

Türkiye: July CPI lower than expected

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Consumer prices rose by 2.37% in July, once again below market consensus (2.6%) and our expectation (4%), which led to an annual inflation of 79.6%. The downside surprise was due to lower than expected food prices, particularly unprocessed foodstuff, which is somewhat conflicting with other regional price indexes and observed data. Core inflation was lower, especially in certain items sensitive to exchange rate movements. Meanwhile, domestic producer prices reinforced cost push factors by picking up 5.2% mom and 144.6% yoy, widening the gap with consumer prices. Looking ahead, we expect consumer inflation to accelerate above 90% in the coming months led by loose economic policies and significantly deteriorating inflation expectations. By year-end, we expect inflation to slow down to near 70% given positive base effects in the last two months of the year, assuming no substantial shock on the exchange rate. Despite some easing in global commodity prices in recent weeks, risks to inflation remain to the upside given worsening underlying factors.

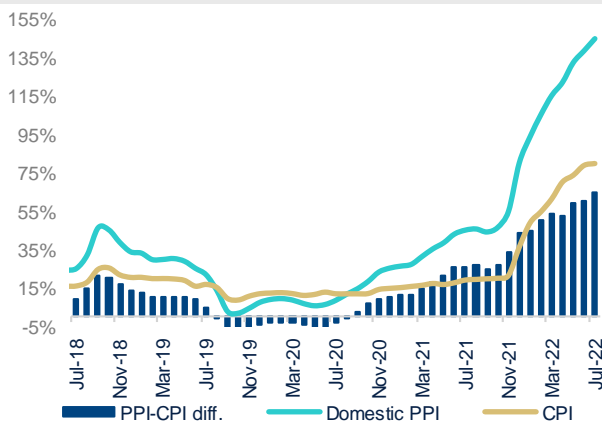
Weak CPI reading but with deteriorating underlying factors

Food prices continued to rise in July by 2.9% mom and 94.5% yoy but still surprised to the downside due to lower than expected increases in unprocessed food prices, particularly fresh fruit and vegetables. Moreover, processed and other unprocessed food prices slowed down compared to previous months but still remained historically high led by high global food and commodity prices. Energy prices fell for the first time since April 2020 by 3.1% mom on a sharp decline in fuel prices. As a result, annual energy inflation edged down to 129.3% from 151.2% in June.

Core prices kept increasing with a 3.45% gain mom and 61.7% yoy. This increase seems moderate when considering the sharp depreciation of the currency and deepening cost push factors due to strengthening producer prices. Basic goods prices picked up by 3.7% mom, led by durables goods (3.8% mom) and implied 10% increase since April (vs. the depreciation of above 15% in the currency basket in the same period). Services prices geared down in monthly terms (3.2%) due to weaker realizations in restaurants and hotels despite the high tourism season, large wage adjustments - almost 30% minimum wage hike in July- and expected second round effects from food inflation. Nonetheless, annual services inflation rose to 51.5%, reaching a new record level since the start of the series in 2003.

Not surprisingly, inflation expectations continue to deteriorate significantly with levels of 40.2% for one-year ahead and 24.3% for two-years out. This trend reflects the lack of a credible anchor in price setting mechanism. This environment becomes more precarious considering that global inflation and commodity prices remain high despite some signals of slow-down in recent weeks. Given the loose economic policies to support domestic demand, ongoing pressures on the exchange rate and second round effects, risks to the inflation outlook keep deteriorating.

Figure 1. **CPI vs Domestic PPI, YoY**



Source: Garanti BBVA Research, Turkstat

Figure 2. **Exchange Rate Pass-thru on Core D, recursive**



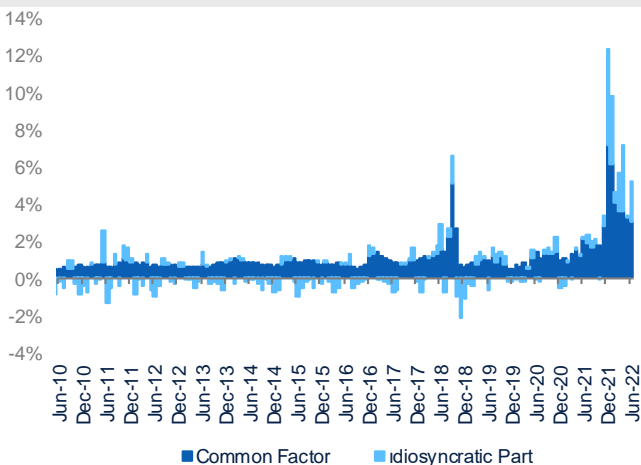
Source: Garanti BBVA Research, Turkstat

The exchange rate becomes a more persistent and weighing factor on CPI

In order to calculate the impact, persistence and relative importance of the exchange rate on inflation, we conducted an analysis based on Conflitti and Luciani (2017)¹. First, we developed a dynamic factor model and calculated a common factor from the underlying subcategories of CPI. Second, we conducted a VAR analysis to check for its interaction with key macro variables, particularly the exchange rate.

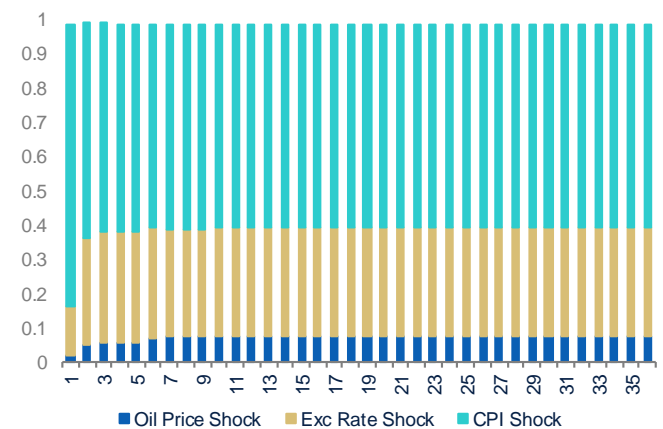
In the first part, 43 subcategory indices of consumer prices were used to calculate the common factor in the CPI. The sub-indices were seasonally adjusted and month on month log changes were obtained. Factors and loading parameters were taken with a two-step estimator similar to the method of Dose, Gianone and Reichlin (2011)². The weights of each sub-category in the CPI were calculated according to the weights in 2022. As a result, monthly changes in the seasonally adjusted headline inflation were decomposed into two parts: common factor and idiosyncratic factor, as seen in Figure 3. As our results show, while common dynamics dominate the historical fluctuation in consumer prices, idiosyncratic dynamics have recently gained importance.

Figure 3. **Common and Idiosyncratic part of CPI, MoM**



Source: Garanti BBVA Research, Turkstat

Figure 4. **Variance Decomposition of CPI**



Source: Garanti BBVA Research, Turkstat

In the second part, we estimated the impact, persistence and importance of the exchange rate on inflation with three VAR analyses using Brent oil prices in USD, a currency basket (simple average of USD/TL and EUR/TL) and industrial production. In order to obtain a historically consistent result, we excluded the effects of the Covid period and the recent distortions so the period from 2005 to December of 2019 was preferred. The results of the VAR analysis were compared using the specified macro variables, headline inflation, Core-D inflation and the common factor.

First of all, we analyzed our variance decomposition results to understand the importance of the exchange rate on inflation. Results with headline and core inflation indicate that the exchange rate explains 32% and 42% of the variation in inflation (Figure 4 and 5), respectively, whereas the VAR analysis shows that the level reaches up to 58% (Figure 6) with the common factor. Therefore, while inflation itself is an important explanatory factor (59% using CPI and 45% using Core-D), this rate is much lower (close to 36%) than the exchange rate effect in the analysis utilized with the common factor.

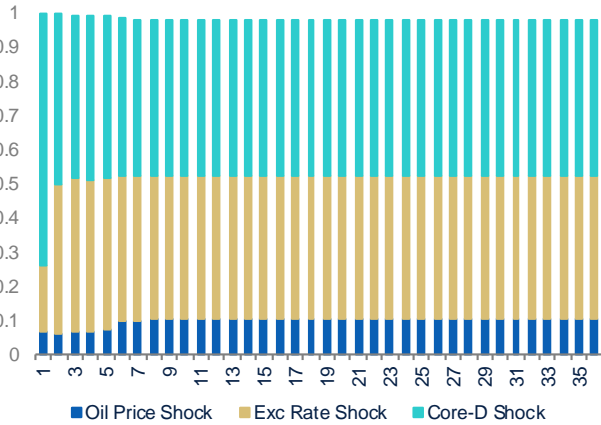
Finally, the impulse response analysis suggests that the effect of the exchange rate shock on inflation disappears very quickly even though it is fast and high when CPI and core inflation are used (Figure 7). The analysis made with the common factor (Figure 8) indicates that the exchange rate effect has a long and lasting effect.

¹ Conflitti, Cristina, and Matteo Luciani. "Oil price pass-through into core inflation." *The Energy Journal* 40.6 (2019).

² Doz, Catherine, Domenico Giannone, and Lucrezia Reichlin. "A two-step estimator for large approximate dynamic factor models based on Kalman filtering." *Journal of Econometrics* 164.1 (2011): 188-205.

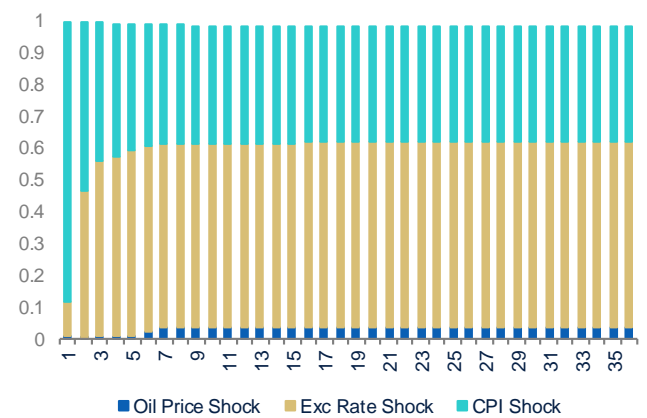
As a result, we observe that the exchange rate has a more persistent and much higher impact than we thought on inflation dynamics. These results point out that in order to return to permanent low levels of inflation, there should be sustained stabilization of the exchange rate so that the stickiness stemming from interpenetration can be reduced. In other words, the more the Lira continues to lose value against other currencies, the more difficult it will be to achieve price stability.

Figure 5. **Variance Decomposition of Core D***



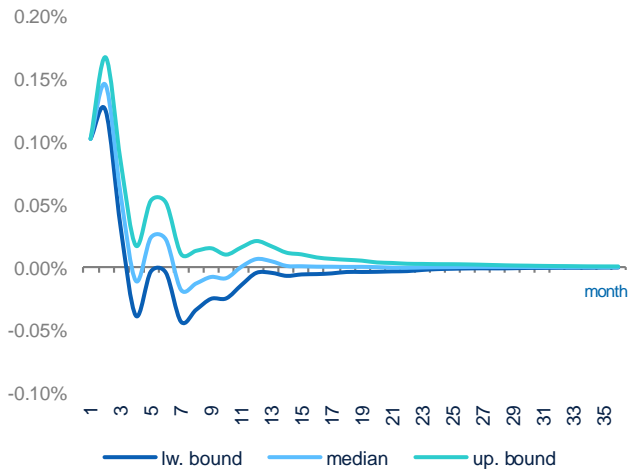
Source: Garanti BBVA Research, Turkstat, *X-axis represents months

Figure 6. **Variance Decomposition of Common Factor**



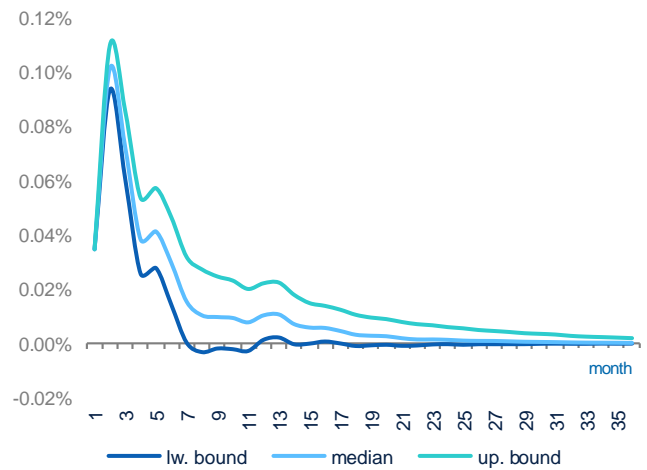
Source: Garanti BBVA Research, Turkstat

Figure 7. **Response of CPI to Exc Rate Shock**



Source: Garanti BBVA Research, Turkstat

Figure 8. **Response of Common Factor to Exc Rate Shock**

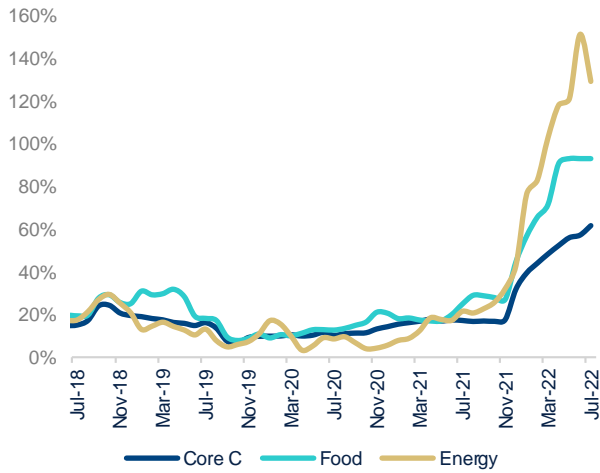


Source: Garanti BBVA Research, Turkstat

Inflation outlook likely to generate a long-lasting problem

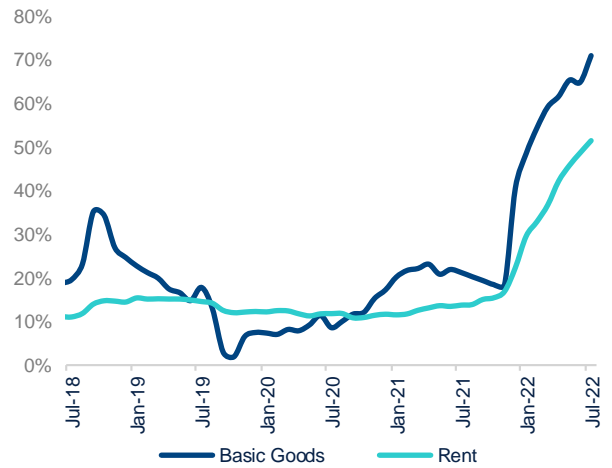
Ongoing solid levels of domestic consumption, led by continuing credit impulses and other loose economic policies, particularly wage adjustments, keep demand pressures high on consumer prices. Despite some easing, supply side problems maintain global commodity prices relatively strong. Also, continuing external financing needs and high dollarization in the economy lead to depreciation pressures on the exchange rate, which result in much higher production costs. Last but not least, inflation expectations will continue to climb up until a clear policy reaction is taken. As seen in our latest analysis, a significantly strengthened common factor in recent months show how the inflation dynamics become more interpenetrating and self-fulfilling fueling with a much higher inertia. Therefore, we have recently revised our inflation projections to the upside including the medium term. We now forecast consumer inflation to be 70% at the end of the year and 33% at the end of 2023, with risks remaining on the upside.

Figure 7. **CPI Main Subcomponents, YoY**



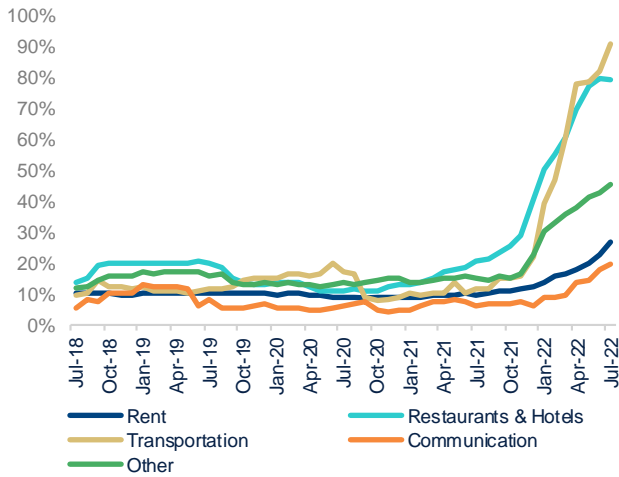
Source: Garanti BBVA Research, TURKSTAT

Figure 8. **Basic Goods and Services Inflation, YoY**



Source: Garanti BBVA Research, TURKSTAT

Figure 9. **Services Inflation, YoY**



Source: Garanti BBVA Research, TURKSTAT

Figure 10. **Survey Based Inflation Expectations, YoY**



Source: Garanti BBVA Research, TURKSTAT

Figure 11. **CPI in Subcomponents**

	MoM	YoY
Total	2.37%	79.60%
Food & Non-alcoholic beverages	3.2%	94.6%
Beverage & Tobacco	6.9%	82.7%
Clothing & Textile	1.8%	32.1%
Housing	2.0%	70.0%
Household Equipment	3.9%	88.3%
Health	7.0%	48.4%
Transportation	-0.8%	119.1%
Communication	1.8%	25.8%
Recreation & Culture	4.5%	55.3%
Education	0.8%	26.8%
Restaurants & Hotels	2.5%	79.1%
Misc. Goods & Services	2.1%	66.8%

Source: Garanti BBVA Research, Turkstat

Figure 12. **Domestic PPI in Subcomponents**

	MoM	YoY
Total	5.17%	144.61%
Mining & Quarrying	6.4%	149.9%
Manufacturing	2.9%	121.7%
Food Products	4.7%	136.7%
Textiles	2.1%	123.1%
Wearing Apparel	3.1%	53.1%
Coke & Petroleum Products	-9.0%	243.4%
Chemicals	2.8%	132.5%
Other Non-Metallic Mineral	6.4%	194.2%
Basic Metals	1.1%	104.5%
Metal Products	4.0%	114.9%
Electrical Equipment	3.3%	101.2%
Electricity, Gas, Steam	19.0%	441.8%

Source: Garanti BBVA Research, Turkstat

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