3. Inflation Developments

3.1. Inflation

Consumer prices increased by 1.83 percent in the second quarter of 2011, while annual inflation rose to 6.24 percent from as low as 3.99 percent at the end of the first quarter. The waning base effects from 2010 tax adjustments, coupled with food inflation reaching historic lows, caused annual inflation to fall steeply in the first quarter. Amid pick-up in food inflation, lagged effects of the cumulative increases in TL import prices and base effects, inflation gained momentum in the second quarter. Producer prices pressure remained strong, yet cumulative cost increases put less pressure on consumer prices in the second quarter compared to earlier periods, confirming that the economy is currently not overheating. Core inflation indicators posted a higher annual rate of increase, but slowed down in seasonally adjusted terms.

Across subcategories, the quarterly rate of change in food and core goods was up from the average of previous years (Chart 3.1.1). Despite rising mainly on base effects from communication services, annual services inflation remained relatively moderate on a quarterly basis. Energy prices soared in the second quarter due to exchange rate developments even though international oil prices were flat compared with the end of the first quarter. High international commodity prices and the depreciation of the Turkish lira continued to affect prices of core goods. After a moderate first quarter, unprocessed food prices decreased at a pace below historical averages in the second quarter, pushing food inflation higher. Accordingly, food and core goods accounted for 1.71 percentage points of the 2.25 percentage point increase in annual consumer inflation (Chart 3.1.2).

Chart 3.1.1.
CPI by Subcategories
(Second-Quarter Percent Change)

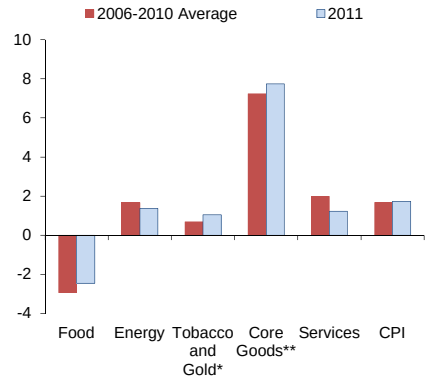
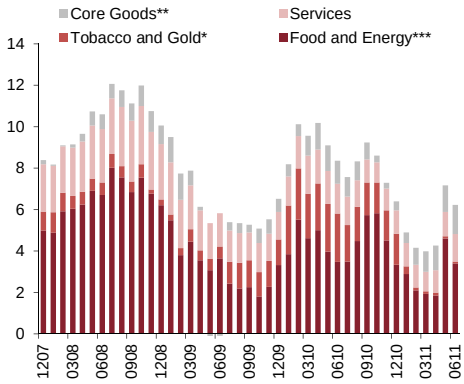


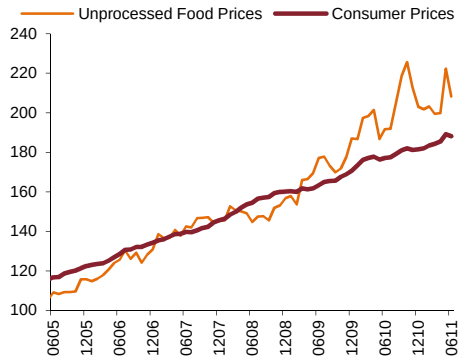
Chart 3.1.2.
Contribution to Annual CPI Inflation



* Tobacco and Gold: Alcoholic beverages, tobacco and gold.
** Core Goods: Goods excluding food, energy, alcoholic beverages, tobacco and gold.
*** Food and Energy: Food, non-alcoholic beverages and energy.
Source: TurkStat, CBRT.

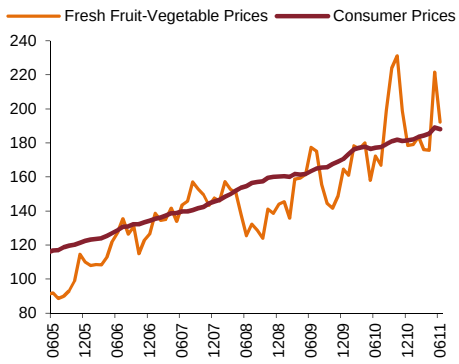
After falling sharply in the first quarter, food inflation rose by 4.66 percentage points to 8.13 percent in the second quarter. This quarter-on-quarter increase, as anticipated in the April Inflation Report, was largely driven by rising unprocessed food inflation (Chart 3.1.3). Prices were up across all unprocessed food items, particularly fresh fruits and vegetables (Chart 3.1.4). After entering May's price index at very high prices due to supply-side factors, cherry and plum prices were corrected downward in June as expected, causing food and consumer price inflation to fluctuate dramatically. It should be noted food prices and thus overall consumer price index may exhibit fluctuations due to supply-side related temporary and extreme price movements especially in the second quarter when summer fruits are included in the CPI basket.

Chart 3.1.3.
Unprocessed Food and Consumer Prices
(Index, Seasonally Adjusted)



Source: TurkStat, CBRT.

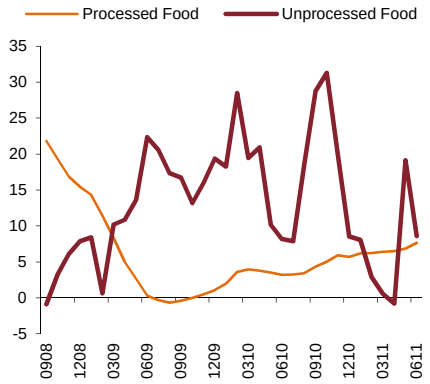
Chart 3.1.4.
Subcategories of Unprocessed Food and Consumer Prices
(Index, Seasonally Adjusted)



Source: TurkStat, CBRT.

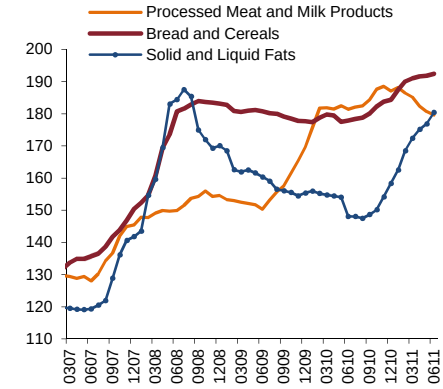
After rising at a faster pace in the first quarter amid higher international food prices, processed food prices slowed during the second quarter despite negative effects due to the recently depreciated Turkish lira (Table 3.1.1). Prices of oils and fats continued to increase, albeit more slowly. On the other hand, ongoing decreases in meat and dairy prices and the slowdown in prices of bread and cereals following the temporary suspension of tariffs on wheat imports restrained price hikes in processed food (Chart 3.1.6).

Chart 3.1.5.
Food Prices
(Annual Percent Change)



Source: TurkStat, CBRT.

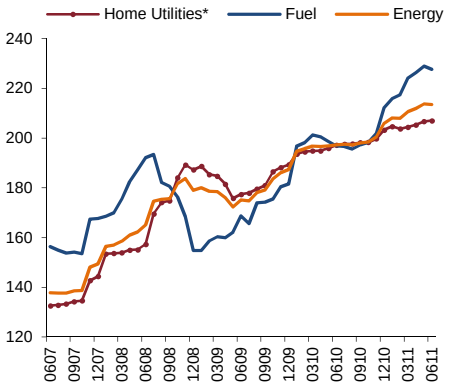
Chart 3.1.6.
Selected Processed Food Prices
(Index, 2003=100)



Source: TurkStat, CBRT.

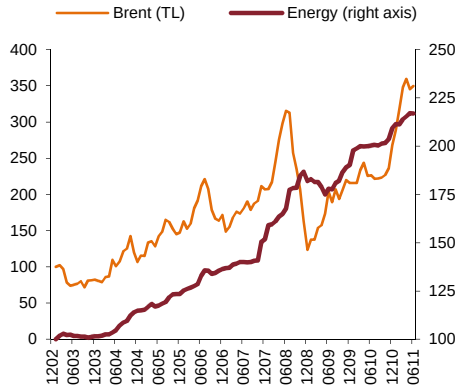
Energy prices increased by 1.37 percent during the second quarter (Table 3.1.1). Although international oil prices were stable compared to the end of the first quarter, the weak Turkish lira caused domestic fuel prices to increase (Chart 3.1.7). Among home utilities, solid fuel prices declined slightly, while bottled gas prices and water tariffs rose. Accordingly, annual energy price inflation ended June at 8.25 percent. Despite sharp increases in TL-denominated oil prices, natural gas and electricity prices have yet to rise, adding to upside risks to energy prices for the second half of 2011 (Chart 3.1.8).

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.
Energy and TL Oil Prices
(Index, January 2003 =100)



Source: TurkStat, Bloomberg, CBRT.

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

	2010				2011	
	II	III	IV	Annual	I	II
CPI	**-0.33**	**1.15**	**1.55**	**6.40**	**1.57**	**1.83**
1. Goods	-0.38	1.29	1.64	7.18	1.53	2.05
Energy	0.21	0.43	3.98	9.96	2.27	1.37
Food and Non-Alcoholic Beverages	-6.66	7.02	-0.18	7.02	3.77	-2.46
Unprocessed Food	-12.76	13.16	-3.05	8.52	5.08	-5.79
Processed Food	-0.62	1.69	2.59	5.68	2.61	0.57
Goods excl. Food and Energy	5.07	-2.96	2.21	6.09	-0.68	6.32
Core Goods	6.16	-3.45	2.59	1.70	-1.08	7.73
Durable Goods excl. Gold	0.36	-0.34	-1.06	0.26	4.26	1.85
Alcoholic Beverages, Tobacco and Gold	1.48	-1.27	0.93	24.61	0.81	1.05
2. Services	**-0.17**	**0.73**	**1.31**	**4.24**	**1.67**	**1.22**
Rents	0.65	1.30	0.98	3.96	1.08	0.99
Restaurants and Hotels	2.28	1.56	2.30	9.76	1.65	1.80
Transport	1.32	1.83	1.28	7.04	2.28	2.10
Communication	-6.11	-2.90	2.23	-3.51	1.96	-1.71
Other*	0.27	1.19	0.30	3.57	1.61	2.14

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

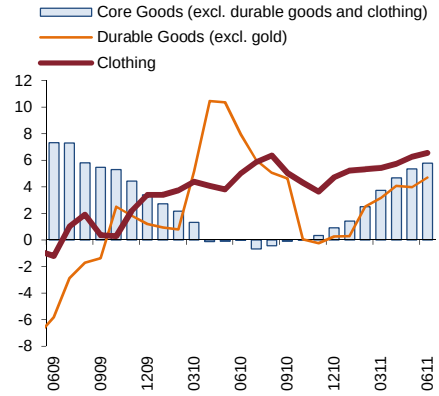
Trending upward since the last months of 2010, annual core goods inflation rose by 1.55 percentage points in the second quarter to 5.56 percent. This increase reflects the depreciation of the Turkish lira and changes in import prices, as in the previous quarter, and is evident across all subcategories of core goods, particularly durable goods excluding gold and white goods (Chart 3.1.9). Yet, seasonally adjusted data point to a slackening in the rate of increase in prices of core goods (Chart 3.1.10). Meanwhile, the annual rate of increase in clothing prices continued to rise. As also stated in the April Inflation Report, the most significant risk to prices of core goods over the upcoming period will be the impact of the Council of Ministers' decision to raise tariffs on fabrics and apparels on clothing inflation.

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

	2010				2011	
	II	III	IV	Annual	I	II
Core Goods	**6.16**	**-3.45**	**2.59**	**1.70**	**-1.08**	**7.73**
Clothing and Footwear	**23.73**	**-11.90**	**9.94**	**4.72**	**-12.04**	**25.08**
Durable Goods excl. Gold	**0.36**	**-0.34**	**-1.06**	**0.26**	**4.26**	**1.85**
Furniture	3.76	1.77	-1.06	5.94	0.75	5.04
Electrical and Non-Electrical Appliances	-1.01	-0.85	-0.23	-2.23	2.87	-1.26
Automobiles	-0.11	-0.61	-1.67	-0.26	6.31	2.29
Other Durable Goods	2.17	-1.81	0.90	1.79	2.15	2.71
Other	**0.11**	**0.58**	**1.18**	**0.91**	**1.82**	**2.09**

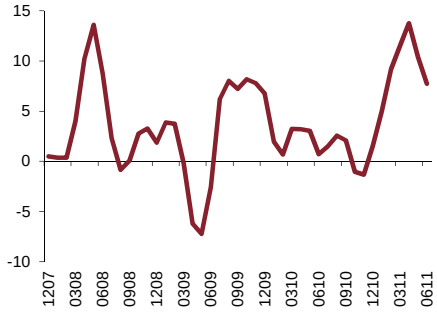
Source: TurkStat, CBRT.

Chart 3.1.9.
Prices of Core Goods
(Annual Percent Change)



Source: TurkStat, CBRT.

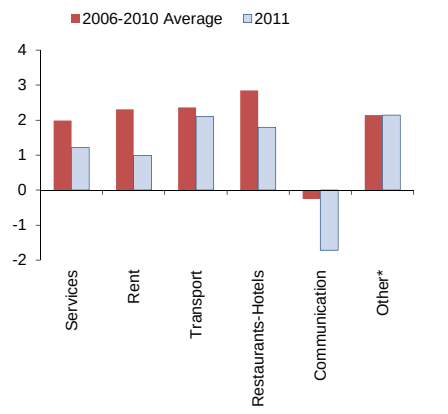
Chart 3.1.10.
Prices of Core Goods
(Seasonally Adjusted, 3-Month Average, Annual Percent Change)



Source: TurkStat, CBRT.

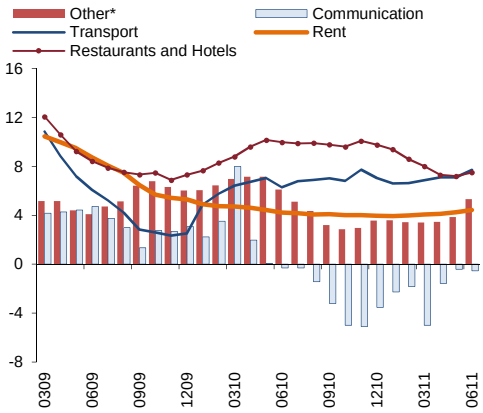
Prices of services were up 1.22 percent in the second quarter, a rate below historical averages (Chart 3.1.11). However, as noted in April Inflation Report, annual inflation in prices of services rose to 5.02 percent, mainly due to base effects from communication services. It is worth remembering that prices of communication services had dropped sharply amid falling mobile call rates a year earlier, bringing services inflation down by about 1 percentage point. Among subcategories, rents continued to rise moderately, while the rate of increase in prices of restaurants and hotels slowed down compared to the same period of previous years. On the other hand, prices of transport services increased at a rate close to historical averages due to cumulative effects of rising domestic fuel prices. Meanwhile, prices for communication services continued to be well below last year's levels amid intense competition and rapid technological development (Chart 3.1.12).

Chart 3.1.11.
Prices of Services by Subcategories
(Second-Quarter Percent Change)



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

Chart 3.1.12.
Prices of Services by Subcategories
(Annual Percent Change)



Source: TurkStat, CBRT.

Seasonally adjusted indicators point to a relative slowdown in the underlying trend of services price inflation in this period (Chart 3.1.13). The diffusion index showing the percentage of items with increasing and decreasing prices to overall items in this subcategory, reflects a similar trend, but points to a much smaller slowdown (Chart 3.1.14).

Chart 3.1.13.
Prices of Services
(Seasonally Adjusted, 3-Month Average, Annual Percent Change)

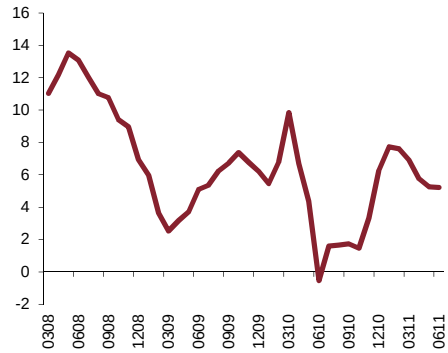
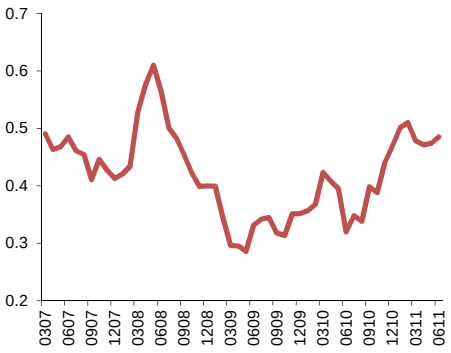


Chart 3.1.14.
Diffusion Index of Services Prices*
(Seasonally Adjusted, 3-Month Average)

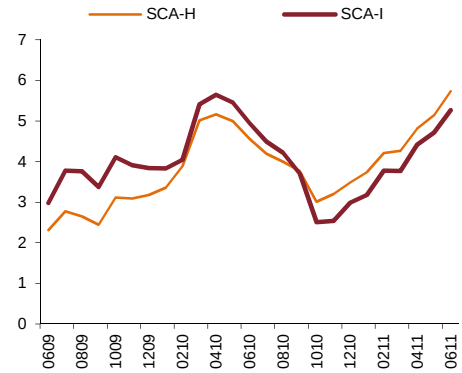


* Diffusion Index: The diffusion index is calculated as the ratio of the number of items with increasing prices minus the number of items with decreasing prices to total number of items.
Source: TurkStat, CBRT.

The annual rate of increase in core inflation indicators SCA-H and SCA-I accelerated in the second quarter amid higher core goods inflation (Chart 3.1.15). As is known, the annual rate of increase in core measures is not necessarily indicative of the underlying inflation due to base effects. Therefore, seasonally adjusted series provide more concrete information about the

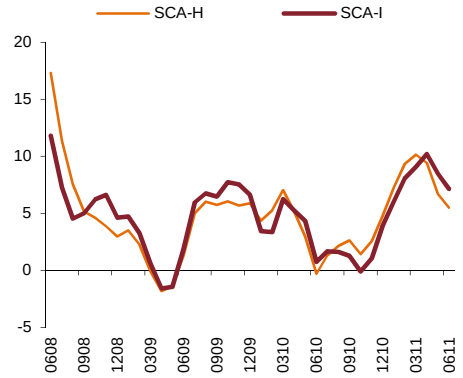
underlying trend. Based on this evidence, the underlying trend of these indicators appears to have declined in the second quarter, while increasing year-on-year (Chart 1.3.16).

Chart 3.1.15.
Core Inflation Indicators SCA-H and SCA-I
(Annual Percent Change)



Source: TurkStat, CBRT.

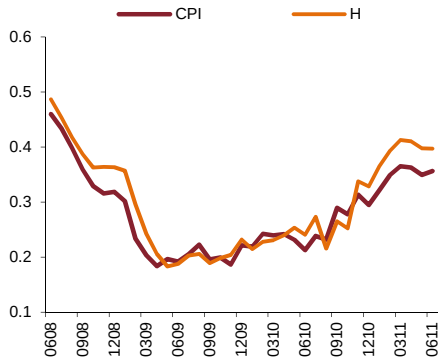
Graph 3.1.16.
Core Inflation Indicators SCA-H and SCA-I
(Seasonally Adjusted, 3-Month Average, Annual Percent Change)



Source: TurkStat, CBRT.

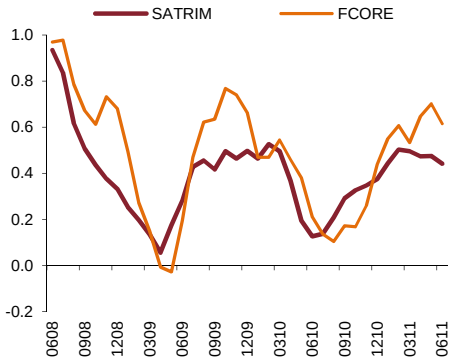
Diffusion indices point to a similar, albeit more limited slowdown in core inflation (Chart 3.1.17). Indeed, the prevalent upward trend in these indicators since mid-2010 paused in the second quarter. The alternative core inflation measures monitored by the CBRT were also slightly down during this period (Chart 3.1.18).

Chart 3.1.17.
CPI and SCA-H Diffusion Indices
(Seasonally Adjusted, 3-Month Average)



Source: TurkStat, CBRT.

Chart 3.1.18.
Core Inflation Indicators SATRIM and FCORE*
(3-Month Average)



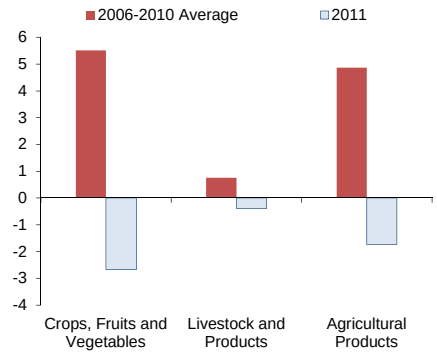
* SATRIM: Seasonally adjusted trimmed mean inflation.
FCORE: Factor model based core inflation indicator.
(See Inflation Report 2011-I, Box 3.2).
Source: CBRT.

An accurate analysis of inflation dynamics is key to monitoring the underlying inflation. As price indices are composed of heterogeneous products

with varying pricing behaviors, micro-level analyses are informative about inflation dynamics. Due to this heterogeneous structure, micro-based measures incorporating the frequency, distribution and synchronization of price changes of goods and services can provide valuable insight into inflation dynamics. Using a detailed set of product prices, such analyses can also help infer the degree of price stickiness. In this context, Box 3.1 provides an analysis for Turkey based on micro prices.

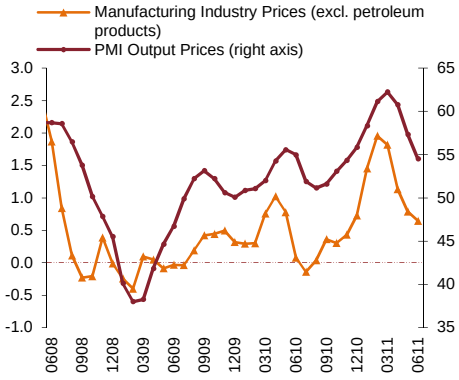
Producer prices increased relatively below the recent underlying trend by 0.77 percent in the second quarter, mainly owing to lower agricultural prices driven by falling fruit and vegetable prices (Chart 3.1.19). Having tumbled on falling wheat prices amid new import measures, cotton prices accounted for 1.73 percent of the decline in agricultural prices. Meanwhile, sunflower prices continued to trend upward, weighing further on consumer prices through processed food prices.

Chart 3.1.19.
Agricultural Prices
(Second-Quarter Percent Change)



Source: TurkStat.

Chart 3.1.20.
Manufacturing Industry and PMI Output Prices



Source: TurkStat, Markit, CBRT.

With metal prices on the rise for the second consecutive quarter, manufacturing industry prices increased by 1.98 percent quarter-on-quarter (Table 3.1.3). Despite losing momentum of the first quarter, producer prices for base metals, metal products and electric machinery rose dramatically in the second quarter. Similarly, producer prices for furniture continued to climb in the second quarter. Producer prices for textiles were up only slightly, while the sharp increase in producer prices for apparels and leather goods suggests that cumulative cost effects continue to pose pressure on clothing prices. As a result, despite the recent depreciation of the Turkish lira, the rate of increase in manufacturing industry prices dropped significantly quarter-on-quarter amid

falling international commodity prices and weak external demand (Chart 1.3.20).

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

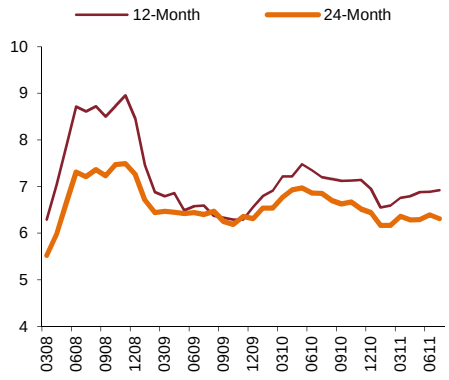
	2010				2011	2011
	II	III	IV	Annual	I	II
PPI	**0.67**	**1.51**	**2.21**	**8.87**	**5.40**	**0.77**
Agriculture	**2.41**	**1.71**	**0.26**	**14.52**	**5.84**	**-1.73**
Crops, Fruits and Vegetables	2.03	2.78	-3.17	9.20	6.81	-2.67
Livestock and Animal Products	0.29	6.23	8.21	29.85	-1.26	-0.39
Industry	**0.29**	**1.46**	**2.64**	**7.71**	**5.31**	**1.30**
Mining	1.26	3.75	0.95	7.11	9.70	1.08
Manufacturing	**0.10**	**0.99**	**2.86**	**6.62**	**6.27**	**1.98**
Manufacturing excl. Petroleum	0.24	1.09	2.20	5.92	5.55	1.95
Manufacturing excl. Petroleum and Base Metals	0.14	0.72	1.90	3.98	4.85	1.53
Electricity, Gas and Water	1.66	5.07	1.32	18.68	-4.08	-4.73

Source: TurkStat, CBRT.

3.2. Expectations

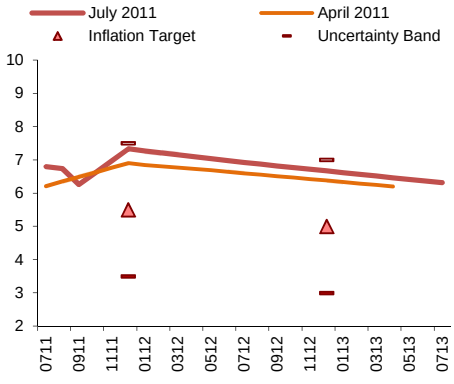
After rising modestly during the first quarter of 2011, inflation expectations remained virtually unchanged in the second quarter (Chart 3.2.1). Although annual inflation in core indicators continued to rise and inflation was extremely volatile, inflation expectations remained stable in the second quarter (Box 3.2). Inflation expectations for both near and medium-term were slightly up quarter-on-quarter (Chart 3.2.2). Currently, inflation expectations continue to hover above the year-end targets of 5.5 and 5 percent for 2011 and 2012, respectively.

Chart 3.2.1.
12- and 24-Month Ahead CPI Expectations*
(Annual Percent Change)



* CBRT Survey of Expectations, second survey period results.
Source: CBRT.

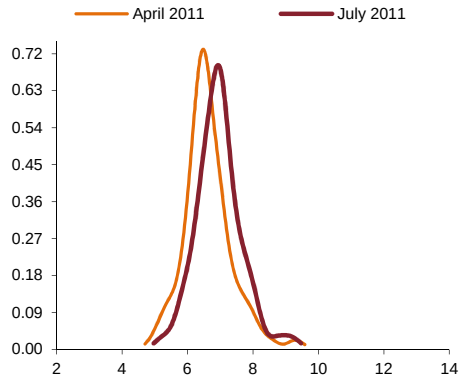
Chart 3.2.2.
Inflation Expectations Curve*
(Annual Percent Change)



* Calculated by linear interpolation of expectations for different time spans using the CBRT Survey of Expectations, second survey period results.
Source: CBRT.

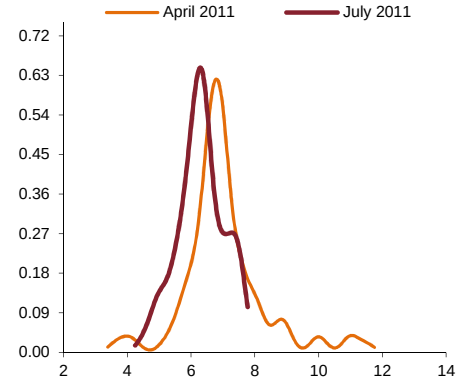
The distribution of survey respondents' 12-month ahead inflation expectations remains largely unchanged from April, whereas survey responds for 24-month ahead inflation expectations have significantly converged in July (Charts 3.2.3 and 3.2.4).

Chart 3.2.3.
Distribution of 12-Month Ahead Inflation Expectations*



* CBRT Survey of Expectations, second survey period results.
Source: CBRT.

Chart 3.2.4.
Distribution of 24-Month Ahead Inflation Expectations*



* CBRT Survey of Expectations, second survey period results.
Source: CBRT.

Box 3.1

Findings on Price Rigidity Based on Micro Data

Inflation is an indicator denoting the rate of change in product prices aggregated by indexation. A monetary policy strategy focusing on price stability aims at containing inflation which provides a measure for the average rate of change in prices. Macro price indicators and their derivatives (special aggregates, subcategory price indices etc.) are quite functional in monitoring whether monetary policy has attained its goals, and also for implementing active communication policies in the meantime. However, it is not possible to obtain all the information needed to determine and analyze inflation dynamics from macro price indicators. For example, the information on the average period for prices to remain unchanged is essential for a sound analysis of inflation dynamics. Central banks place special emphasis on knowing the degree of price rigidity as it is one of the factors affecting the lag of the monetary policy transmission. With a view to filling this information gap, this Box presents the results of this lag analysis that may provide insight into price rigidity in Turkey by using micro data on prices of goods and services compiled at the CBRT over the October 2006-January 2011 period.

Distribution of Price Changes

The distribution of price changes in subcategories over the analyzed period is given in Chart 1. Price decreases are as commonly observed as price increases in Turkey. An analysis based on macro inflation observations may lead to consider that there is usually a downward rigidity in prices. However, our analyses reveal that even prices of services that do not decrease at the macro level can frequently decrease at the micro level. The distribution of price changes is bi-modal in food and services and more symmetric in energy and in goods excluding food and energy. Price changes for food and services in the vicinity of zero are rare, implying that price revisions for small changes may not be optimal for firms, and thus, state-dependent pricing is prevalent.

Direction and Size of Price Changes

When prices change at the item level, the probability for this change to be upward is almost equal to the one to be downward. The probability for the whole sample to change in an upward direction is calculated as 56 percent. The energy group displays the highest probability for an increase with 63 percent. As for the average size of price changes, absolute increases are slightly higher than absolute decreases, while the size of price changes is quite large in both directions (Table 1).

Frequency of Price Changes: Descriptive Statistics and Duration Analysis

Chart 2 presents for how long prices in the sample remained unchanged. As illustrated, the number of unchanged prices decrease in absolute terms over time. 90 percent of the general prices change within the first 4 months. It is seen that 90 percent of prices in the food group change within 3 months, while that in non-food products change in 6 months.[1]

The average duration for general prices and subcategories is presented in Table 2.[2] Accordingly, the average duration for consumer prices is between 1.6 and 1.9 months. The duration goes down to 1.3 months for the food category, which is quite sensitive to seasonal shocks. It is noteworthy that prices of services is the category that increases consumer price rigidity mostly. Hazard function, which shows the probability of a price change in a given period, exhibits a decreasing and then a flat course for all subcategories (Chart 3). Jumps in the probability of change in periods corresponding to one year point to the presence of a time-dependent pricing in Turkey.

Average duration for general prices is compared for different countries in Chart 4. Turkey is among countries with high price flexibility, and also, prices in Turkey are almost as rigid as in Latin American countries.

[1] The main factor behind frequent changes in food prices is unprocessed food prices. In fact, processed food prices remain unchanged for 2.5 months on average, while unprocessed food prices change every month on average.
[2] Average period for prices to remain unchanged can be calculated by two methods. The first one is directly observing and recording the duration. The second one is calculating the duration series by using the frequency obtained as the ratio of the number of price changes in a product to the total number of periods. For more information please refer to Özmen and Sevinç (2011).

Chart 1. Distribution of Prices Changes Across Subcategories

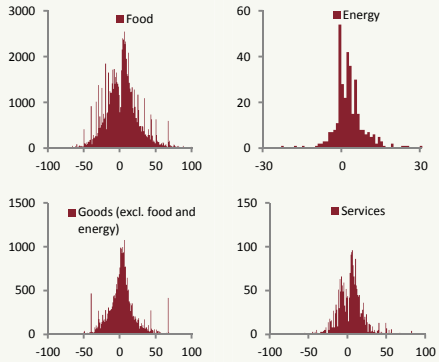
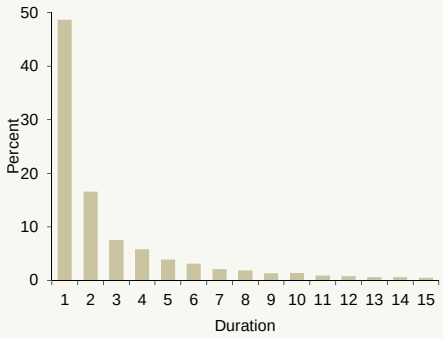
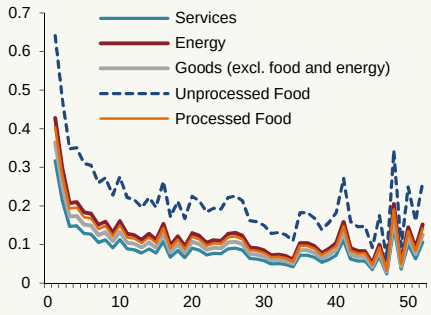


Chart 2. Frequency of Price Durations (General Prices)*



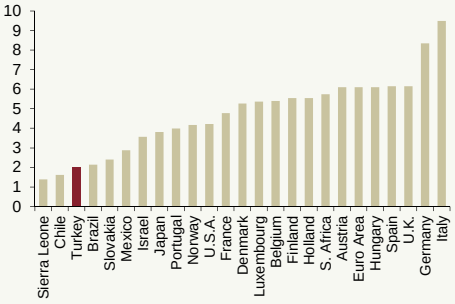
* Unit duration is 2 weeks.

Chart 3. Hazard Function Estimations



* Hazard functions are estimated by a non-parametric complementary logarithmic model. Unit duration is 2 weeks. The results are displayed for 2 years.

Chart 4. Average Price Duration in Various Countries (Month)*



* The values in the table are calculated by using the data from Özmen and Sevinç (2011) for Turkey, and Klenow and Malin (2010) for other countries (Table 1, page 236) .

Table 1. Average Size of Price Changes (Percent)

	Price Increases		Price Decreases	
	Number of Observations	Average	Number of Observations	Average
CPI	68180	18.06	52887	-16.78
Food	50959	19.20	40514	-17.75
Unprocessed Food	23699	23.12	21200	-20.98
Processed Food	27260	15.79	19314	-14.19
Services	1292	12.80	888	-11.32
Energy	218	5.09	129	-2.80
Goods excl. Food and Energy	15711	14.98	11356	-13.90

Table 2. Average Duration of Prices (Month)

	Observed Duration (Direct)	Implied Duration (Indirect)
CPI	1.9	1.6
Food	1.6	1.3
Energy	2.3	2.0
Goods excl. Food and Energy	2.6	2.4
Services	3.6	3.4

Source: Özmen and Sevinç (2011), Klenow and Malin (2010).

REFERENCES

Özmen, M. U. and O. Sevinç, 2011, Price Rigidity in Turkey: Evidence from Micro Data, CBRT Working Paper (forthcoming).

Klenow, P. J. and B. A. Malin, 2010, Microeconomic evidence on price setting, Handbook of Monetary Economics, 3: 231-284.

Box 3.2 The Effect of Inflation Surprises on Expectations

This Box analyzes the sensitivity of medium-term inflation expectations of the CBRT Survey of Expectations respondents to monthly inflation surprises. Whether inflation realizations cause revisions in inflation expectations between two survey periods is crucial for the design of the communication policy, and monitoring the evolution of this sensitivity over time provides feedback regarding the effectiveness of the communication policy.

In this Box, inflation surprise is defined as the difference between the current month's inflation expectation as reported by the survey and the inflation realization of that month. In order to minimize the effects of other factors influencing inflation expectations and to better measure the effect of the surprise, data from the survey period closest to the announcement of inflation rates were used in the analysis. Therefore, inflation surprise is measured as the difference between monthly inflation expectations and inflation realizations in the second survey period for the respective month, while the change in medium-term expectations is measured as the difference between 12-month ahead inflation expectations of the second survey, which is before the announcement of inflation rates and of the first survey following the announcement of inflation rates.

Firstly, monthly inflation surprises are analyzed graphically, where data for the same months of different years are displayed together in order to reveal the seasonal trend (Chart 1). The red series is the average value for the respective month. Accordingly, monthly averages of inflation surprises appear to be higher in some months and lower in others. In other words, inflation surprises exhibit a seasonal pattern. For example, in June, inflation surprises get negative values each year over the sampling period, which means inflation expectations for June were constantly higher than inflation realizations. This indicates that participants failed to fully consider the seasonal effects and develop a rational perspective while constructing current month's inflation expectations.

Secondly, the effects of inflation surprises on the level of expectations are analyzed. Accordingly, whether inflation surprises led to revisions in 12-month ahead inflation expectations between two survey periods is analyzed by estimating the following equation:

$$E_t\pi^{t+12} - E_{t-1}\pi^{t+12} = \Delta E_t\pi^{t+12} = \beta_0 + \beta_1\pi_t^{surprise} + \sum_{i=1}^{11} M_i \qquad (1)$$

The change in 12-month ahead inflation expectations are explained by inflation surprises, and considering the seasonal pattern of inflation surprises, seasonal dummy variables (M_i) are included in the equation based on their statistical significance. Inflation surprise coefficient β_1 is estimated using 36-month moving windows for the January 2002-July 2011 sample period (Chart 2). The periods when this variable is significant at 5 percent are highlighted in blue. Accordingly, the sensitivity of 12-month ahead inflation expectations to inflation surprises is significant across the sample. This finding is consistent with the former studies conducted at the CBRT which also stated that past inflation realizations are important determinants of inflation expectations.[3] The sensitivity of inflation expectations to inflation surprises decreases significantly in the pre-crisis period, but increases during the global crisis period when inflation assumes a steady downtrend and negative surprises occur. In the recent period where fluctuations in inflation are mainly driven by transitory effects like unprocessed food prices, the effect of inflation surprises on changes in expectations has declined back to pre-crisis levels (Chart 2). In fact, although inflation went far beyond expectations mainly due to unprocessed food prices in May, 12-month ahead inflation expectations remained subdued.

Chart 1. Monthly Inflation Surprises

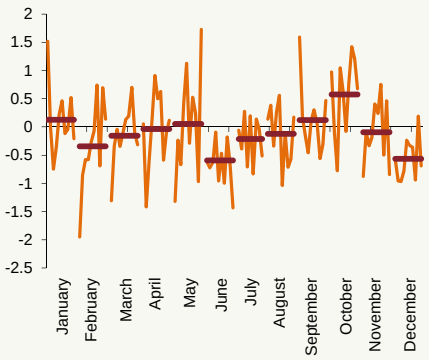
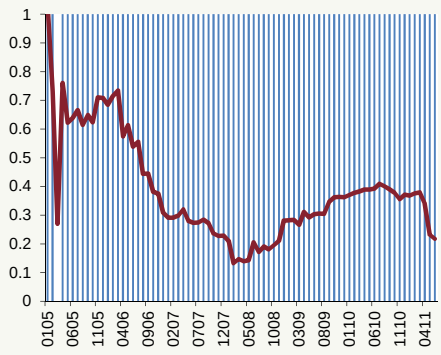


Chart 2. Sensitivity of 12-Month Ahead Inflation Expectations to Inflation Surprises



Source: TurkStat, CBRT.

[3] Başkaya *et al.* (2008).

Another significant point regarding inflation expectations is whether these unexpected changes in inflation affect the distribution of inflation expectations. In this respect, as the final step, we examined whether inflation surprises led to a remarkable divergence among 12-month ahead inflation expectations of survey participants and to an increased perception of inflation uncertainty. Here, two different criteria were used for the distribution of expectations: standard deviation of expectations and the coefficient of variation. The following equation is estimated for both variables:[4]

$$\Delta\sigma^{t+12} = \beta_0 + \beta_1 \pi_t^{surprise} + \sum_{i=1}^{11} M_i \qquad (2)$$

Coefficient β_1 is firstly estimated for the case that the dependent variable is the standard deviation of expectations (Chart 3). The coefficient gets positive values in periods when it is statistically significant, in other words, inflation surprises and the consistency in expectations move in the same direction. However, this correlation gets steadily weaker over time. As for recent times, the coefficient of inflation surprises is not significant in explaining the developments in the consistency of expectations. A similar result is obtained when the coefficient of variation is used as an indicator of inconsistency (Chart 4). In sum, the effect of inflation surprises on the consistency of expectations has faded over time, becoming statistically insignificant.

Chart 3. Sensitivity of the Consistency in 12-Month Ahead Inflation Expectations to Inflation Surprises (Standard Deviation)

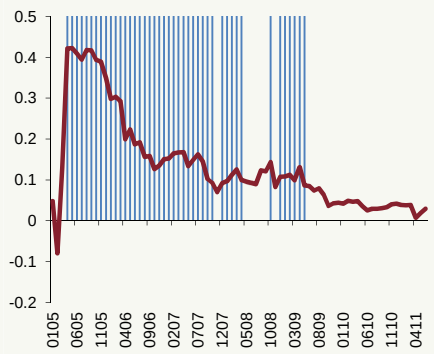
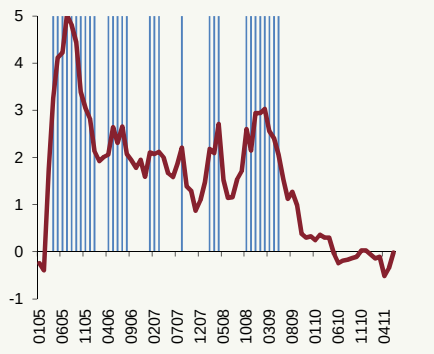


Chart 4. Sensitivity of the Consistency in 12-Month Ahead Inflation Expectations to Inflation Surprises (Coefficient of Variation)



As a result, the findings suggest that, with the adoption of the inflation targeting regime, the effect of short-term inflation surprises on medium-term inflation expectations has gradually decreased, albeit displaying occasional fluctuations.

REFERENCES

Başkaya, S., H. Kara and D. Mutluer-Kurul, 2008, Expectations, Communication and Monetary Policy in Turkey, CBRT Working Paper No. 08/01.

[4] Coefficient of variation=standard deviation/average.