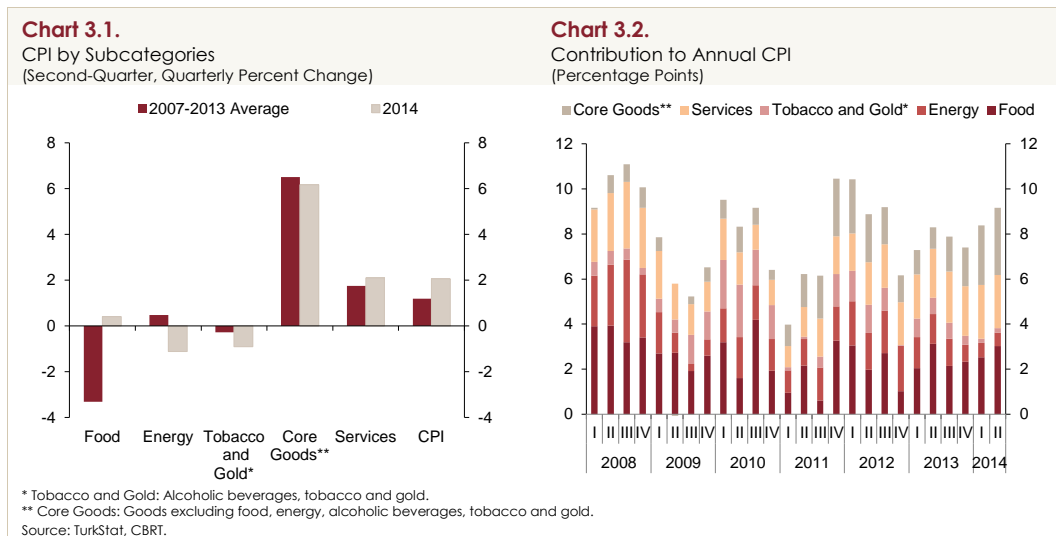


3. Inflation Developments

In the second quarter of 2014, annual consumer inflation increased by 0.8 points quarter-on-quarter to 9.16 percent. The main drivers of this increase were food and core goods prices. It was the worst second quarter in the history of the index for the food category due to drought and the exchange rate pass-through. In the core goods category, annual inflation fell in durable goods but went up further in other core goods that react with a lag to the exchange rate pass-through. In the services category, while the underlying trend displayed a negative outlook, annual inflation declined slightly, mainly on base effects. Thus, the rise in the annual rate of change in core inflation indicators halted as of the second quarter. Meanwhile, after the first-quarter deterioration, both pricing behavior and inflation expectations saw a partial improvement in the second quarter. Moreover, with the appreciation of the Turkish lira and the moderate course of import prices, domestic manufacturing industry prices flattened for the first time after an extended period during this quarter. Therefore, except for the ongoing supply constraints on food prices, inflation faced relatively fewer cost pressures in the second quarter.

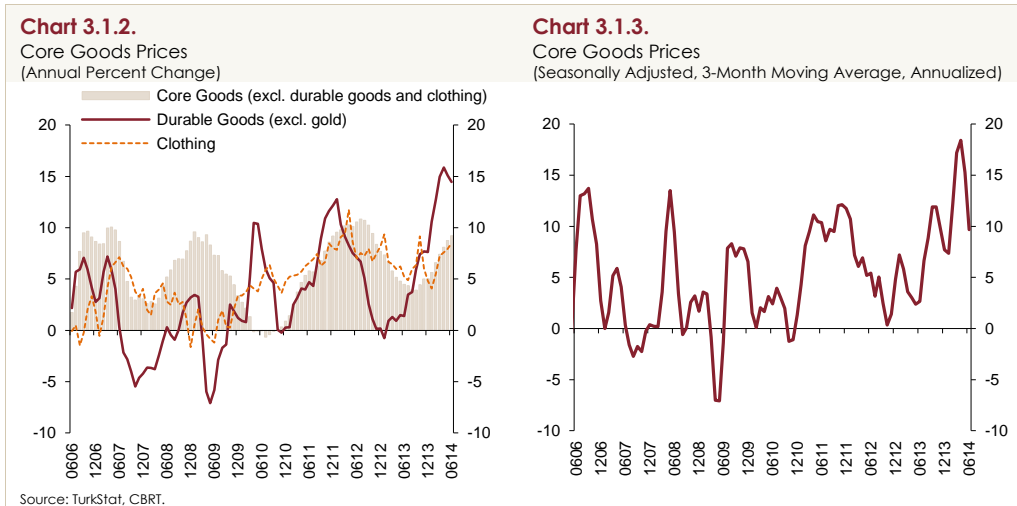
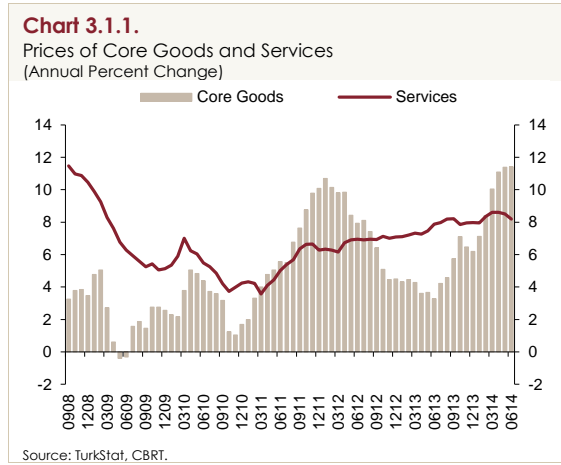
Across subcategories, food prices recorded a higher-than-average increase in the second quarter of the year. Services prices also posted a higher-than-average increase, whereas energy prices dropped compared to previous periods (Chart 3.1).



In sum, in the second quarter, unfavorable food prices and the delayed effects of exchange rate developments, particularly through prices of core goods, affected consumer inflation. The contribution of food and core goods prices to annual inflation increased by 0.50 and 0.34 points, respectively (Chart 3.2). Consumer inflation is expected to follow a downward path in the upcoming period. The outlook for food prices will determine the pace of disinflation. Yet, both the gradually waning cumulative effects of exchange rates and the modest course of private final domestic demand will support the fall in consumer inflation.

3.1. Core Inflation Outlook

Annual core goods inflation soared by 1.37 points to 11.41 percent in the second quarter (Table 3.1.1 and Chart 3.1.1). This rise in annual inflation was attributed to the prices of core goods excluding durables, which show a relatively lagged response to exchange rate effects. On the other hand, the uptrend in the annual inflation of durable goods prices that react rapidly to exchange rate developments reversed in line with the appreciation in the Turkish lira (Chart 3.1.2). Thus, exchange rate driven inflationary pressures declined in the second quarter and the rising trend of annual inflation in core goods prices stopped as of June (Chart 3.1.1). Meanwhile, the underlying trend of the prices in this category saw major improvement in this period (Chart 3.1.3).



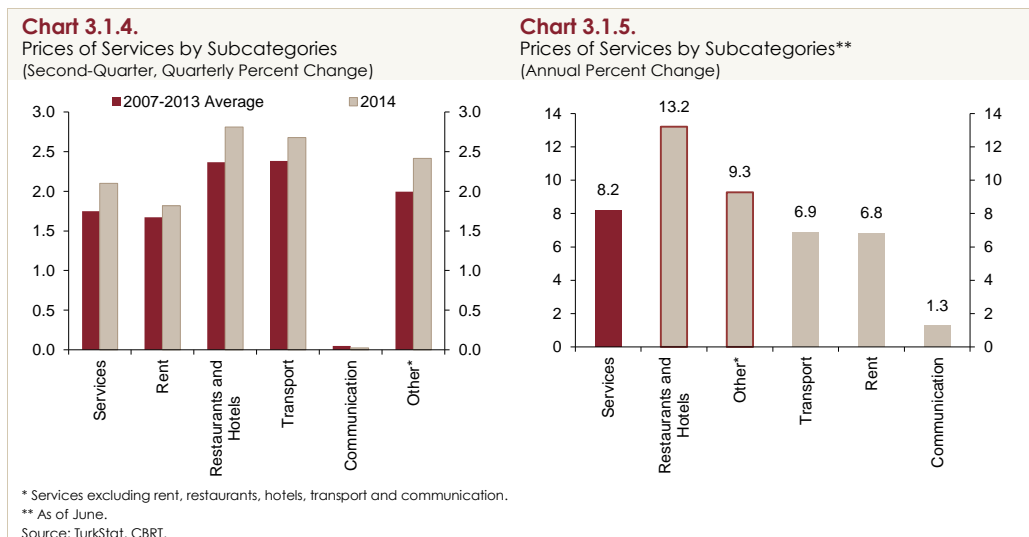
With the appreciation of the Turkish lira during April-May, prices of core goods fell for two consecutive months. Compared with the first quarter of the year, the recent relatively stable course of exchange rates alleviates pressures on core goods inflation through both the exchange rate and the expectations channel. Accordingly, the annual inflation in this category is expected to fall further in the rest of the year.

Table 3.1.1.Prices of Goods and Services
(Quarterly and Annual Percent Change)

	2013				2014	
	II	III	IV	Annual	I	II
CPI	1.33	0.97	2.28	7.40	3.57	2.06
1. Goods	0.90	0.46	2.72	7.18	4.08	2.05
Energy	-0.92	2.95	2.20	5.15	0.21	-1.12
Food and Non-Alcoholic Beverages	-1.69	0.19	4.01	9.67	7.50	0.41
Unprocessed Food	-4.70	-2.29	6.46	12.88	10.79	-2.16
Processed Food	0.99	2.27	2.04	7.11	4.57	2.82
Core Goods	4.86	-0.62	3.48	6.20	2.05	6.16
Clothing and Footwear	20.95	-10.43	10.38	4.82	-10.32	22.36
Durable Goods (excl. gold)	0.05	3.75	1.12	7.62	9.54	-0.39
Furniture	0.65	1.59	2.89	9.50	3.14	4.00
Electrical and Non-Electrical Appliances	-2.66	0.12	0.91	-1.48	3.86	-2.51
Automobile	0.72	5.55	0.67	10.27	16.65	-1.24
Other Durable Goods	1.53	1.80	2.69	7.25	2.78	2.75
Core Goods (excl. clothing and durable goods)	1.15	0.75	2.13	5.05	3.21	2.85
Alcoholic Beverages, Tobacco and Gold	-1.35	0.68	-4.39	6.74	8.24	-0.92
2. Services	2.50	2.32	1.16	7.98	2.37	2.10
Rent	1.59	1.70	1.81	6.50	1.30	1.82
Restaurants and Hotels	2.18	2.85	2.42	9.86	4.54	2.81
Transport	2.34	2.63	0.18	7.20	1.24	2.68
Communication	1.28	1.30	0.09	3.09	-0.14	0.02
Other Services*	4.02	2.65	0.82	10.43	3.10	2.42

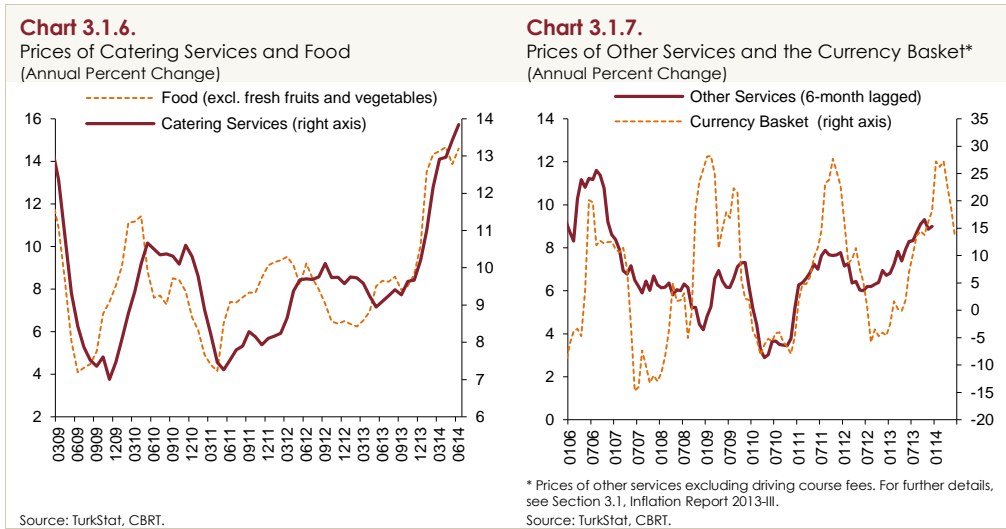
* Services excluding rents, restaurants and hotels, transport and communication.
Source: TurkStat, CBRT.

Services prices increased at a rate higher than historical averages in the second quarter (Chart 3.1.4). However, annual inflation dropped by 0.4 points from the end of the first quarter to 8.2 percent, largely due to base effects. This relatively high level of services inflation is owed to developments in the subcategories of restaurants and hotels and other services (Chart 3.1.5). Apart from these two subcategories, annual inflation hovers slightly below 7 percent in transport and rents and remains quite moderate in communication services.

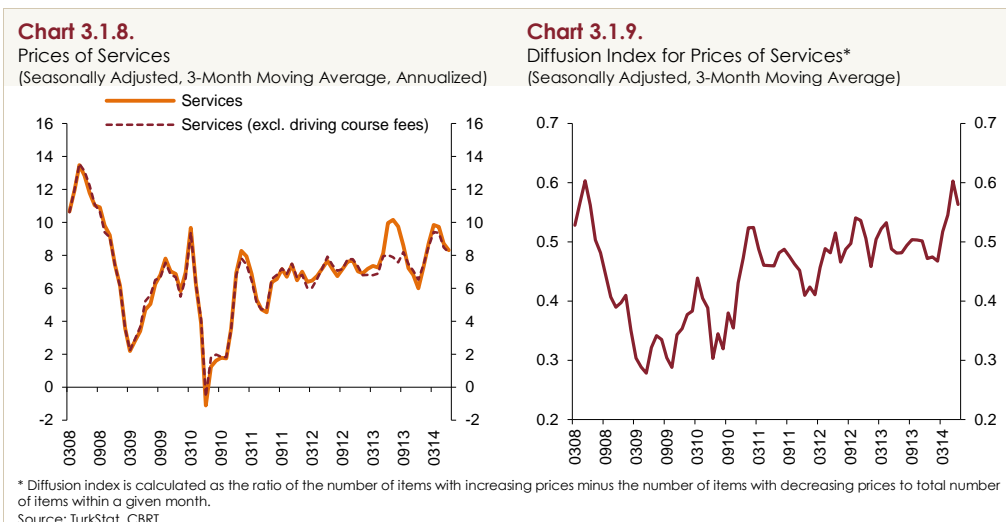


The recent uptrend in services prices is largely driven by cost factors. Rising food prices has a negative impact on consumer inflation, directly through food items consumed by households and indirectly through the use of food as an input in services items. In fact, inflation in catering services, which accounts for 90 percent of the restaurants and hotels group, surged by about 4.5 points in the

past three quarters amid rising food prices, the key input for the sector (Chart 3.1.6). Meanwhile, prices of other services have been affected negatively by the lagged effects of the Turkish lira depreciation through channels such as foreign currency quoted prices (package tours, etc.) and use of imported inputs (maintenance and repair services) (Chart 3.1.7). In addition to the rise in these cost factors, soaring inflation expectations also affected the outlook for services prices. Services inflation is expected to slow over the medium run, particularly in subcategories of restaurants and hotels and other services, once food prices normalize and exchange rate related effects wear off.

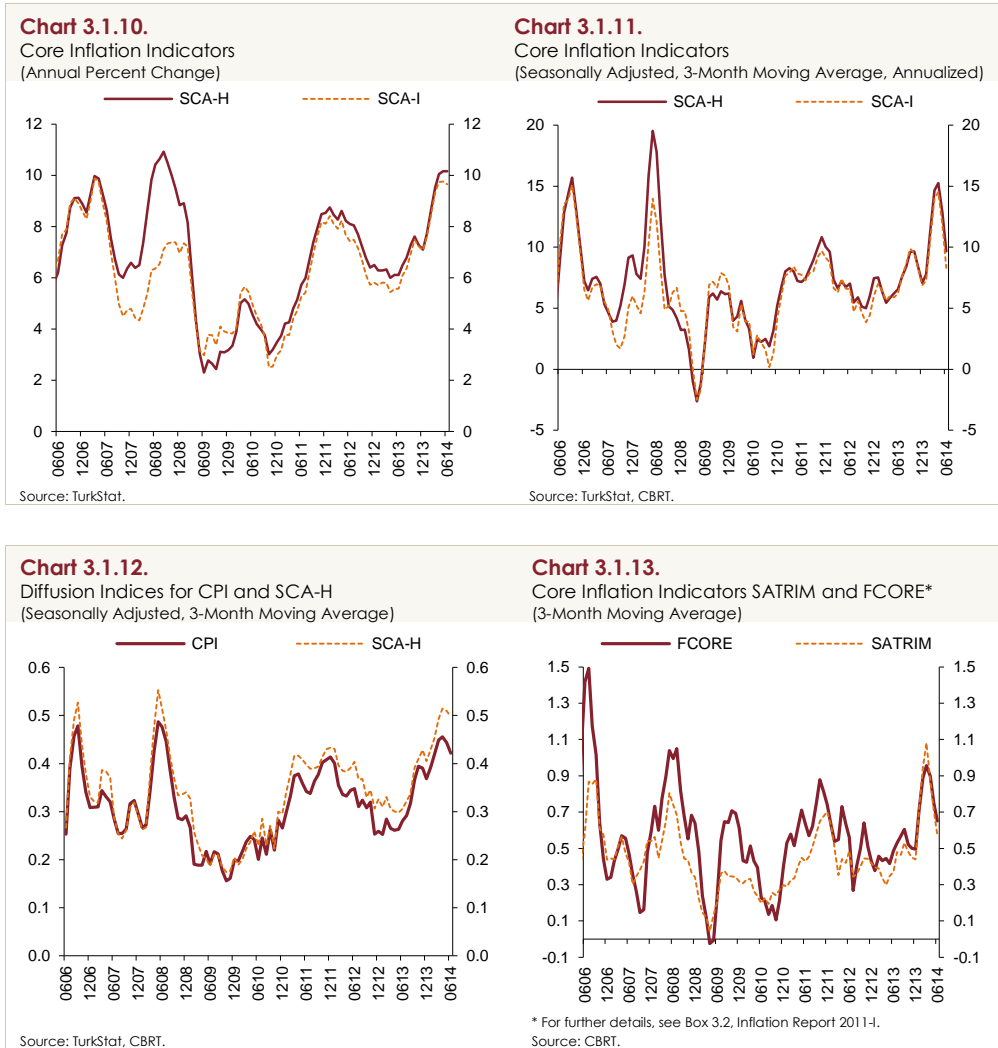


Indicators regarding the underlying trend and pricing behavior of the services sector showed some improvement in the second quarter. According to seasonally adjusted data, the underlying trend of services inflation slowed but remained relatively high (Chart 3.1.8). The diffusion index of services prices fell slightly from its elevated levels (Chart 3.1.9).



In line with this outlook in core goods and services, annual inflation in SCA-H and SCA-I displayed a marginal increase in the second quarter (Chart 3.1.10). However, after the impact of the Turkish lira depreciation on inflation peaked, the rise in core inflation indicators halted in this quarter. A joint analysis of the seasonally adjusted underlying trend of SCA-H and SCA-I, the alternative core inflation

indicators monitored by the CBRT, and diffusion indices suggest that the underlying trend of inflation declined quarter-on-quarter in the second quarter (Charts 3.1.11, 3.1.12 and 3.1.13). Although the current levels of these indicators are still high, their second-quarter performance point to some improvement in the first quarter's pricing behavior deterioration.

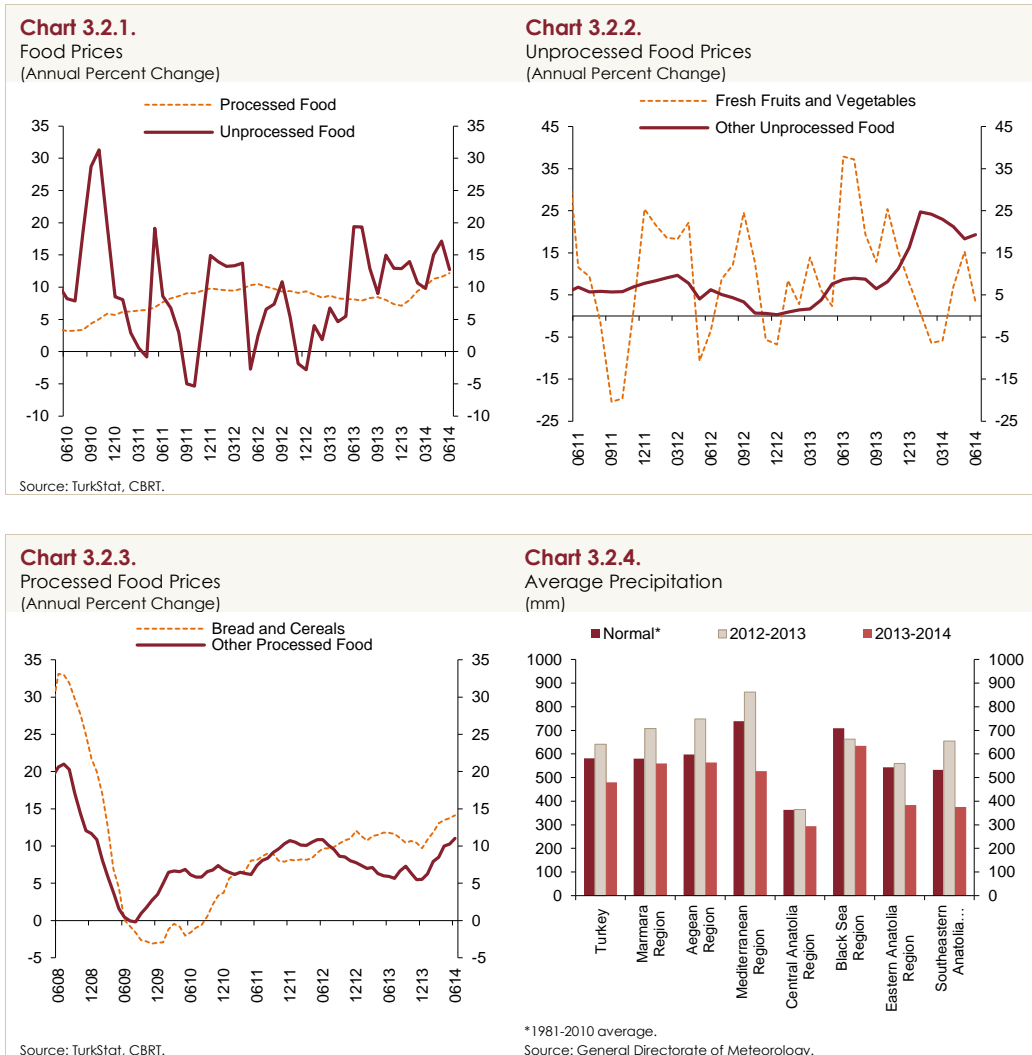


3.2. Food, Energy and Alcohol-Tobacco Prices

Annual food inflation increased to 12.47 percent in the second quarter, remaining above the April Inflation Report assumptions. Driven by prices of fresh fruits and vegetables and processed food, this increase was mainly attributed to supply shocks associated with below-average precipitation and frost as well as to lagged effects of the Turkish lira depreciation. Thus, the index recorded its highest second-quarter price change.

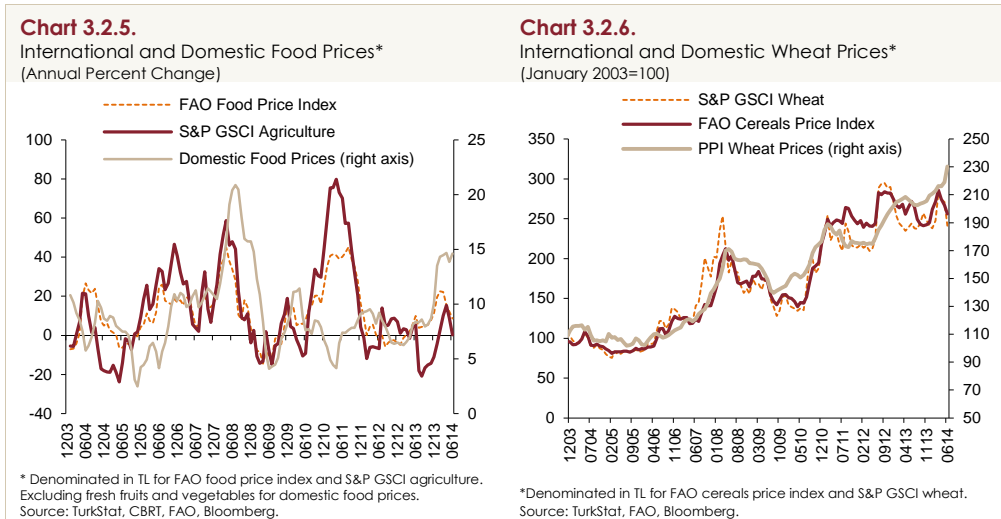
Annual unprocessed food inflation soared by 2.93 points quarter-on-quarter to 12.75 percent due to prices of fresh fruits and vegetables that displayed the smallest quarterly decline in recent years (Chart 3.2.1). Fruit prices, in particular, increased at a rate above historical averages in this period, mostly due to the hail and frost that occurred in late March. Meanwhile, other unprocessed food prices

moderated in this quarter after the negative first-quarter outlook (Chart 3.2.2). Processed food prices, on the other hand, rose by a substantial 2.82 percent in the second quarter, bringing the annual inflation in this category to 12.21 percent (Table 3.1.1 and Chart 3.2.1). This increase was driven by price hikes that dominated the whole category (Chart 3.2.3). The effects of the drought that became more pronounced with precipitations below seasonal norms reduced slightly upon the above-seasonal precipitations in May and June, but cumulative effects keep processed food prices on the rise (Chart 3.2.4).



Food prices are broadly in line with international prices. Except for the 2010-2011 period, the annual rate of increase in exchange-rate-adjusted international food prices and the domestic food inflation display a similar course (Chart 3.2.5). However, in 2014, domestic food prices have been increasing at a much faster rate than international prices. In particular, international food prices fell in the second quarter, while domestic food prices showed no such decline. This divergence mostly reflects the negative supply shocks in domestic production. Especially domestic wheat prices have been on a rising trend over the past year, contrary to international prices. (Chart 3.2.6). After climbing in the first quarter, international wheat prices fell by the same margin in the second quarter, whereas

domestic wheat prices continued to rise in the second quarter. In addition to wheat, prices of rice, legumes, dried fruits and nuts, processed meat products, cheese and dairy products have also increased remarkably over the past year. Thus, adopting external trade measures that would boost the domestic supply and balance the prices of major food staples such as rice, corn, lentils, and, especially wheat may be influential on the future course of food price inflation. Currently, domestic prices of staple foods are well above their international counterparts (Table 3.2.1).¹

**Table 3.2.1.**Domestic and International Food Prices
(USD/Ton)

	Domestic Market Price (USD)	International Export Prices (USD)			Customs Duty (Percent)	
Wheat	Anatolian Red Hard 400	USA HRW (USA Gulf) 291	USA SRW (Fob Gulf) 232	USA DNS (Fob PNW %14) 316	130	
Barley	327	EU (France) 225	Ukraine (forage) 219	France (malting) 269	130	
Corn	368	USA 3YC (USA Gulf) 190	Argentina (Up River) 188	Ukraine 194	130	
Rice	Osmancik/Baldo 1360 / 1844	USA Long Grain 569	Thailand 428	USA Calrose Medium Grain 1050	Vietnam 415	34
Red Lentil	Mersin (seed) 1123	Canada 749	USA 595			19.3

Source: Turkish Minister of Economy, Turkish Grain Board, Daily Market and Commodity Exchange Prices Bulletin on July 15, 2014 available at http://www.tmo.gov.tr/Uload/Document/piyasabulteni/piyasabulteni_tr.pdf.

Energy prices affected consumer inflation positively in the second quarter, falling by 1.12 percent (Table 3.1.1 and Chart 3.1). In this period, the Turkish lira began to gain strength after the sharp depreciation in the first quarter, while average oil prices surged by about 4.5 USD quarter-on-quarter because of the increased geopolitical uncertainty. Due to the Turkish lira appreciation and the price ceiling imposed by the EMRA, fuel prices declined by 3.32 percent while prices of home utilities remained flat. Hence, annual energy inflation fell by 0.21 points to 4.25 percent in the second quarter and remained moderate relative to other subcategories. Both the cumulative effects of past

¹ The Turkish Grain Board was recently allowed to import certain products free of customs duty for a temporary period and amount. See <http://www.resmigazete.gov.tr/eskiler/2014/04/20140419-7-1.pdf>.

depreciations in the Turkish lira and drought-related factors pose an upside risk to administered energy items, such as electricity and natural gas, in the home utilities category for the upcoming period.

After soaring due to the first-quarter's SCT rate hike, prices of alcoholic beverages and tobacco products remained virtually unchanged in the second quarter.

3.3. Domestic Producer Prices

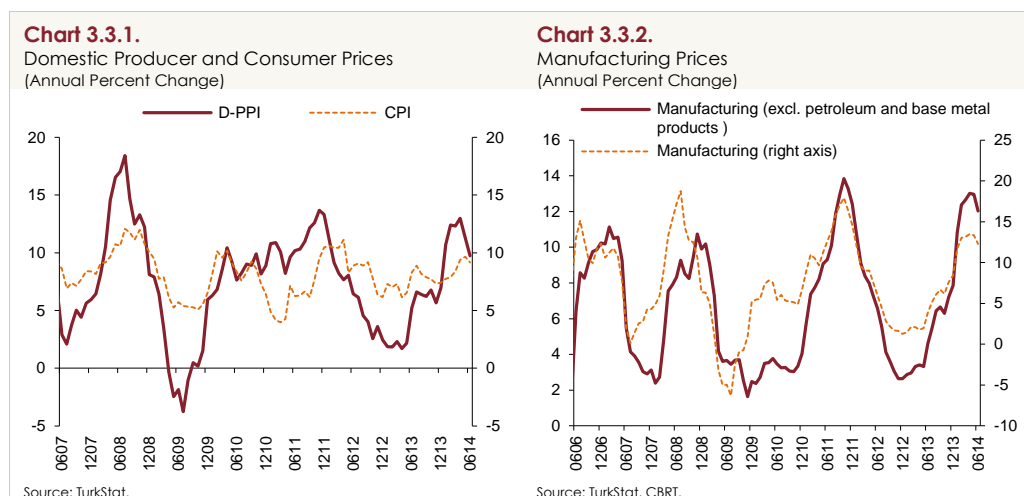
In the second quarter of 2014, domestic producer prices (D-PPI) decreased by 0.38 percent amid the moderate course of manufacturing prices (Table 3.3.1). Thus, annual D-PPI inflation decreased by 2.57 points quarter-on-quarter to 9.75 percent (Chart 3.3.1).

Table 3.3.1.
D-PPI and Subcategories
(Quarterly and Annual Percent Change)

	2013				2014	
	II	III	IV	Annual	I	II
D-PPI	1.95	1.93	2.43	6.97	5.52	-0.38
Mining	2.12	4.60	1.49	12.64	4.91	-1.77
Manufacturing	0.88	3.97	1.50	8.45	6.29	0.11
Manufacturing (excl. petroleum products)	1.03	3.45	1.57	8.00	6.26	0.26
Manufacturing (excl. petroleum and base metal products)	1.10	3.17	1.63	7.85	6.27	0.55
Electricity and Gas	1.44	0.75	0.11	-11.16	-1.17	-4.85
Water	1.50	1.29	2.28	10.77	3.66	2.29
D-PPI by Main Industry Groups						
Intermediate Goods	1.12	4.21	1.65	8.88	5.99	-0.57
Capital Goods	2.02	4.66	1.09	11.42	6.78	-1.04
Durable Goods	-1.54	3.22	-0.15	0.51	8.47	-1.18
Nondurable Goods	1.42	2.39	2.23	8.24	5.79	2.18

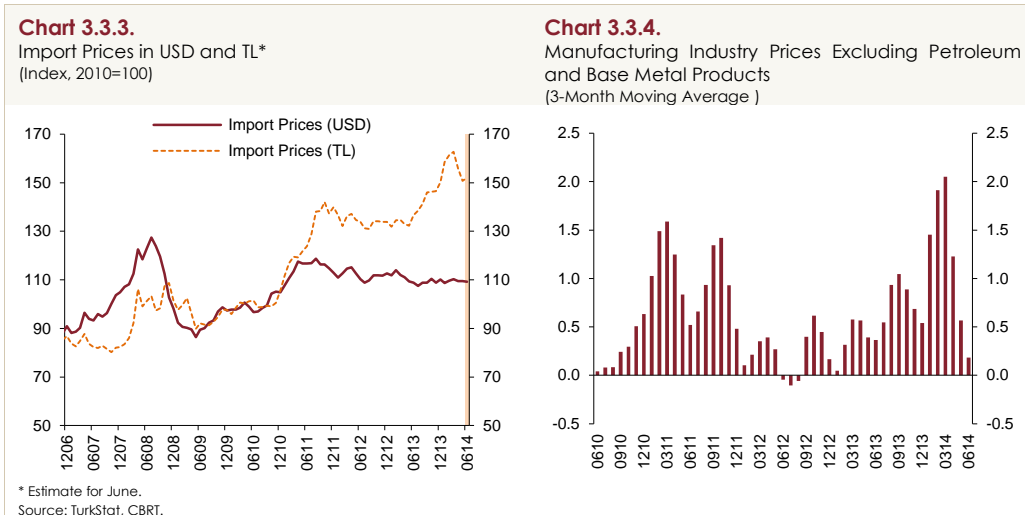
Source: TurkStat, CBRT.

With the appreciation of the Turkish lira, manufacturing industry prices flattened in the second quarter of the year (Table 3.3.1 and Chart 3.3.2). Across subcategories, producer prices for food, furniture and wood products increased, whereas producer prices for base metals, apparel, machinery and chemicals decreased. In this period, USD-denominated import prices remained mild, while TL-denominated import prices declined (Chart 3.3.3).



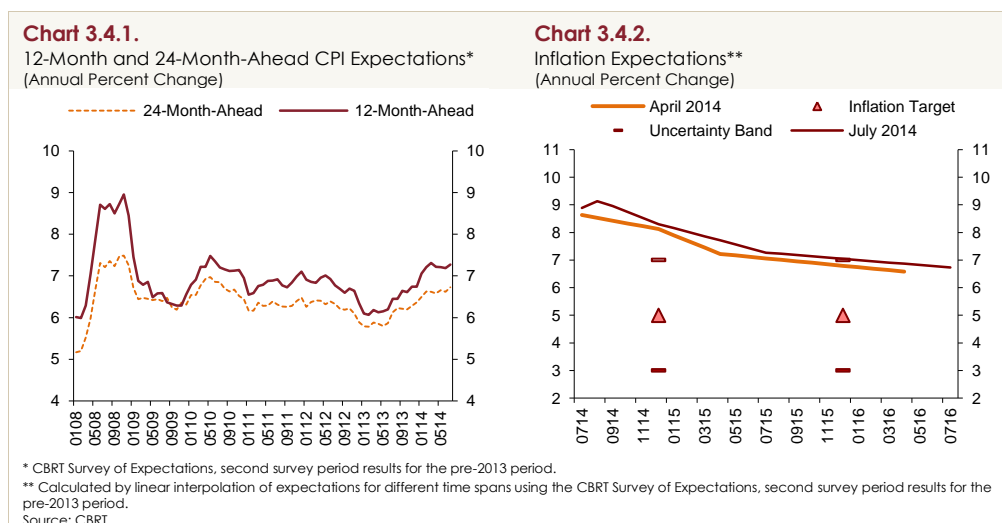
The uptrend in the manufacturing industry excluding petroleum products and base metal prices that entail information on the underlying trend of producer prices ended in this quarter (Chart 3.3.4).

Manufacturing industry prices for intermediate, capital and durable goods fell in the second quarter, with nondurable goods being the only subcategory recording a rise by 2.18 percent (Table 3.3.1). This rise was driven by food manufacturing prices that also reflected on consumer prices. However, the moderate course of manufacturing prices is expected to have a positive effect on consumer prices, particularly through core goods, in the upcoming period. Overall, the second-quarter outlook for producer prices indicated that cost-side pressures on consumer prices have subsided in all sectors but food.

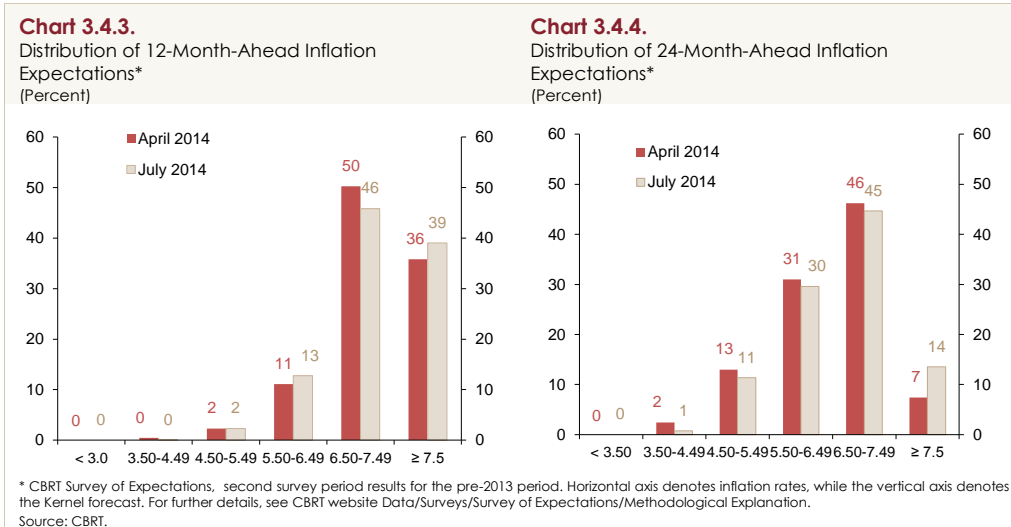


3.4. Expectations

After rising in the first quarter of 2014 on unfavorable food prices and the lagged effects of exchange rates, inflation expectations remained broadly unchanged in the second quarter (Chart 3.4.1). As of July, 12-month and 24-month-ahead inflation expectations are 7.3 and 6.7 percent, respectively. Across maturities, expectations are revised upwards from the April Inflation Report, with longer-term expectations increasing by a smaller margin (Chart 3.4.2). Currently, inflation expectations hover above the 5 percent target set for end-2014 and end-2015.



The dispersion of medium-term inflation expectations reveals a slight deterioration in inflation expectations in July compared to the first quarter (Charts 3.4.3 and 3.4.4). The percentage of respondents expecting 24-month-ahead inflation to be 7.5 percent and above, which was 7 percent in April, increased to 14 percent in July.



Box
3.1

The Sensitivity of Inflation to Business Cycles in Turkey

The relationship between business cycles and inflation is a key question that monetary policy tries to answer. The capability of economic activity to affect inflation is a critical parameter that determines the magnitude of the monetary policy reaction. The sensitivity of inflation to business cycles has recently weakened across the world, particularly in emerging economies; in other words, the fact that the Phillips curve has flattened is frequently being addressed in academic debates. This observation is mostly backed by factors such as increased globalization, the reduced unit labor costs in emerging economies, particularly China, and the strengthened credibility of central banks by adopting inflation targeting.

The growth-inflation relationship may not only differ by periods due to changing conditions, but also by subcategories of price indices (consumer price index, etc.) that are heterogeneous in composition. In this context, Froehling and Lommatzsch (2011) analyzed the correlation between sub-indices and output gap for Euro Area countries. In light of the Phillips curve equations estimated for each subcategory, a new index was constructed by output-gap-responsive subcategories. The authors conclude that this index was much more responsive to business cycles than typical core inflation indices.

This box briefly discusses the results of a recent study that is based on a similar approach to answer the question of how much of the consumer inflation can be controlled in Turkey through the traditional demand channel.² The study estimates alternative Phillips curves for 152 subgroups by using COICOP 5-digit CPI data for the 2004-2014 period:

$$\pi_t = c + \alpha\pi_{t-1} + \beta\text{gap}_{t-i} + \gamma_k \sum_{k=0}^K \text{control}_{1,t-k} + \delta_j \sum_{j=0}^J \text{control}_{2,t-j} + \varepsilon_t$$

In the equation, π_t stands for inflation, gap stands for output gap, control_1 and control_2 variables stand for the control elements, which are TL-denominated import prices and wages that are exogenously added; ε_t stands for the error term. This equation determines product groups whose output gap coefficients are statistically significant and economically reasonable (larger than zero), allowing consumer inflation to be divided into two sub-indices as responsive and unresponsive to the output gap.

The analysis has shown that 35 sub-indices of goods and services that make up around 30 percent of the CPI in Turkey are affected by the output gap. Accordingly, these groups consist mostly of sub-items of services, while some items included in the processed food and energy groups are also responsive to business cycles (Table 1).

² For further details, see Atuk et al. (2014).

Table 1. Sub-Indices of Goods and Services Responsive to the Output Gap

Core Goods

1. Washing machines, dryers, dishwashers
2. TVs and video recorders
3. A/C, heaters and humidifiers
4. Small appliances
5. Tools, gardening tools and other misc. accessories
6. Spare parts and accessories for personal transportation vehicles
7. Women's shoes
8. Materials for home maintenance and repair
9. Household cleaning products

Services

10. Urban transportation by bus
11. Urban transportation by taxi
12. Intercity road transportation
13. Marine and inland waterway transportation
14. Other purchased transport services
15. Catering services
16. Beverage services
17. Hotels and inns
18. Other accommodation services

19. Women's hair salons, etc.
20. Social services
21. House insurance
22. Dry-cleaning, mending, making and renting clothes
23. Repairing and renting shoes
24. Real rent paid by a tenant living in an apartment building
25. Repair of home appliances
26. In-house services
27. Washing and dry-cleaning of household furniture

Food

28. Flour and other grains
29. Bread
30. Pasta products
31. Margarine
32. Other oils and fats
33. Jams, marmalades and honey
34. Water and mineral water

Energy

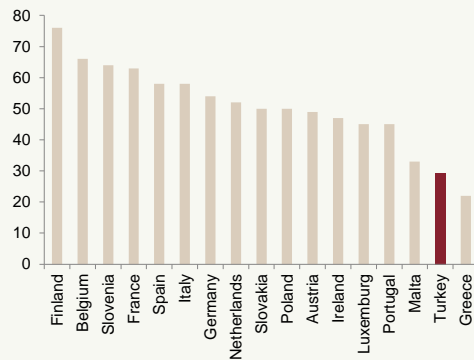
35. Solid fuels

Source: Authors' calculations.

By an international comparison, more than half of the overall price index is responsive to the output gap in many EU countries. Froehling and Lommatzsch (2011) show that about 56 percent of the price index is responsive to the output gap in 16 Euro Area countries, while Halka and Kotlowski (2013) show that 50 percent of the price index is affected by the output gap in Poland. Therefore, these findings reveal that policies that are based on demand management have less effect on inflation in Turkey compared to EU countries (Chart 1).

The analysis for Turkey introduces a new index by using the CPI weights of the output-gap-responsive series. The remaining products, excluding fresh fruits and vegetables and alcohol-tobacco items, which are beyond the control of monetary policy, are used to produce another price index that is unresponsive to the output gap. Accordingly, consumer inflation has differed markedly between the output-gap-responsive and output-gap-unresponsive groups until recent years. Moreover, the inflation range is much wider in the output-gap-responsive group (highest: 20 percent, lowest: 0 percent) while it is only between 4-11 percent in the other group (Chart 2).³

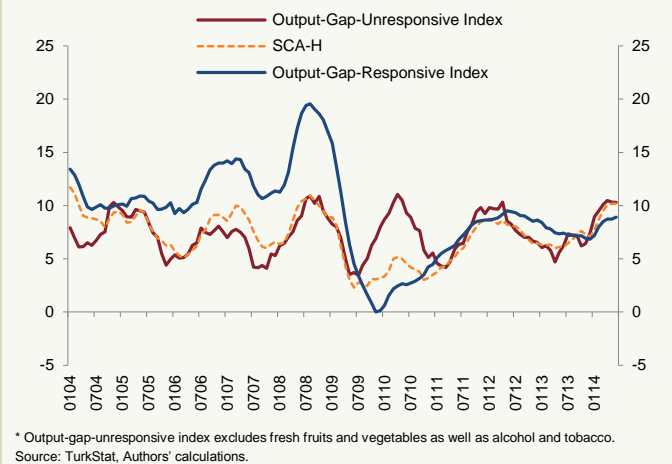
Chart 1. Share of Output-Gap-Responsive Sub-Indices in CPI by Countries* (Percent)



* The consumer basket may vary by countries. More specifically, the fact that food prices have a high share while technological products have a low share in CPI may weaken the sensitivity of general price index to output gap in an emerging economy. Source: Authors' calculations for Turkey, Halka and Kotlowski (2013) for Poland, Froehling and Lommatzsch (2011) for others.

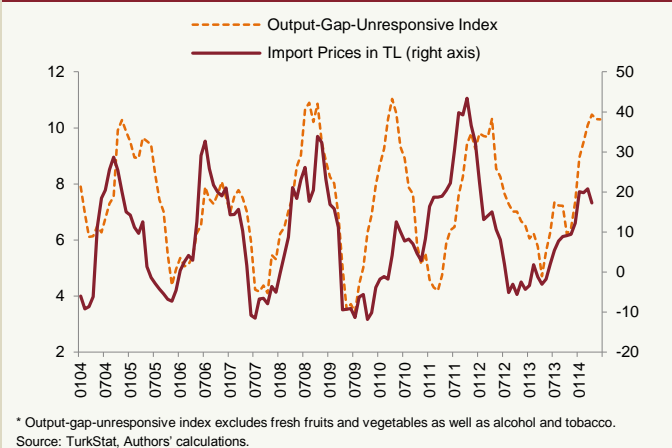
³ Since the rate of inflation in the output-gap-responsive group is not solely determined by business cycles, inflation may differ from what is implied by the domestic activity. For example, the robust economic activity and the outstanding increase in international prices of some products (such as food) caused the group's inflation to soar as high as 20 percent right before the global crisis.

Chart 2. Output-Gap-Responsive and Unresponsive Price Indices and SCA-H* (Annual Percent Change)



In the output-gap-unresponsive group, which accounts for about 60 percent of the CPI, import costs are very influential, and thus, import prices and the exchange rate channel have a more dominant role in inflation dynamics (Chart 3). Hence, the CBRT closely monitors exchange rate developments and emphasizes cyclical and structural policies that would provide exchange rate stability.

Chart 3. Output-Gap-Unresponsive Price Indices and Import Costs* (Annual Percent Change)



Monitoring the course of inflation through these two indices, which have different dynamics, helps to understand the causal relationship between policy variables (interest rate, exchange rate, etc.) and the target variable, and therefore, determines which monetary policy tools are needed to what extent in order to control inflation. Moreover, in addition to the monetary policy, the effects of fiscal policy practices (public spending, incomes policy, etc.) can also be monitored and measured in the price index responsive to cycles. Hence, one can conclude that the content of information these indices entail is different from core inflation indices constructed by conventional exclusion methods.

For example, the SCA-H index is closely correlated with the output-gap-unresponsive price index, which largely reflects the effects of import costs. Yet, this correlation weakens considerably between 2009 and 2010 due to the negative impact of the global crisis on domestic activity (Chart 2). This weakening can easily be explained by the output-gap-responsive and output-gap-unresponsive price indices breakdown. Hence, decomposing the price index in this manner helps to understand the source of changes in the underlying trend of inflation.

In sum, empirical findings show that around 30 percent of the consumer basket is affected by business cycles in Turkey. This suggests that counter-cyclical policies alone may not suffice to maintain price stability. Therefore, maintaining financial stability and lowering import dependence emerge as key factors to decrease the exchange rate pass-through, while implementing goods and labor market reforms to reduce wage rigidity and to increase productivity are policy priorities that would mitigate the inflation inertia.

REFERENCES

- Atuk, O., C. Aysoy, U. Özmen and Ç. Sarıkaya, 2014, The Sensitivity of Inflation to Business Cycles in Turkey, forthcoming CBRT Working Paper.
- Froehling, A. and K. Lommatzsch, 2011, Output Sensitivity of Inflation in the Euro Area: Indirect Evidence from Disaggregated Consumer Prices, Deutsche Bundesbank Economic Studies No. 25/2011.
- Halka, A. and J. Kotłowski, 2013, Does Domestic Output Gap Matter for Inflation in a Small Open Economy, National Bank of Poland Working Paper No. 152.