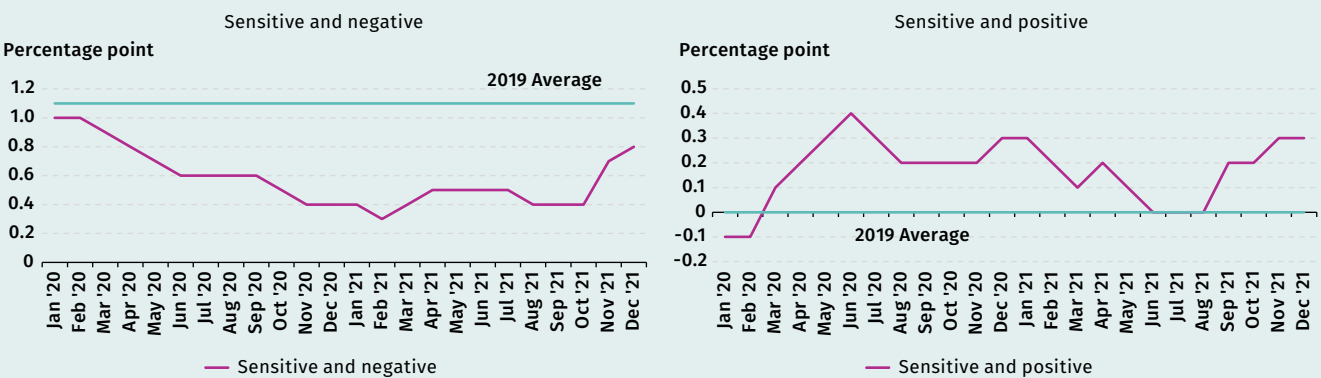
Chart 4: Contribution to Headline Inflation



Note: To ensure an assessment that is reflective of the pandemic shocks only, the classifications according to COVID-sensitivity exclude items that are price-administered. Furthermore, given exceptional monsoon season in 2021, directly affected items (i.e. fresh fish) have also been excluded. Together, these form the "Price-administered and monsoon-related" items (purple bar).

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

Chart 5: Contribution to Headline Inflation from COVID-sensitive Items



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

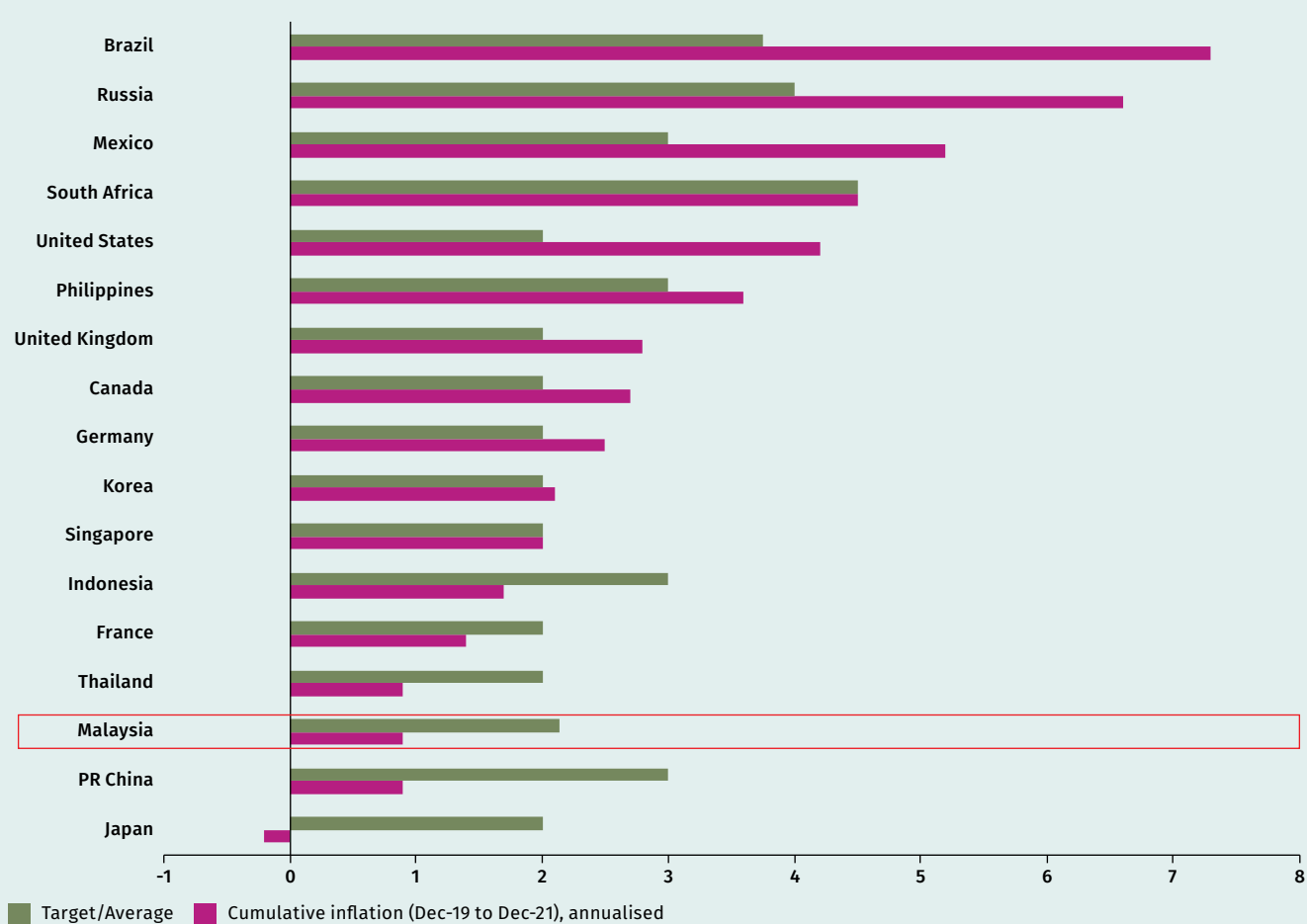
Chart 6 shows that while higher consumer inflation is common worldwide, it is more severe in some countries than others.⁸ This observation suggests country-specific factors at play, which have hindered or amplified the inflationary effects. Namely, on the demand side, these include the pace and magnitude of recovery, the strength of labour market (i.e. spare capacity), and the magnitude of policy support to the economy. On the supply side, these include price interventions by authorities, the proximity to global manufacturing hub, and the extent of labour supply disruptions.

⁸ Annualised cumulative inflation is used because some of the increase in inflation in 2021 reflects the unwinding of Government measures in 2020.

On the demand side, a factor identified by Adrian and Gopinath (2021) to be the source of this variance is the pace and magnitude of demand recovery. In several countries, economic activities have rebounded exceptionally quickly. It is in these countries, where the economy has recovered sharply, that underlying inflation⁹ has tended to increase the most (Chart 7). For some countries such as Malaysia, where economic activities remain substantially below its pre-pandemic trend, there remains spare capacity and the upside risks to underlying inflation are relatively more muted.

Partly, this reflects the differences in labour market conditions, which have recovered more sharply in some countries, contributing to stronger wage and demand pressures in these countries (Chart 8). This was in addition to the exceptional degree of policy support, for instance in the US, which has lifted demand for goods at a time when supply has not commensurately recovered, leading to greater price pressures (Chart 9) (Gopinath and Adrian, 2021; Goodhart and Pradhan, 2020). Correspondingly, a measure of COVID-sensitive items in the US has seen significant inflation throughout 2021 (Chart 10). By contrast, such recovery in demand and labour market conditions has been more gradual amongst regional economies, including Malaysia.

Chart 6: Cumulative CPI Inflation (Dec '19 to Dec '21, annualised %)

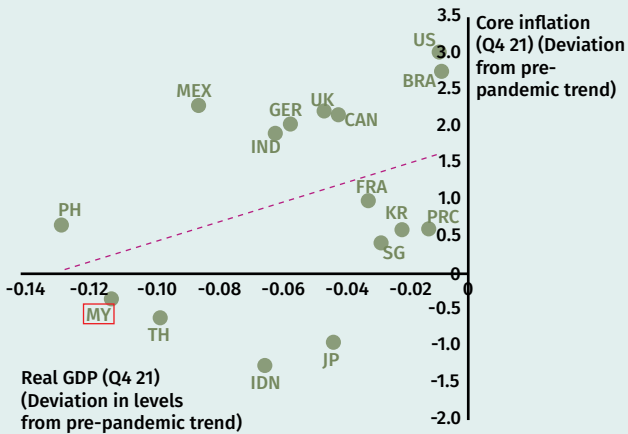


Note: For countries with a range of inflation targets, the midpoint is used. For those without explicit inflation target, inflation deemed as consistent with overall price stability as stated by respective central banks is used. Otherwise, as is the case for Malaysia, historical (2011-2019) average is used. Some countries, like the US, target core inflation. Annualised cumulative inflation is used because some of the increase in inflation in 2021 reflects the unwinding of Government measures introduced in 2020. In such a case, using a year-on-year comparison can be misleading.

Source: International Monetary Fund, FRED, national authorities and Bank Negara Malaysia estimates

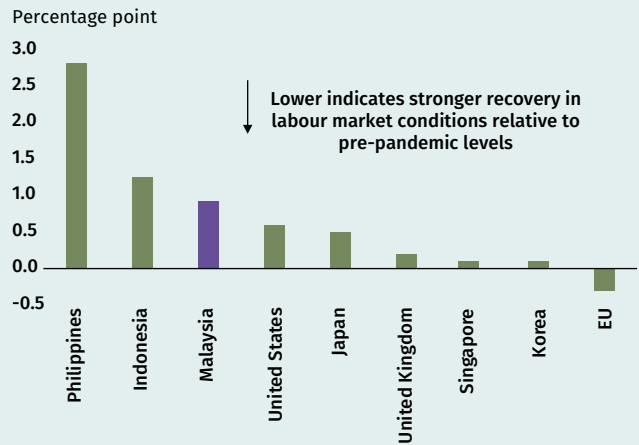
⁹ Measured by core inflation, defined as inflation excluding fuel and food inflation components.

Chart 7: Core Inflation and Economic Recovery



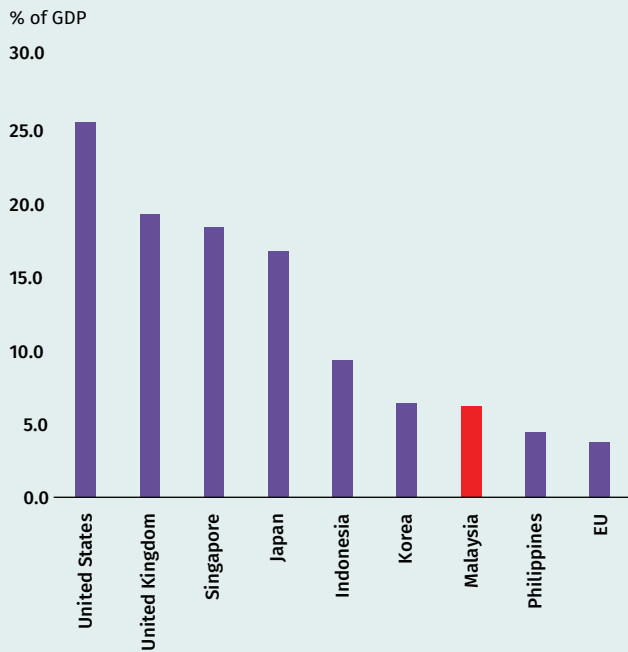
Source: Bank Negara Malaysia estimates based on Department of Statistics, Malaysia, national authorities and Adrian and Gopinath (2021).

Chart 8: Change in Unemployment Rates (percentage point change between end-2021 and end-2019)



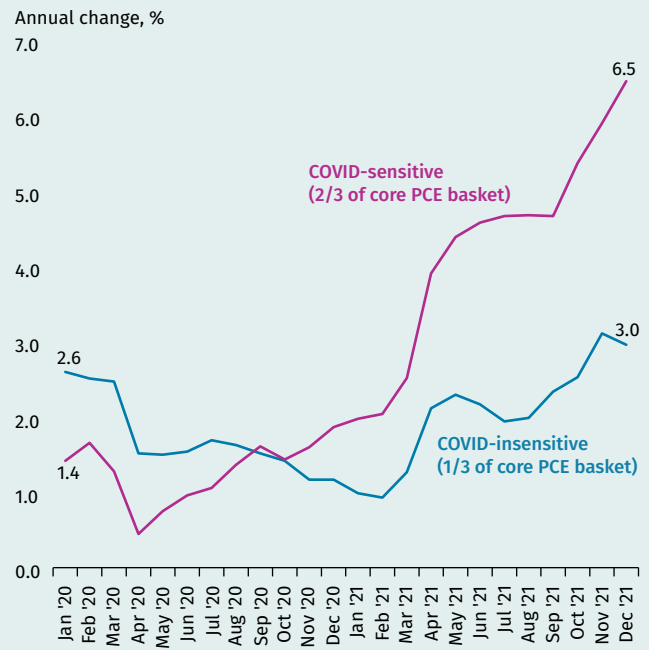
Source: Macrobond

Chart 9: Additional Spending / Foregone Revenues in Response to COVID-19



Source: International Monetary Fund

Chart 10: US Core Inflation by COVID-Sensitivity

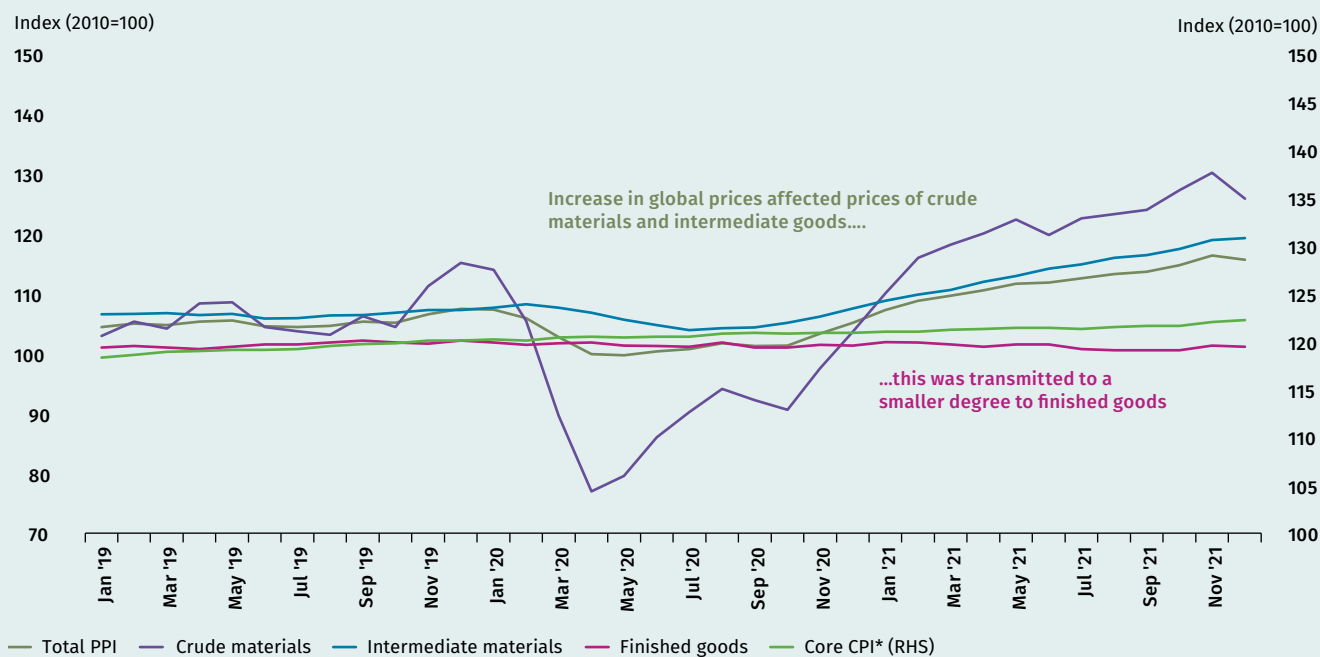


Source: Shapiro (2020a)

Nonetheless, global supply disruptions have made production inputs, from shipping to energy and commodities more expensive. At this juncture, these global supply disruptions have already been more prolonged than expected (Adrian and Gopinath, 2021). While these factors have materialised in elevated Producer Price Index (PPI) globally, the extent of pass-through to consumer prices has varied across countries. For Malaysia, the pass-through to CPI has thus far remained limited, with costs having been largely dampened along the supply chain (Chart 11).¹⁰ Should these cost pressures persist, they could be passed on to consumers to a greater degree going forward.

¹⁰ Based on recent engagements by Bank Negara Malaysia's Regional Economic Surveillance, many firms continued to cite upward pressures on costs of raw and input materials. However, most firms did not expect to fully pass on cost increases given the need to remain conservative due to demand conditions.

Chart 11: Producer Price Index: Local Production by Stage of Processing



* Core CPI excludes the direct impact from consumption tax policy changes.

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

However, key structural factors suggest that the impact to Malaysia’s consumer inflation would likely be relatively contained at this juncture. Firstly, while higher global energy prices have contributed significantly to inflation in many countries, the direct impact has been contained in Malaysia.¹¹ This is due to price interventions, namely price controls on retail fuel and electricity tariff regulations, which have mitigated the impact to consumer prices despite surging global crude oil and coal prices.¹² More recently, price controls on key food items have further alleviated price pressures for consumers.¹³

Secondly, shipping costs have risen globally, but the severity has been less in regional Asian economies (Chart 12). In part, this reflected the sharp rebound in import demand from the US, relative to other countries.¹⁴ Such surge in demand has put upward pressure on long-distance costs, affecting other regions too. The shipping cost from China to Europe and South America has quadrupled in 2021 (Leather, 2021). In contrast, cost increases to regional Asian economies have been relatively contained, in part reflecting the proximity to the global manufacturing hub.

Thirdly, supply disruptions in labour workforce – workers leaving the workforce in large numbers, particularly the US, in what is being called the “Great Resignation” – generally do not appear to be as evident in Malaysia. For economies facing such disruptions, the resulting labour shortages could lead to stronger wage pressures as employers seek to attract workers through higher compensation.¹⁵ Notably, the majority of those who left the Malaysian labour force during phase 1 of the 2021 National Recovery Plan (NRP) cited transient factors, such as “household or family care” and “going for further studies”, as reasons for not seeking work¹⁶, rather than

¹¹ While fuel inflation was a major driver of higher headline inflation for Malaysia in 2021, this largely reflected base effects following the exceptionally low fuel prices in the previous year. The full extent of impact from higher global oil prices, however, was partly mitigated by the fuel price ceiling in place throughout most of the year (RON95: RM2.05 per litre; Diesel: RM2.15 per litre).

¹² Nonetheless, there remain ways by which the higher global energy prices could indirectly affect Malaysian inflation. For instance, fertilisers, which are by-products of natural gas, are a cost component of agricultural products, and could transmit energy costs to food inflation.

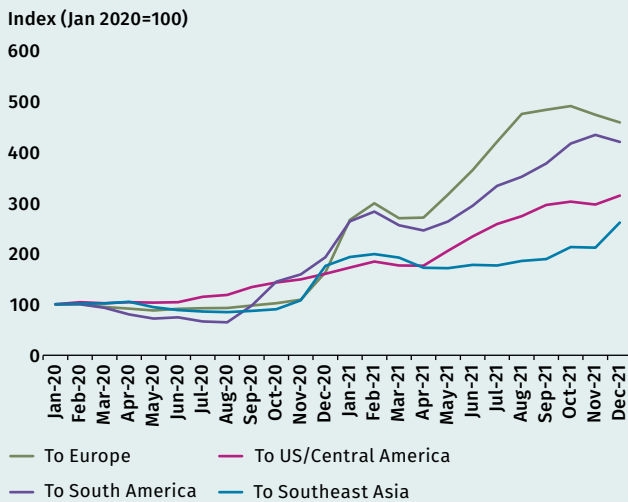
¹³ Across different countries, there are various measures undertaken to soften the impact from rising energy prices, which may not necessarily involve price controls. These include transfers to low-income households, energy tax cuts and excess profit taxes on energy companies.

¹⁴ For instance, over the course of 2021, annual US ocean retail imports are on track to set a new record, up more than 20% compared to 2019 according to estimates by the US National Retail Federation (NRF, 2021).

¹⁵ Furman (2021) partly attributes the high nominal compensation growth in the US to the reduction in labour supply coinciding with a surge in labour demand, as reflected by record-high job openings.

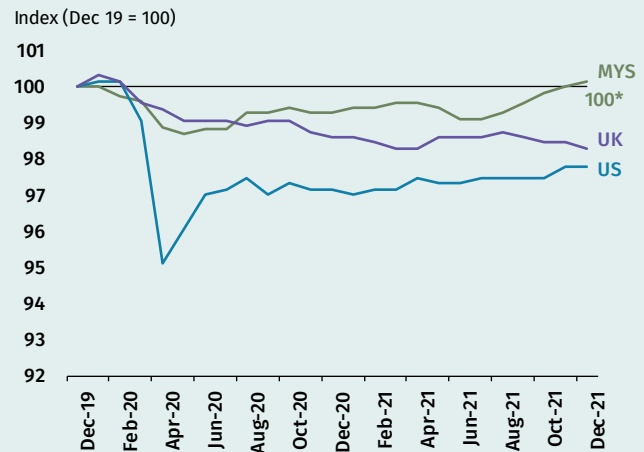
¹⁶ Staff assessment based on Quarterly Labour Force Survey, Department of Statistics Malaysia.

Chart 12: Shipping Costs from PR China



Source: Macrobond

Chart 13: Labour Force Participation Rate



* Note: Malaysia's labour force participation rate in Dec-21 is 69%

Source: Macrobond and Bank Negara Malaysia estimates

retirements, as is the case in the US.¹⁷ Reflecting this, Malaysia's labour participation rate has returned close to pre-pandemic levels in November 2021 (Chart 13), as supply of labour broadly remains forthcoming, albeit with foreign labour shortages remaining in selected sub-sectors.¹⁸ In tandem, wages continue to exhibit moderate recovery and have not outpaced productivity growth, reducing the risk of second-round inflationary impact.¹⁹

Vigilance is warranted despite the expectations of manageable inflationary pressures

As domestic economy recovers, the normalisation of underlying price pressures is expected.²⁰ The analysis by CPI segments, however, implies that excessive inflation pressures from pandemic disruptions have thus far remained contained. Moreover, country-specific factors suggest that overall consumer inflationary pressures in Malaysia are likely to be relatively manageable in the medium term, given some structural and policy factors. Nonetheless, vulnerabilities remain, especially given recent geopolitical developments. Of note, some essential food items, such as fresh meat, are COVID-sensitive and could see larger price pressures that bring negative consequences to households' cost of living.²¹

It is important to remain watchful for signs of price pressures spreading persistently to the rest of the economy. More broad-based and persistent price increases could cause long-term inflation expectations to become unanchored, leading to second-round effects as businesses keep increasing prices in anticipation of higher inflation, or wages increase in an upward spiral, as workers persistently demand for higher wages to make up for the expected losses in purchasing power. Nonetheless, this remains a tail risk. For 2022, while the inflation outlook is subject to upside risks, headline inflation is projected to remain manageable.

¹⁷ IMF (2021) found that the drop in labour participation in the US was driven by more persistent factors such as increased inactivity among older workers and shifting worker preferences.

¹⁸ For example, the agriculture sector and selected manufacturing sub-sectors have experienced shortages of foreign labour due mainly to pandemic containment measures, though these are expected to gradually ease in 2022.

¹⁹ Such a phenomenon, also called "wage-inflation spiral", occurs when stronger workers' bargaining power leads to wage pressures and, in the absence of corresponding productivity improvements, firms in turn pass on the extra labour cost by increasing consumer prices. As workers in response push for even higher wages, this creates a self-fulfilling cycle of rising inflation.

²⁰ For more details on the inflation outlook for the year, refer to Chapter 2: Outlook and Policy in 2022.

²¹ Nonetheless, the introduction of fresh chicken ceiling price from 5 February 2022 would help contain the upward pressures on consumer prices. For more details on cost of living in 2021, refer to the box article Cost of Living Revisited: Causes and Consequences in the 2021 BNM Annual Report.

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