Annex 1. Methodology: Supply and Demand Decomposition

Demand and supply factors driving inflation of all economies in the region are decomposed using the Federal Reserve's framework in Shapiro (2022). The decomposition is obtained by classifying inflation subcomponents into demand- and supply-driven factors of each economy. The subcomponents with the same driving forces are then aggregated by multiplying the CPI weights by the year-on-year inflation of the corresponding subcomponents. The demand- and supply-driven classification is made based on the results of the following equation:

$$\Delta ln\,(P_{it}) = c + \sum_{j=1}^{4} \beta_j \Delta ln\,(FP_{t-j}) + \beta_5\, OutputGap_{t-1} + \beta_6 \Delta ln\,(P_{it-1}) + \varepsilon_{it}$$

(Equation A1.1)

where P_{it} is the quarterly price index for subcategory i of the CPI at time t; FP_{t-j} is foreign price index, represented by the IMF's International Commodity Price Index (the IMF's International Food Price Index is applied to food subcategories) denominated in local currency at lag j; $OutputGap_{t-1}$ is defined as (Actual GDP–Potential GDP)/ Potential GDP at lag 1, in which the Potential GDP is estimated by applying the Hodrick-Prescott (HP) filter to quarterly GDP. All series are seasonally adjusted, and the sample period is from the first quarter of 2001 to the fourth quarter of 2024, subject to data availability.

Inflation subcomponents that are driven by supply and demand factors are classified based on the signs of the price and quantity equations for each subcomponent in the CPI basket. Specifically, demand shocks move prices and quantities in the same direction along the upward-sloping supply curve, while supply shocks move prices and quantities in opposite directions along the downward-sloping demand curve. As the data on quantities of goods transacted are not available, the output gap is used as a proxy in Equation A1.1, and the drivers of inflation are assigned as follows:

- ***Supply-driven inflation components:*** Sum of the coefficients of all lagged foreign prices is positive and has a p-value of Wald F-statistics < 0.2; and/or negative sign for output gap.

- ***Demand-driven inflation components:*** All components are not driven by foreign prices and have a positive sign for the output gap.

Annex 2. Methodology: Global and Domestic Factors

The decomposition of headline inflation for each economy are estimated by regressing the headline inflation on the output gap, the change in the bilateral exchange rate against the US dollar, the policy rate, and global commodity price inflation, as in the following equation.

$$CPI_t^{YoY} = c + \beta_1 OutputGap_{t-j} + \beta_2 ER_{t-k}^{YoY} + \beta_3 \Delta_4 PR_{t-1} + \beta_4 CommodityPrice_{t-m}^{YoY} + \varepsilon_t \quad \text{(Equation A2.1)}$$

where CPI_t^{YoY} is the year-on-year headline CPI inflation at quarter t; $OutputGap_{t-j}$ is the estimated output gap at lag j, where the output gap is calculated as in *Annex 1*; ER_{t-k}^{YoY} is the year-on-year change in the bilateral exchange rate against the US dollar at lag k; $\Delta_4 PR_{t-1}$ is the change in policy rate over four quarters at lag l; $CommodityPrice_{t-m}^{YoY}$ is the year-on-year change in IMF's International Commodity Price Index at lag m. For all independent variables, the four-quarter or eight-quarter moving average is applied, and the lags (j,k,l,m) are chosen from lag 1–lag 4, based on the signs and significance of the variables. Country-specific factors are added if needed. The sample period is from the first quarter of 2010 to the fourth quarter of 2024, subject to data availability.

The coefficients in Equation A2.1 represent the sensitivity of CPI inflation to the changes in different independent variables. Specifically, β_2 is the exchange-rate passthrough, that is, the percentage point change in year-on-year CPI inflation subject to a 1 percent increase in the four-quarter moving average of the bilateral exchange rate (local currency depreciation against the US dollar) over a year.

Based on the estimation results in Equation A2.1, headline inflation could be decomposed by the contributions of different economic factors, including the output gap, the exchange rate, the policy rate, global commodity prices, and "Others" which reflect the impacts of the country-specific factors other than the four factors above.