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Singapore, 15 October 2018(Monday)- Singaporeans' One-year-Ahead median inflation expectations declined to 2.88% in September 2018, as a result of the strength of the US economy, the consequent policy normalisation, and the new trade deal between US, Canada and Mexico, despite apprehensions of ongoing trade war between the two largest economies of the world - US and China. This is the research findings of the latest quarterly survey for the Singapore Index of Inflation Expectations (SInDEx) by the Sim Kee Boon Institute for Financial Economics (SKB Institute) at Singapore Management University (SMU).

Academic and practicing economists have been puzzled by the relatively low levels of inflation and inflation expectations despite several contrary factors in the global economy. First, there has been excess liquidity in the market due to one of the longest periods of accommodative monetary policy in the aftermath of the global financial crisis in 2008. Second, the ongoing normalisation of the monetary policy by the US Federal Reserve since 2015, and the consequent increase in the value of the US dollar particularly vis-à-vis the emerging market currencies. Third, despite the new trade deal with Canada and Mexico, the current US administration's imposition of trade tariffs and threatened renegotiation of existing multilateral trade agreements, as well as the ensuing retaliatory measures from other major economies particularly China. Fourth, the global uncertainty with the stalled BREXIT negotiations and a possibility of a 'no-deal' BREXIT; and in general, the emergence of populist and protectionist political movements in major European economies. Finally, a cyclical upturn in the commodity market with a surge in prices of commodities including crude oil. However, despite all these headwinds to trade, global inflation has not spiked. The International Monetary Fund (IMF), in outlining the challenges to monetary policy particularly in emerging markets, has highlighted that domestic factors rather than global ones might be responsible for muted inflation in most emerging economies.

As a way forward for stabilising global inflation outlook in an era of normalisation of monetary policy particularly in the US, the IMF has said in its October 2018 World Economic Outlook report, '... further improvements in the extent of anchoring of inflation expectations can significantly improve economic resilience to adverse external shocks in emerging markets. Anchoring reduces inflation persistence and limits the pass-through of currency depreciations to domestic prices, allowing monetary policy to focus more on smoothing fluctuations in output...'

In Singapore, on the domestic front, we note some factors that have had an impact on inflation expectations. First, inflation in the major components of the CPI-All Item basket has generally increased. The year-on-year decline in accommodation related expenses have moderated, while the decline in private road transport costs have somewhat stabilised. In addition, food and retail inflation has picked up slightly year-on-year. However, services inflation has eased. Finally, improving labour market conditions might not have impacted domestic prices as much through pass-through costs.

In summary, after considering the counterbalancing impacts of a normalisation of monetary policy, trade tensions and the impact on domestic prices, Singaporeans who responded to the SInDEx survey felt that there is a significant decline in inflation expectations both in the medium term and the long term.

Currently into its eighth year, SInDEx was developed at the Sim Kee Boon Institute for Financial Economics by SMU Professors Aurobindo Ghosh and Jun Yu. The SInDEx survey, supported and implemented by Agility Research & Strategy, a leading Asian consumer insights and strategy firm with a large client base of government and private sector clients, is derived from an online survey of around 500 randomly selected individuals representing a cross section of Singaporean households. The online survey helps researchers understand the behaviour and sentiments of decision makers in Singaporean households. The quarterly SInDEx survey has yielded two composite indices, median

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SInDEx1 and median SInDEx5. Medians are less affected by outliers in survey-based methods, hence median SInDEx is used for the current release.

In the latest and the twenty-ninth wave of the SInDEx survey conducted in September 2018, consumers shared their views on expectations of inflation-related and asset management related variables over the medium term (One-year-Ahead) to long term (Five-year-Ahead).

In September 2018, the quarterly SInDEx survey showed that the median One-year-Ahead headline inflation (or CPI-All Item inflation) continued a downward trend to 2.88% from 3.11% recorded in June 2018, slightly lower than its recent third quarter average of 2.91%. Additionally, compared to the historical median headline inflation expectations (since the inception of SInDEx in September 2011) average of 3.41%, current One-year-Ahead median headline inflation is significantly lower.

In the June 2018 SInDEx survey, the team at SMU together with the Behavioral Insights Team (BIT, originally part of the United Kingdom Cabinet Office) and the Monetary Authority of Singapore polled individuals on the constituents of CPI-All item inflation expectations while providing them with more current economic information to facilitate informed responses. This research was conducted to sharpen the SInDEx survey questions to accommodate for potential behavioural biases in the individuals' responses.

Since the updated SinDEx survey was launched in June 2018, the median one-year-ahead inflation expectations of some of the components of CPI-All Item inflation such as Food, Transport, Housing & Utilities and Healthcare were also recorded. Compared to June 2018, the September 2018 survey revealed significant reductions in inflation expectations of these major components of the CPI basket. Food inflation remained unchanged at 2%; Transportation inflation pared to 2.1% from 3%; Housing & Utilities inflation also corrected to 2% from 3%, while Healthcare inflation remained unchanged at 3%.

The overall median Headline Inflation Expectations, after adjusting for potential behavioural biases, was at 2% in September 2018, unchanged from the June 2018 survey. This also suggests that the median inflation expectations seem to be 'anchored' fairly well despite various short-term uncertainties of the global economy, including trade tensions, policy normalisation and continued strength in recovery of oil and other commodity prices.

Excluding accommodation and private road transportation related costs, the One-year-Ahead median Singapore core inflation expectations was recorded at 2.92% in September 2018, substantially lower than the June 2018 survey of 3.29%. For a subgroup of the population who own their accommodation and use public transport, the One-year-Ahead median Singapore core inflation rate also dropped significantly to 2.86% in September 2018 from 3.19% polled in June 2018. This subgroup's expectations of core inflation closely resembles the Singapore Core Inflation Expectations, as unlike the general population they are not exposed to private road transportation or accommodation expenses. These results suggest that there seems to be a significant downward correction in the perception of future overall price changes representing the Singapore core inflation rate that excludes housing and private road transportation as a possible early impact of policy tightening.

The research team also polled the respondents for their One-year-Ahead expectations of inflation after excluding accommodation and public road transportation expectations. The respondents were provided with further information of current and past core inflation rates. After adjusting for some potential behavioral biases, the One-year-Ahead inflation expectations, excluding accommodation and private road transportation, was polled at 2%, this was unchanged from a similar survey done in June 2018, suggesting some degree of anchoring of inflation expectations despite short term global uncertainties.

In summary, the One-year-Ahead median Singapore Index of Inflation Expectations (Median SInDEx1), a composite weighted index of One-year-Ahead median inflation expectations, declined to

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2.91% in September 2018 from 3.20% in the June 2018 survey, a nearly 0.3% drop. The median SInDEx1 remained lower than its historical average value of 3.41% since the survey's inception in September 2011. SInDEx1 was constructed as a plausible alternative and more stable measure of inflation expectations by putting lower weightage on the more volatile and policy-sensitive components such as accommodation, private transportation, food and energy. Median SinDEx1 is also less adversely affected by extreme values, unlike the original mean.

SMU Assistant Professor of Finance Aurobindo Ghosh, who is the Principal Investigator of the SInDEx Project highlighted, 'Inflation expectations of Singaporeans surveyed seem to embody the dichotomy faced by central banks in most developed and major emerging markets which has to import commodities like oil. On one hand, steady and strong US growth and lowest unemployment in nearly five decades prompted the US Federal Reserve to implement a faster than expected normalisation of the monetary policy. This has resulted in a run-up in the value of the US dollar against most currencies. This might prompt other central banks to follow suit and tighten their own monetary policy, as well keep pace with a surging US dollar. On the other hand, with a muted inflation and the need to give a boost to domestic producers, central banks might also resort to a more deliberate approach and keep their policy more accommodative. Monetary policy tightening through increase in interest rates often takes effect in as long as 18 months, hence tightening the policy too soon might risk an inversion or flattening of the yield curve which means short terms rates are almost equal to or greater than long term rates which is often a harbinger of incoming downturn.'

For the longer horizon, the Five-year-Ahead median headline (CPI-All Items) inflation expectations in the September 2018 survey inched up to 3.81% from 3.77% in June 2018. The current polled number is still less than its historical average of 4.23% since the survey started in September 2011. The Five-year-Ahead median inflation expectations, after adjusting for behavioral biases, was recorded at 3% in September 2018, once again unchanged from the survey polled in June 2018.

The Five-year-Ahead median Singapore core inflation rate (excluding accommodation and private road transportation related costs) pared to 3.65 % in September 2018 from 3.69% in June 2018. Overall, the composite Five-year-Ahead median Singapore Index of Inflation Expectations (median SInDEx5) declined in September 2018 to 3.68% from 3.71% in June 2018, still substantially lower than its historical average of 4.06%. The Five-year-Ahead median inflation expectations (excluding accommodation and private road transportation), after adjusting for potential behavioural biases, was recorded at 3%, unchanged from the survey polled in June 2018. These unchanged inflation expectations, despite the price risk of global trade wars and increasing commodity prices, also indicate signs of anchoring of long-term inflation expectations.

'SMU researchers, in a joint study with the Behavioral Insights Team and the Monetary Authority of Singapore, performed a controlled trial on the impact of questionnaire design on responses, drawing from the work of behavioural scientists like Professor Richard Thaler, the 2017 Nobel laureate in Economics. The current survey accommodated for some such behavioural biases by providing current economic information for respondents to form opinions. We have identified some factors that can potentially reduce the so-called 'anchoring bias' that appears when respondents latch onto visible pieces of information that may influence their stated opinions about economic variables. We are addressing some of these issues in the current and future surveys through changes in the questionnaire design in addition to asking about both components and aggregate inflation expectations. Our results show that Singaporeans' median inflation expectations, both in the medium and long term, seem to be fairly well anchored or grounded after adjusting for some behavioural biases.' Prof Ghosh added.

Commenting on the results of the Survey, SKB Institute Director Professor Dave Fernandez commented, 'The SInDex results seem to me consistent with the recent decision by the MAS to increase slightly the slope of the S\$NEER policy band. While core inflation is expected to edge up further in the months ahead, our survey shows that inflation expectations are well contained.'

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Methodology

Two indices were created, median SInDEx1 and median SInDEx5, to measure the 1-year inflation expectations and the 5-year inflation expectations. The data for the SInDEx survey was collected online from about 500 consumers. The sampling was done using a quota sample over gender, age and residency status to ensure representativeness of the sample. Employees in some sectors like journalism and marketing were excluded as that might have an effect on their responses to questions on consumption behavior and expectations.

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