

## 3. Inflation Developments

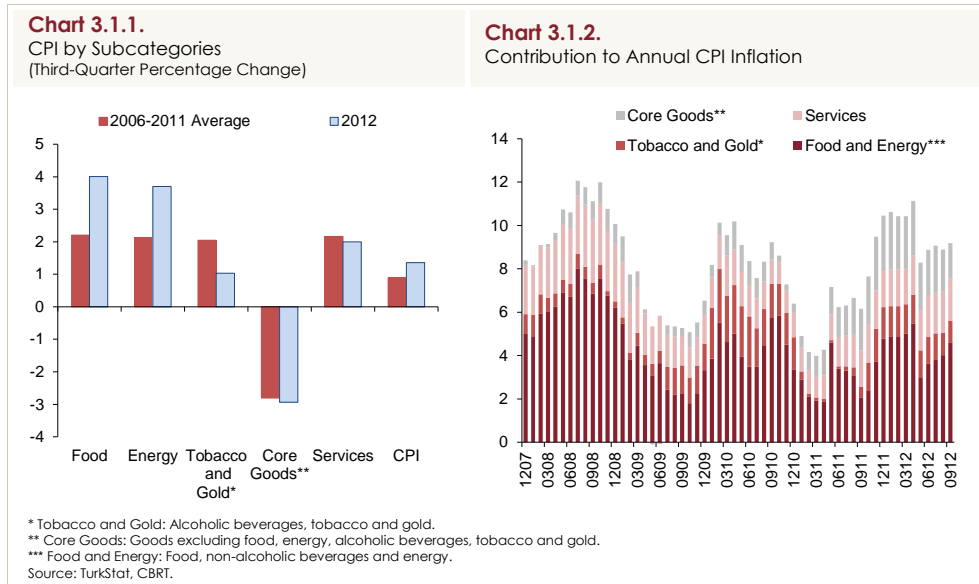
### 3.1. Inflation

On account of the surge in unprocessed food prices beyond seasonal averages as well as the higher-than-envisaged increase in international oil prices, annual consumer inflation increased by 0.32 percentage points to 9.19 percent in the third quarter of 2012. In this period, core inflation continued to decelerate in annualized terms, while services inflation remained unchanged. Sluggish economic activity favorably affected the inflation outlook in this period, while cost-side pressures fuelled by manufacturing industry prices were alleviated, thus causing core inflation indicators to trend downwards. On 22 September 2012, the SCT imposed on fuel oil, automobile and alcoholic beverages was raised as per the additional fiscal measures adopted due to budget developments. Adverse effects of the said decisions on inflation were reflected on third-quarter figures, albeit partially (Box 3.1). Thus, by the end of the third quarter, inflation went above the projections laid down in the July Inflation Report mainly on price increases in unprocessed food and energy besides adjustments to administered prices.

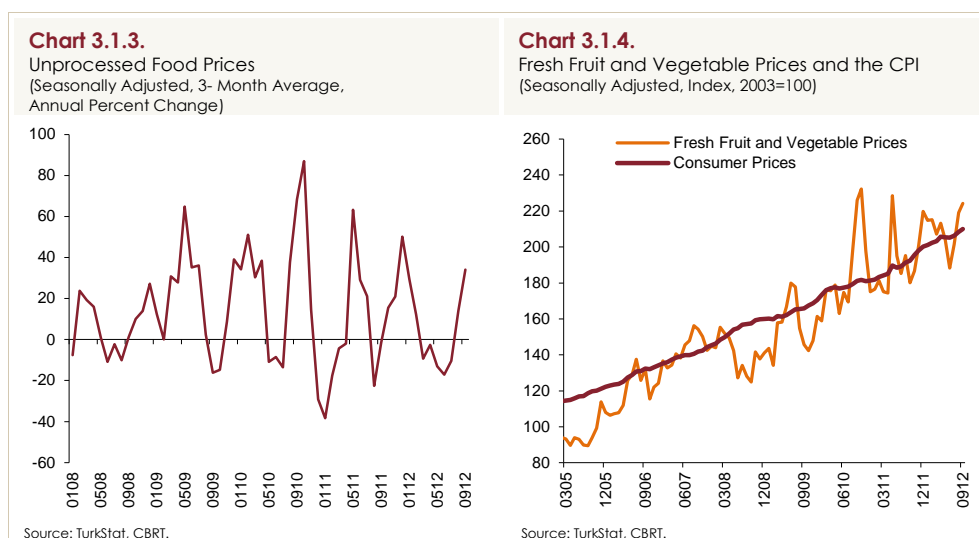
Across subcategories, the rate of price increases in unprocessed food and energy exceeded previous year averages in the third quarter of 2012 (Chart 3.1.1). Accordingly, the contribution of the food prices to inflation rose by a quarter-on-quarter 0.75 percentage points. Meanwhile, the contribution of energy prices went up by 0.24 percentage points upon SCT rate adjustments (Chart 3.1.2). Contribution of the core goods prices declined by 0.48 percentage points in tandem with the sluggish economic outlook, while the contribution of the services prices remained virtually unchanged.

In sum, the course of inflation in the third quarter was mainly determined by developments in unprocessed food and energy prices. It was stated in the July Inflation Report that unprocessed food prices had followed a mild course during the first half of the year, but forecasts were based upon a cautious approach assuming that this favorable outlook would be reversed in the second half. In fact, the price realizations in unprocessed food confirmed this assumption. On the other hand, energy prices hovered above projections. Owing to tax rate hikes and adjustments to administered energy prices, energy inflation is estimated to maintain a negative outlook in the rest of the year. On

the other hand, core inflation is expected to decline further, while annual inflation in food as well as alcoholic beverages and tobacco is envisioned to fall markedly in the last quarter.

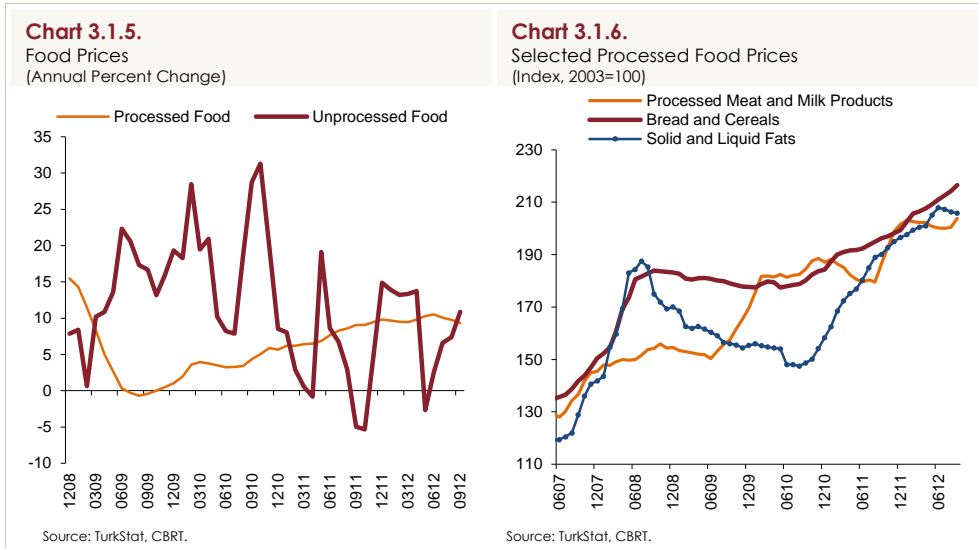


The downtrend in unprocessed food prices in the first half of the year was reversed as of July (Chart 3.1.3). The upward course of seasonally adjusted unprocessed food prices in this period was driven by the increases in fresh fruit and vegetable prices, which exceeded the headline inflation (Chart 3.1.4). Accordingly, annual inflation in unprocessed food prices reached 10.85 percent at the end of the third quarter, thus overshooting the July Inflation Report forecasts (Chart 3.1.5). However, increases in the third quarter were offset by falling prices in the first half, which overall led unprocessed food prices to follow a more favorable course in the current year compared to past years. Similarly, unprocessed food products other than fresh fruit and vegetables also recorded a relatively mild upward trend compared to past years. Accordingly, the annual rate of increase in unprocessed food prices is projected to plummet in the last quarter.



Prices of processed food posted a lower increase than historical averages in the third quarter by 1.92 percent, thus causing processed food inflation to slightly lose pace in annualized terms (Table 3.1.1 and Chart 3.1.5). Meanwhile, the prices of bread and cereals continued to trend upward in this quarter (Chart 3.1.6). In particular, on account of the arrangements on weight laid down in the Communique of Bread and Varieties of the Turkish Food Codex, bread prices increased by 11.5 percent across the year. Furthermore, wheat prices have also trended upwards as of June and domestic wheat prices rose by 10.1 percent in the last four months. Despite the pause in soaring of international wheat prices, the already-reached high level of prices keeps upside risks on processed food prices brisk for the forthcoming period. Despite the accelerated rate of increase in processed food prices in September, annual inflation is expected to continue to fall, albeit slightly, on account of the high base effect.

As a result, annual food inflation rose approximately by 3 percentage points to 10.39 percent in this quarter on price developments in unprocessed food, and stood slightly above the projections presented in the July Inflation Report.

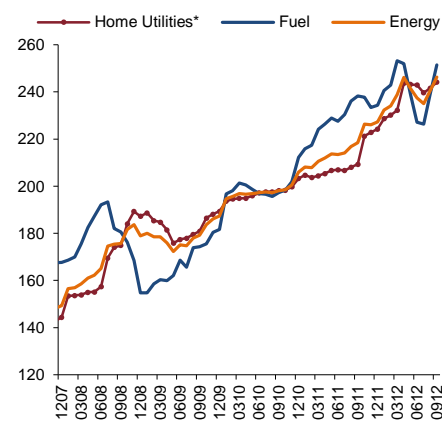


Energy prices rose by 3.70 percent in the third quarter (Table 3.1.1), which was marked by the surge in fuel oil prices by 10.68 percent amid the quarter-on-quarter rise in international oil prices (Chart 3.1.7). Similarly, bottled gas prices also soared in this period, while water prices went down. In sum, annual energy inflation registered a quarterly increase by 1.5 percentage points and hit 12.71 percent. Tax arrangements and administered price adjustments were effective on the course of energy prices towards the end of the quarter. In fact, SCT rates on fuel oil were increased as of September 22, and electricity and natural gas tariffs were raised by nearly 10 percent starting from October 1. These price adjustments are estimated to contribute approximately by 0.8 percentage points to annual inflation in October. Accordingly, the contribution of energy prices to annual inflation, which reached 1.89 percentage points in the third quarter, will rise further in the last quarter. Moreover, sharp increases in energy prices will add to cost-side pressures on firms, thus causing upside risks on consumer prices through secondary effects.

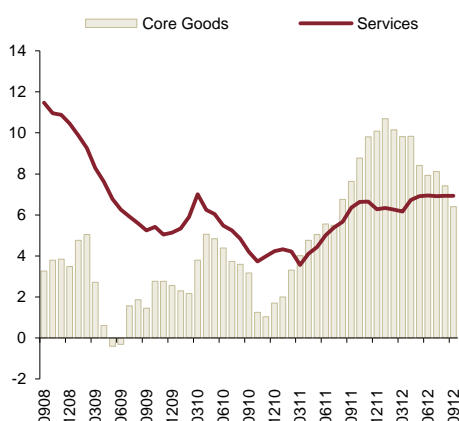
**Table 3.1.1.**Prices of Goods and Services  
(Quarterly and Annual Percent Change)

	2011					2012		
	I	II	III	IV	Annual	I	II	III
<b>CPI</b>	<b>1.57</b>	<b>1.83</b>	<b>1.07</b>	<b>5.66</b>	<b>10.45</b>	<b>1.55</b>	<b>0.39</b>	<b>1.36</b>
<b>1. Goods</b>	<b>1.53</b>	<b>2.05</b>	<b>0.73</b>	<b>7.29</b>	<b>11.97</b>	<b>1.54</b>	<b>-0.19</b>	<b>1.12</b>
Energy	2.27	1.37	2.34	4.03	10.36	5.08	-0.57	3.70
Food and Non-Alcoholic Beverages	3.77	-2.46	1.18	9.57	12.21	2.89	-5.85	4.01
Unprocessed Food	5.08	-5.79	-1.00	17.23	14.89	3.66	-14.76	0.74
Processed Food	2.61	0.57	3.03	3.30	9.82	2.25	1.55	1.92
Goods (excl. energy and food)	-0.68	6.32	-0.36	6.93	12.51	-1.14	4.78	-2.24
Core Goods	-1.08	7.73	-1.55	4.92	10.09	-1.32	5.88	-2.93
Durable Goods (excl. gold)	4.26	1.85	3.69	1.90	12.19	1.41	-0.05	-0.69
Alcoholic Beverages, Tobacco and Gold	0.81	1.05	4.38	14.46	21.70	-0.33	-0.17	1.03
<b>2. Services</b>	<b>1.67</b>	<b>1.22</b>	<b>2.02</b>	<b>1.22</b>	<b>6.27</b>	<b>1.57</b>	<b>1.96</b>	<b>2.00</b>
Rent	1.08	0.99	1.35	1.21	4.71	0.89	1.27	1.59
Restaurants and Hotels	1.65	1.80	2.37	2.14	8.20	1.99	2.62	2.66
Transport	2.28	2.10	3.07	1.73	9.49	2.12	1.79	3.21
Communication	1.96	-1.71	0.35	0.47	1.04	0.06	2.07	1.79
Other Services*	1.61	2.14	2.56	0.65	7.12	2.24	2.00	1.27

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

**Chart 3.1.7.**Energy Prices  
(Index, 2003=100)

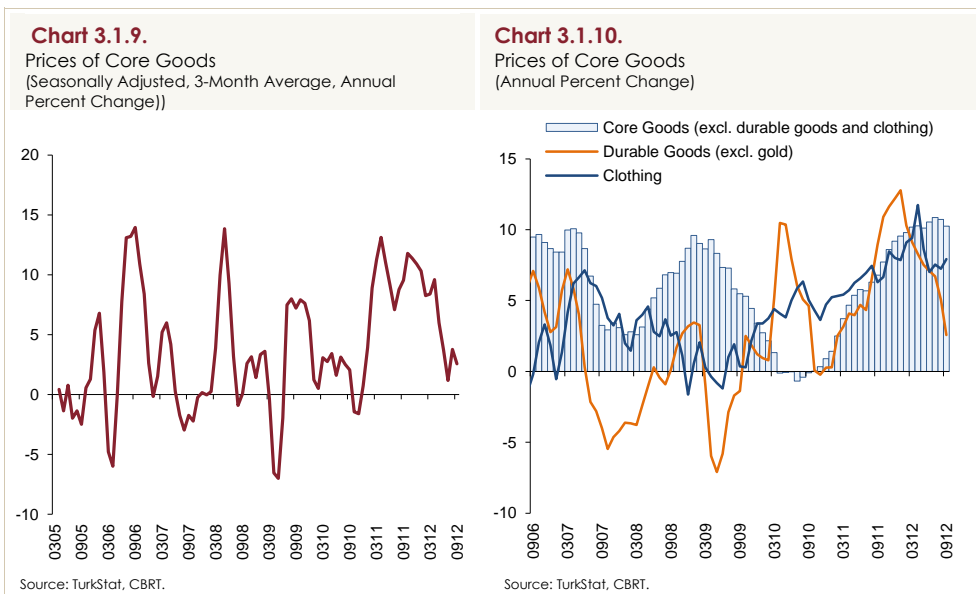
\* Home utilities include electricity, water, natural gas, bottled gas and solid fuel.  
Source: TurkStat, CBRT.

**Chart 3.1.8.**Prices of Core Goods and Services  
(Annual Percent Change)

Source: TurkStat, CBRT.

On account of the relatively mild course of TL-denominated import prices coupled with the slowdown in the economic activity, annual core inflation continued to trend downwards and went down to 6.41 percent as of the end of the third quarter (Chart 3.1.8). Given this outlook, seasonally adjusted core goods prices posted a relatively limited rise in the third quarter, thus maintaining a low pace of growth (Chart 3.1.9). Across subcategories, the annual inflation in durable goods recorded the most notable slowdown and dropped to 2.58 percent by the end of the quarter (Chart 3.1.10). The fall in durable goods

inflation was spread across all subcategories (Table 3.1.2). Annual inflation in clothing edged up in this quarter, while core inflation excluding clothing and durable goods lost pace (Table 3.1.2). In accordance with the fiscal measures adopted in September, the relative SCT rate for automobiles with engine volume up to 1600 cc was raised from 37 percent to 40 percent. Under the assumption that this tax rate hike will completely be reflected on consumer prices, automobile prices are expected to increase approximately by 1.94 percent, thus causing core inflation to go up by around 0.5 percentage points (Box 3.1). In this respect, the adopted fiscal measures bear the potential to adversely affect the core inflation indicators in the last quarter.



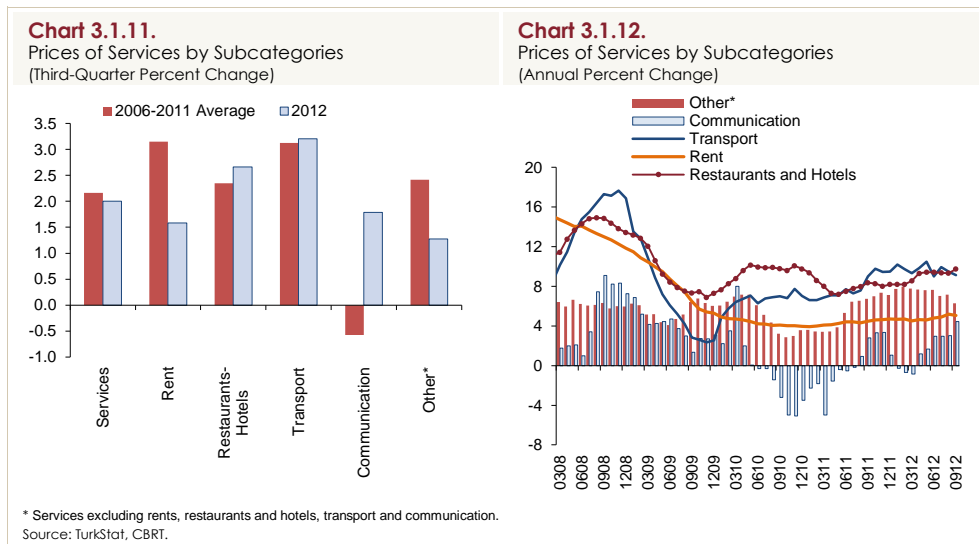
**Table 3.1.2.**  
Prices of Core Goods  
(Quarterly and Annual Percent Change)

	2011					2012		
	I	II	III	IV	Annual	I	II	III
<b>Core Goods</b>	-1.08	7.73	-1.55	4.92	10.09	-1.32	5.88	-2.93
<b>Clothing and Shoes</b>	-12.04	25.08	-12.13	11.72	8.01	-10.90	22.34	-11.37
<b>Durable Goods (excl. gold)</b>	4.26	1.85	3.69	1.90	12.19	1.41	-0.05	-0.69
Furniture	0.75	5.04	2.88	4.01	13.25	3.19	1.76	-0.58
Electrical and Non-Electrical Appliances	2.87	-1.26	0.34	3.29	5.27	0.94	-2.75	-0.65
Automobile	6.31	2.29	5.68	0.52	15.52	1.09	0.42	-0.82
Other Durable Goods	2.15	2.71	1.85	3.00	10.06	1.22	3.13	0.69
<b>Other</b>	1.82	2.09	1.54	3.44	9.18	2.76	2.42	1.28

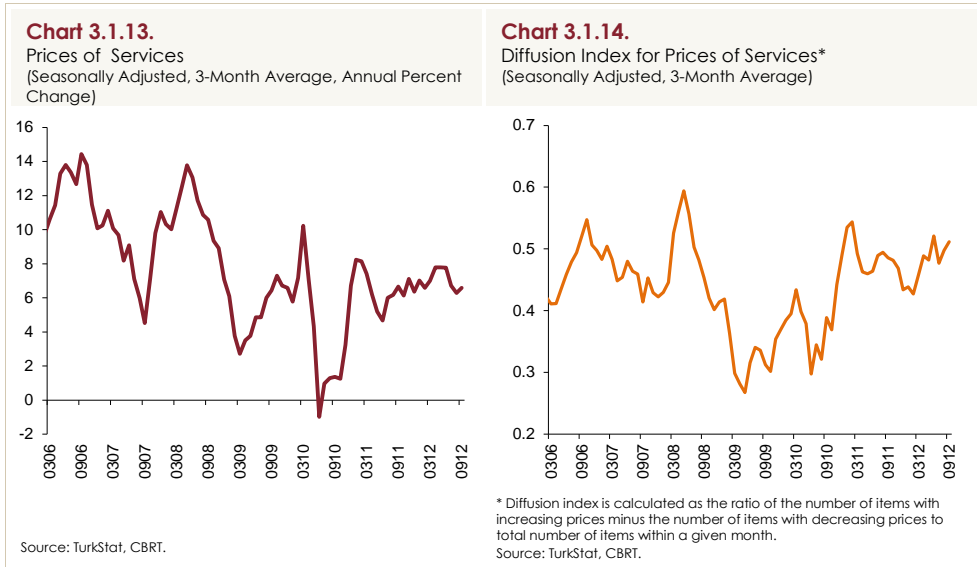
Source: TurkStat, CBRT.

Having remained unchanged on a quarterly basis, annual services inflation stood at 6.93 percent (Chart 3.1.8). Price increases in services were in tandem with the historical averages in this period and the decline in the prices of education services was influential on the course of services inflation

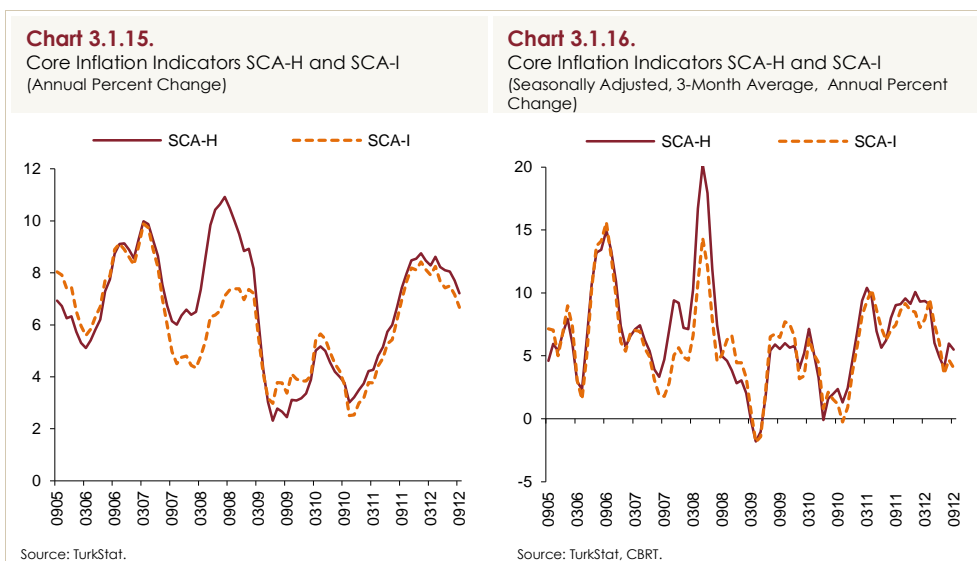
(Chart 3.1.11). Prices of education services, which saw seasonal increases in September, plummeted following the arrangements introduced to public university fees as per the Decision of the Board of Ministers that was published in the Official Gazette on August 29, 2012. Annual inflation in education services went down by 3.16 percentage points in September, curtailing the price increase in services in the third quarter. On account of the cumulative effects of the previous increases in fuel oil prices, inflation in transport services went up. Rent inflation continued to increase modestly, partly on the back of the recent rises in annual consumer inflation rate, and stood at the mild 5.05 percent at the end of the third quarter (Chart 3.1.12). Lastly, annual inflation in communication services went up in this quarter owing to the rise in communication fees in mobile phones. Meanwhile, inflation in entertainment services declined due to the base effect in package tour prices.



In brief, despite the high course of consumer inflation, services inflation followed a flat course maintaining its mild outlook. In this period, seasonally adjusted data indicated that the underlying trend of both services inflation and inflation in services excluding education remained unchanged (Chart 3.1.13). Meanwhile, the upward course of the services prices spread more heavily across the group relative to previous quarters (Chart 3.1.14).

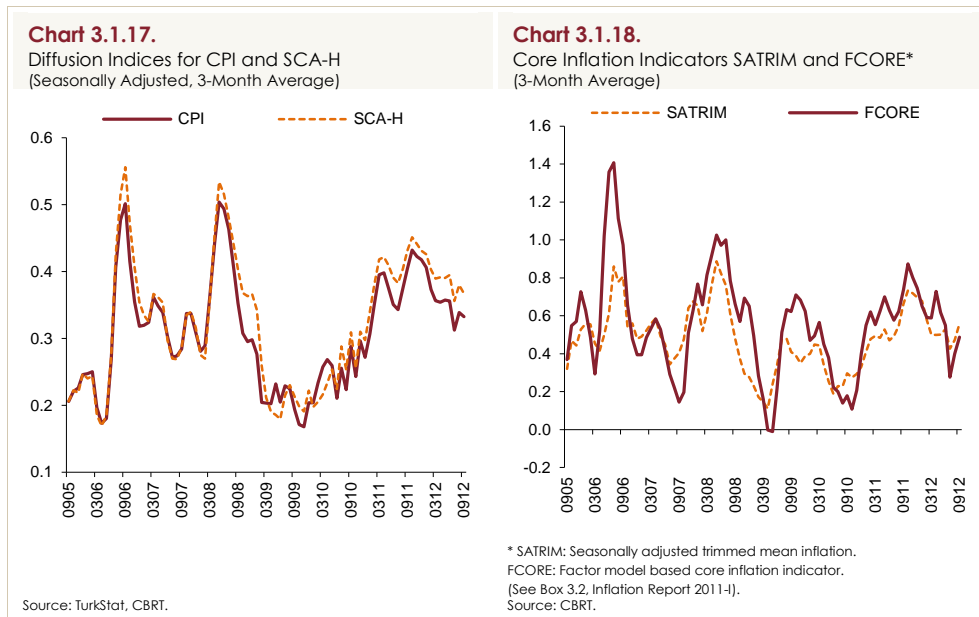


Annual inflation in core inflation indicators SCA-H and SCA-I went down to 7.2 and 6.68 percent, respectively in the third quarter (Chart 3.1.15). Amid the slowdown in core inflation, annual services inflation followed a flat course in this quarter. Seasonally adjusted data also indicate that the underlying trend has lost pace (Chart 3.1.16). Upon the change in weight scheme in clothing prices, the seasonal structure saw shifts, thus hampering the evaluation of seasonally adjusted trends within this year. Accordingly, an analysis of core inflation indicators excluding clothing prices reveals that the underlying trend implied by seasonally adjusted indicators followed a flat course during the quarter, albeit at lower figures.





Diffusion indices regarding CPI and SCA-H and SCA-I posted a quarter-on-quarter decline in the third quarter (Chart 3.1.17). However, diffusion indices still remain above historical averages. On the other hand, alternative core inflation indicators monitored by the CBRT point to a limited rise in the underlying trend of inflation (Chart 3.1.18). In sum, the joint analysis of core inflation indicators, diffusion indices and alternative core indicators shows that the underlying trend of inflation maintains its mild outlook.

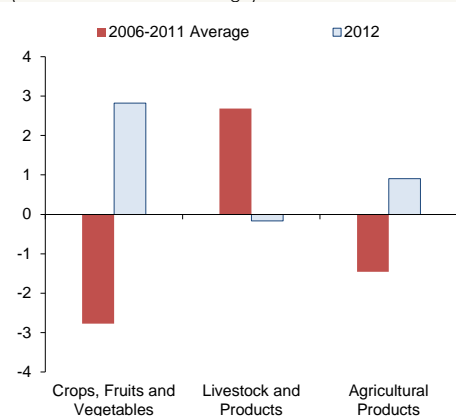


Producer prices went up by 0.97 percentage points in the third quarter, and annual inflation went down to 4.03 percent owing to manufacturing industry prices (Table 3.1.3). Agricultural prices, which were below historical averages in this period, registered increases owing to the prices of crops besides fresh fruit and vegetables (Chart 3.1.19). Parallel to international developments, particularly domestic wheat prices saw hikes in this quarter, giving way to cost-side pressures on the prices of bread and cereals. Furthermore, sunflower prices soared in the third quarter without affecting the consumer prices. Meanwhile, the prices of livestock and animal products declined further in this quarter, putting a cap on the rise in agricultural prices.

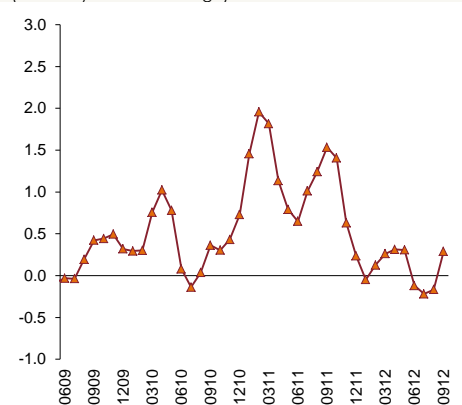
**Table 3.1.3.**PPI and Subcategories  
(Quarterly and Annual Percent Change)

	2011					2012		
	I	II	III	IV	Annual	I	II	III
<b>PPI</b>	<b>5.40</b>	<b>0.77</b>	<b>3.31</b>	<b>3.28</b>	<b>13.33</b>	<b>0.65</b>	<b>-0.89</b>	<b>0.97</b>
<b>Agriculture</b>	<b>5.84</b>	<b>-1.73</b>	<b>-6.03</b>	<b>13.09</b>	<b>10.53</b>	<b>1.65</b>	<b>-3.36</b>	<b>0.91</b>
Crops, Fruits and Vegetables	6.81	-2.67	-9.84	17.18	9.83	0.76	-3.75	2.82
Livestock and Animal Products	-1.26	-0.39	2.68	5.51	6.56	-0.28	-2.44	-0.16
<b>Industry</b>	<b>5.31</b>	<b>1.30</b>	<b>5.24</b>	<b>1.48</b>	<b>13.92</b>	<b>0.45</b>	<b>-0.37</b>	<b>0.98</b>
Mining	9.70	1.08	4.94	2.93	19.76	0.90	2.24	2.13
<b>Manufacturing</b>	<b>6.27</b>	<b>1.98</b>	<b>4.98</b>	<b>0.72</b>	<b>14.59</b>	<b>1.06</b>	<b>-0.83</b>	<b>1.22</b>
Manufacturing (excl. oil)	5.55	1.95	4.67	0.70	13.42	0.79	-0.36	0.87
Manufacturing (excl. oil and base metals)	4.85	1.53	4.12	1.39	12.38	0.93	-0.09	1.15
Electricity, Gas and Water	-4.08	-4.73	7.89	7.91	6.38	-4.64	2.57	-1.41

Source: TurkStat, CBRT.

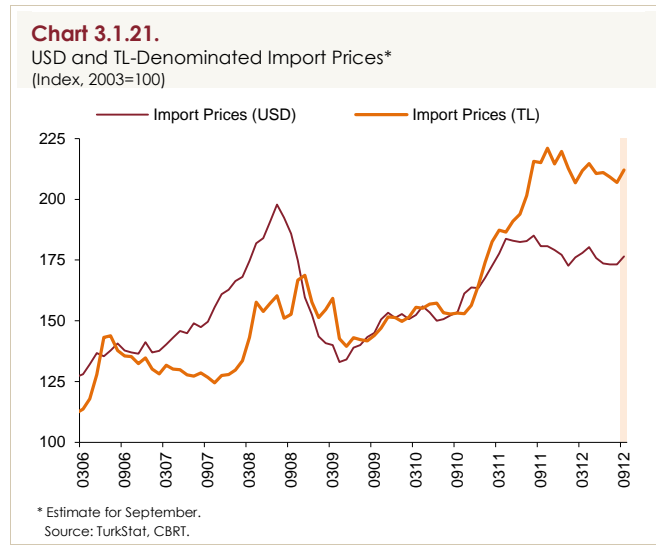
**Chart 3.1.19.**Agricultural Prices  
(Third-Quarter Percent Change)

Source: TurkStat.

**Chart 3.1.20.**Manufacturing Prices Excluding Oil  
(Quarterly Percent Change)

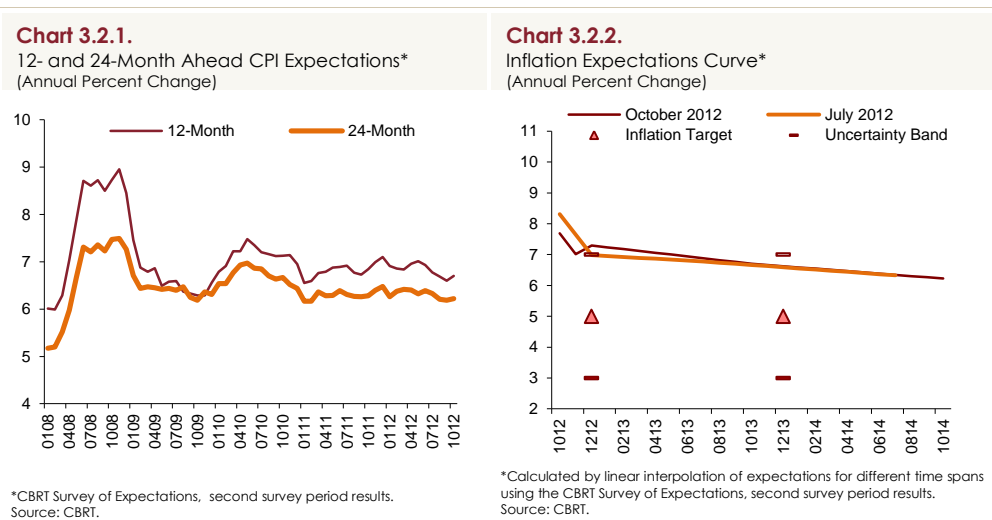
Source: TurkStat, CBRT.

Having tumbled in the second quarter, commodity prices soared on the rise in agricultural and energy prices in the third quarter. The Turkish lira, which followed a robust course in the previous quarter, remained modest in the third quarter. Thus, import prices, which went down in the second quarter, rose slightly in the third quarter, affecting both manufacturing and manufacturing prices excluding oil (Charts 3.1.20 and 3.1.21). In this quarter, manufacturing prices excluding oil rose by 0.87 percent, while in cumulative terms, manufacturing prices excluding oil increased by a mere 1.29 percent since the beginning of the year. Across subcategories, manufacturing industry prices, especially the prices of furniture, jewelry, food and textile went up in this quarter due to increases in producer prices of durable and non-durable goods. In sum, agricultural prices adversely affected food prices in the third quarter. On the other hand, manufacturing industry prices excluding oil edged up, indicating that cost-side pressures on consumer prices were alleviated.

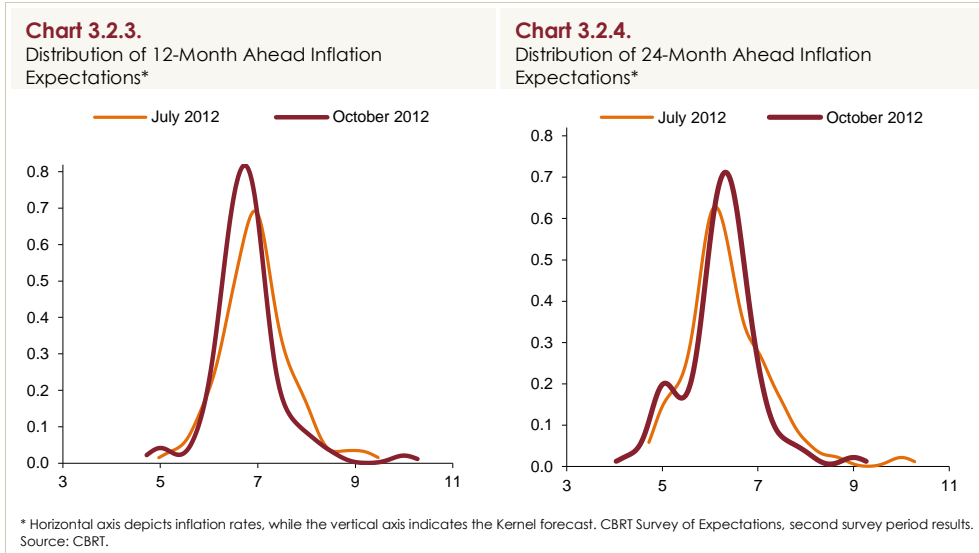


### 3.2. Expectations

Medium-term inflation expectations, which remained flat in the second quarter of 2012, went down in line with the favorable course of core inflation indicators in the third quarter. On account of the effects of the adopted fiscal measures, year-end inflation expectations went up to 7.3 percent according to the second survey data in October, while medium-term expectations remained unchanged in this period, thus suggesting that hikes to taxes and energy prices were perceived to have a temporary effect on inflation in the medium term (Chart 3.2.1). When analyzed by maturities, annual inflation expectations up to end-2012 and for the first half of 2013 were revised downwards and upwards, respectively, while having remained unchanged for the long term (Chart 3.2.2). Currently, inflation expectations continue to hover above the inflation target of 5 percent, set for year-ends of 2013 and 2014.



The distribution of survey respondents for both 12-month and 24-month ahead inflation expectations converged further in this period (Charts 3.2.3 and 3.2.4).



Box  
3.1

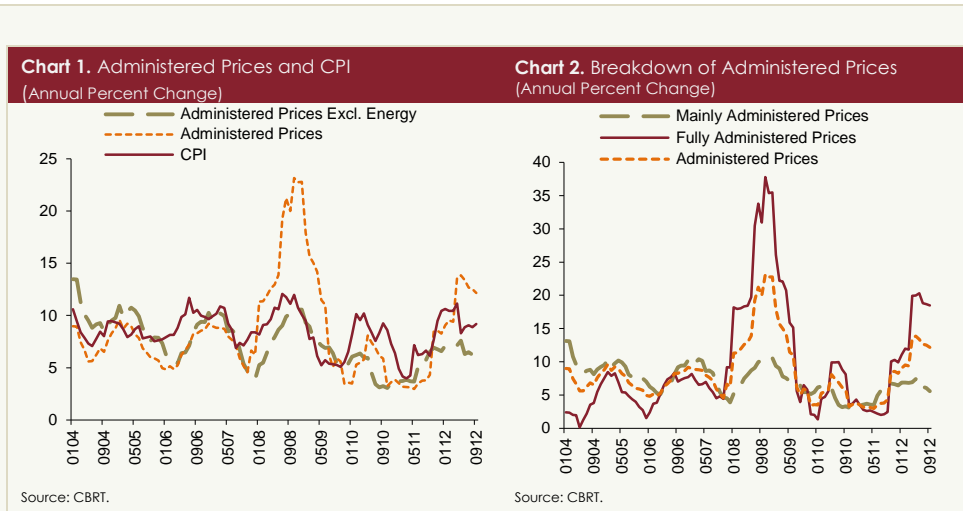
## Effects of Administered Prices and Indirect Tax Adjustments on the CPI Inflation

Administered prices cover the prices of goods and services either fully set or mainly influenced by the government.<sup>1</sup> Although the scope thereof varies among countries, administered prices are usually items such as local transport services, hospital services, postal services and medicines. Administered prices, which are divided into two as *fully* (directly determined by the government) or *mainly administered set* (influenced by the decisions taken by the central government, local government or regulatory institutions), can contribute significantly to inflation from time to time. This Box examines the contribution of administered prices and changes in tax rates in the CPI inflation, and accordingly presents an analysis regarding the effect of the measures taken in September.<sup>2</sup>

In the January 2004-September 2012 period, annual rate of increase of both consumer and administered prices stood at 8.5 percent on average (Chart 1). In line with the hikes in energy prices, administered prices accelerated considerably in the first nine months of 2008. Similarly, administered prices proved to be a factor to push up consumer prices in the second and third quarter of 2012. In both periods, the increase in administered prices was attributed to fully *administered* prices (Chart 2). Nevertheless, it should be highlighted that a great part of administered prices is made up of energy prices (electricity, natural gas, etc.). In this respect, exclusion of energy prices, which are mostly determined by international prices, suggests that in the 2004-2012 period, the annual rate of increase in administered prices mostly lagged behind the consumer inflation, standing at 7.4 percent on average (Chart 1).

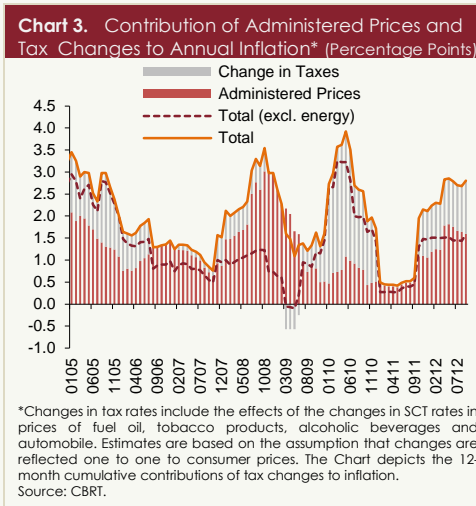
<sup>1</sup> EUROSTAT (2010).

<sup>2</sup> Administered price index is derived from four-digit index level for the EU. The index is updated every January as some items were privatized or some prices were started to be determined by the state. The price index for Turkey was calculated by using the most detailed price indices on a sub-item basis in order to construct a more reliable index. As also stated in the European Central Bank (2007), each sub-item is not clearly separated into categories as "administered" or "set in the market". In this paper, if the items determined by the state have a weight above 50 percent within any sub-item, the respective sub-item is included in the administered price index. The index was derived by taking account of all items that included in/excluded from the index within five digits since 2003 and was updated every January. As the construction of the administered index is based on the EUROSTAT definition, the index does not include alcoholic beverages, tobacco products and fuel oil items.



The public sector affects inflation not only through administered prices but also through changes in indirect taxes. Indirect taxes imposed on certain products, chiefly fuel oil, tobacco products and alcoholic beverages occupy an undeniable place within tax revenues. In this box, the contribution of tax changes in CPI inflation is calculated by taking account of the Special Consumption Tax (SCT) rates in fuel oil, tobacco products, alcoholic beverages and automobile items.

Accordingly, in the 2005-2012 period, the public sector added to annual CPI inflation by 2 percentage points on average through administered prices and tax adjustments (Chart 3). Excluding the effect of energy items gives out a decline in contribution to 1.3 percentage points on average, 0.7 percentage points of which is made up of tax adjustments. Particularly, in March 2011, when inflation hit a historically low level with 4 percent, the contribution of administered prices remained far behind the averages of past years, while that of changes in SCT rates proved zero. Affected by the latest decisions, the direct contribution to inflation of public sector excluding administered energy items are estimated to be 1.2 percentage points by the end of October. Once energy is included, contribution of public sector is projected to be approximately 2.3 percentage points.



### Effects of the Measures Taken in September 2012

A detailed elaboration of the measures taken in September will prove helpful to present a reliable assessment of the recent inflation developments. SCT rates on fuel oil, automobile and alcoholic beverages were raised as per the arrangement regarding the change in tax rates in certain products subject to the SCT Law, which was published on the Official Gazette of September 22, 2012. This period also saw increases in electricity and natural gas prices to be effective as of October 1, 2012. These arrangements are estimated to *directly* affect the annual CPI inflation by 1.16 percentage points, should SCT rate increases are completely imposed on prices (Table 1). However, given the preliminary developments in October, the said effect is estimated to be around 1.10 percentage points. Considering that 0.22 percentage points of this effect has already reflected on September inflation, a large part of the effect of the decisions of the public sector on inflation (around 0.88 percentage points) is expected to be apparent in October.

Table 1. Contribution of SCT Increases and Energy Price Adjustments to Inflation

	Total Change (Percent)	Total Contribution (Estimated*)	Total Contribution (Estimate as of October**)
<b>SCT Hikes</b>			
Fuel Oil	10.43	0.50	0.50
Automobile	1.94	0.12	0.06
Alcoholic Beverages	9.89	0.03	0.04
Sum		0.66	0.60
<b>Administered Energy</b>			
Electricity	9.8	0.34	0.34
Natural Gas	9.8	0.16	0.16
Total		0.50	0.50
Sum		1.16	1.10

\* Estimated by assuming that increases in tax rates will completely be reflected on prices.

\*\* Estimated in view of realizations in October.

As a result, decisions of the public sector influence inflation through two channels. The first one is the price adjustments in items, the prices of which are fully or mainly administered by the state. The second one is the changes introduced to indirect taxes. Direct contribution of the public sector to inflation through the said channels has recorded an increase since the last quarter of 2011.

### REFERENCES

EUROSTAT, 2010, HICP-Administered Prices (HCIP-AP), at [http://epp.eurostat.ec.europa.eu/portal/page/portal/hicp/methodology/administered\\_prices](http://epp.eurostat.ec.europa.eu/portal/page/portal/hicp/methodology/administered_prices)

ECB, 2007, Measuring and Assessing the Impact of Administered Prices on HICP Inflation, May 2007 Monthly Bulletin.

