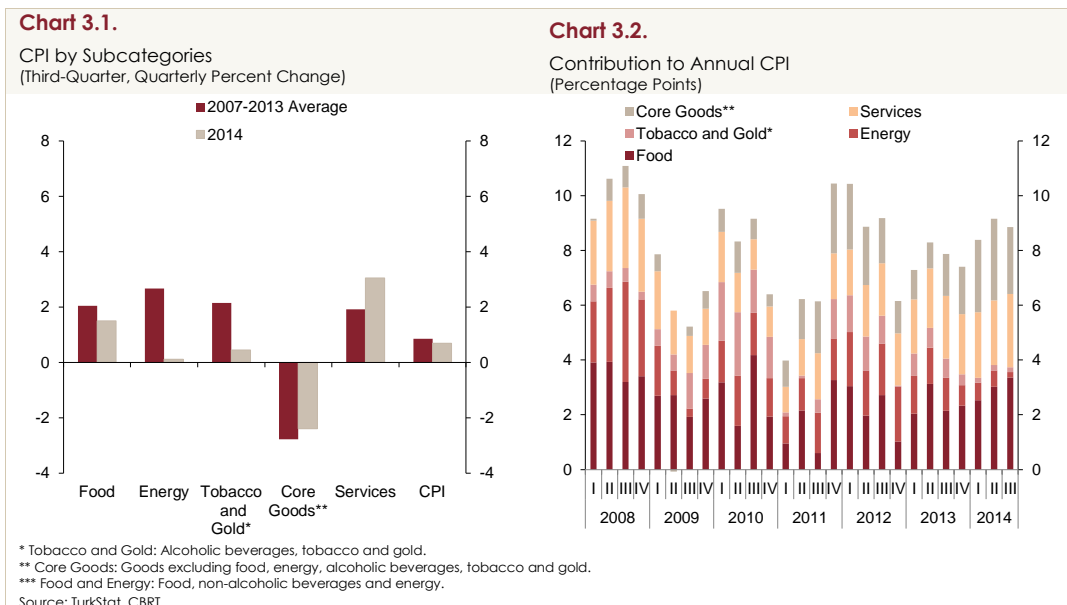


3. Inflation Developments

In the third quarter of 2014, annual consumer inflation edged down by 0.3 points quarter-on-quarter to 8.86 percent. The main drivers of this fall were energy and core goods prices. Annual inflation continued at a slower pace in durable goods due to the subsided exchange rate pressures, yet remained on the rise in other core goods that give a lagged response to exchange rate pass-through. Food prices continued to be the main source of inflation owing to adverse weather conditions and persisting negative effects of the depreciation in the Turkish lira. Meanwhile, the underlying trend of services inflation displayed a negative outlook and annual inflation recorded an increase across subcategories, primarily in items strongly linked to food prices. Despite the deterioration in the services prices, annual inflation in core indicators exhibited a slight quarter-on-quarter decline in line with the improvement in the core goods prices.

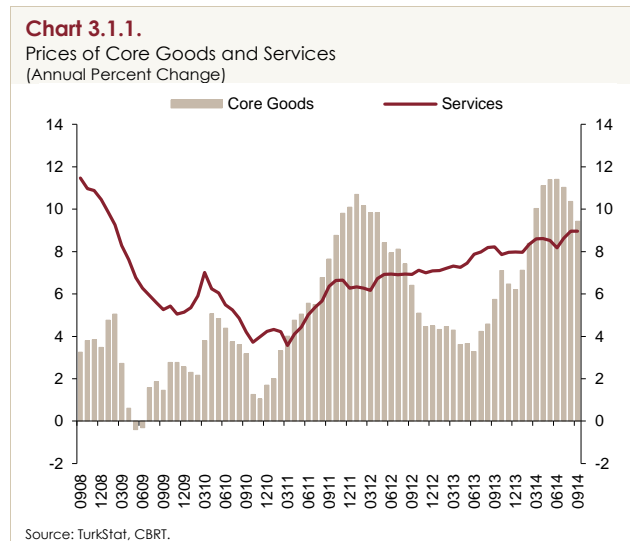
Across subcategories, food prices recorded a considerably higher-than-average increase in the first two quarters of the year. Despite a limited slowdown in the third quarter, annual inflation in food prices remained lifted at historic highs. Services inflation posted notably above-average readings in quarterly terms, while inflation in energy and tobacco prices saw quite limited increases (Chart 3.1). Despite the negative course of food inflation, the mild course of import prices, oil prices in particular, and the deceleration in economic activity alleviated inflationary pressures. On the other hand, the persistent elevation in consumer inflation and the ongoing deterioration in inflation expectations affected pricing behavior negatively. Moreover, the recent volatility in the Turkish lira may pose an upside risk in the inflation outlook.

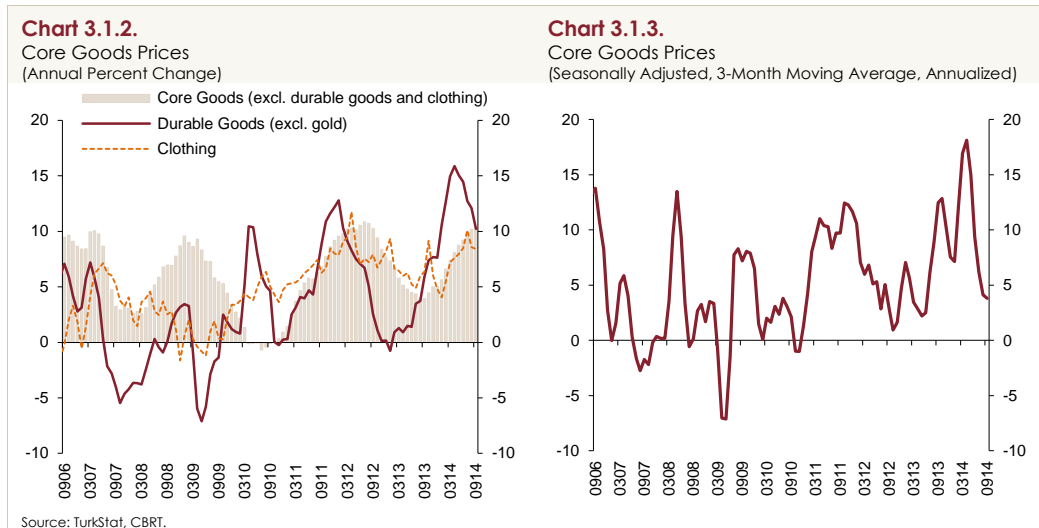


In sum, the third quarter was marked by ongoing alleviation in exchange rate pressures, while food prices maintained their negative course and the deterioration in expectations and the pricing behavior spread across certain groups, particularly services. The contribution of food and core goods prices to annual inflation edged up by 0.33 and 0.32 points to 3.36 and 2.67 percent, respectively (Chart 3.2). Although increases in electricity and natural gas tariffs by 9 percent, effective as of October, are expected to add 0.4 points to annual inflation, the underlying trend of inflation in the upcoming period is estimated to follow a downward course. In particular, food prices will be the main factor to determine the pace of decline in inflation. On the other hand, the gradual elimination of the cumulative effects of the exchange rate, the fall in commodity prices amid weakening global demand and the envisioned moderate course of domestic demand are expected to pull inflation down.

3.1. Core Inflation Outlook

Annual core goods inflation fell by 2 points to 9.42 percent in the third quarter of the year (Table 3.1.1 and Chart 3.1.1). Exchange rate pressures on core goods inflation waned in this period due to durable goods. Inflation by sub-items continued to differ as the speed of pass-through from the exchange rate varied across subcategories. Prices of durable goods, which respond swiftly to exchange rate changes, remained mostly on the decrease after April due to the course of the Turkish lira and the weak pace of final domestic demand. More specifically, durable goods prices saw a fall in annual inflation by 4.2 points to 10 percent in the last quarter (Chart 3.1.2). Despite following a fluctuating course, annual inflation in clothing prices remained unchanged from the previous quarter. Meanwhile, the main factor to put a cap on the decline in core inflation proved to be core goods prices, excluding durable goods and clothing. Annual inflation in this category, which is characterized by a lagged response to the exchange rate and high sensitivity to the course of consumer inflation, remained on the rise, albeit at a slower pace (Chart 3.1.2).





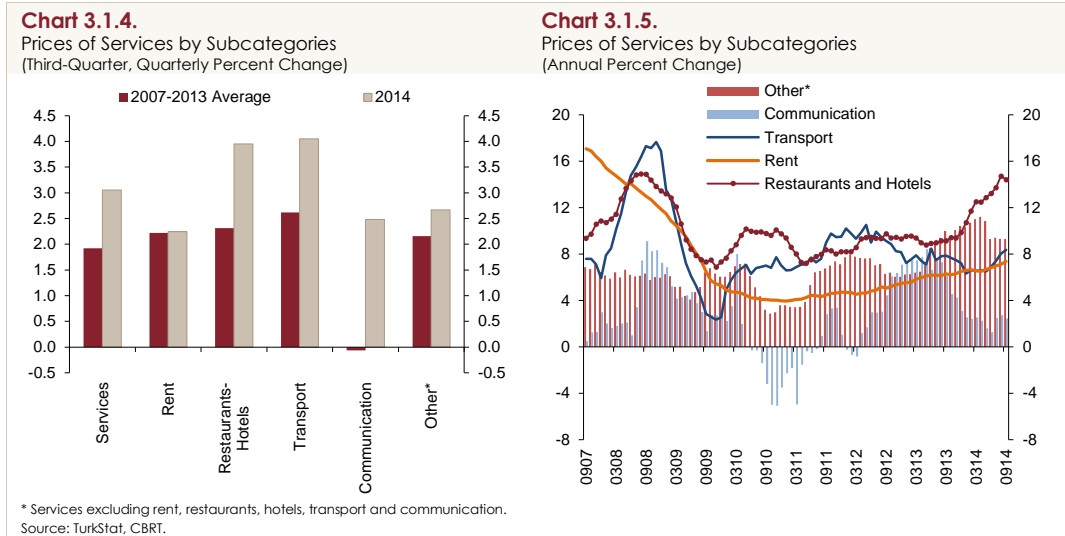
In sum, the underlying trend of core goods prices improved markedly in this period on the back of durable goods. Price developments in the last quarter suggest an underlying inflation, which is below 5 percent (Chart 3.1.3).

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

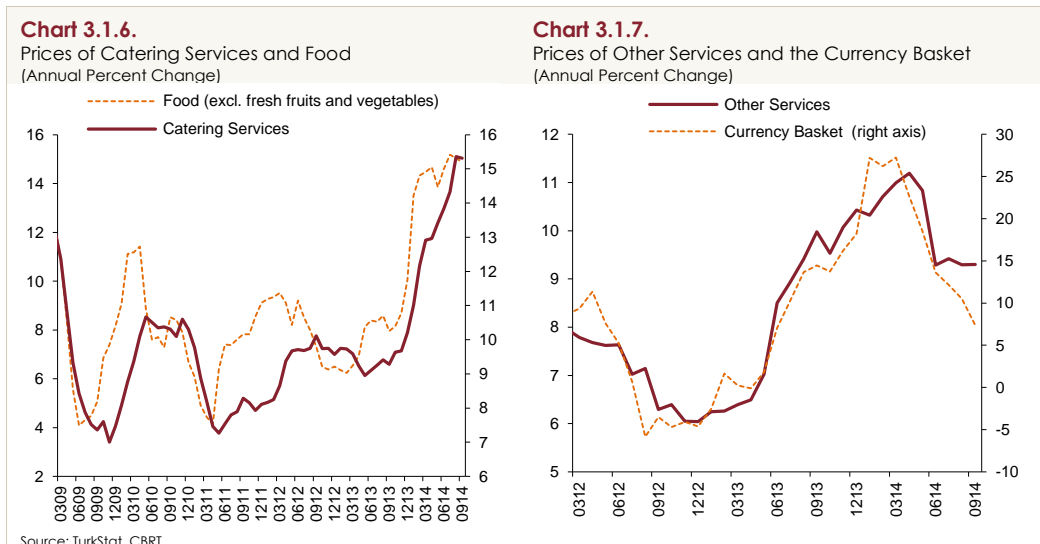
	2013			2014			
	III	IV	Annual	I	II	III	Annual
CPI	0.97	2.28	7.40	3.57	2.06	0.69	8.86
1. Goods	0.46	2.72	7.18	4.08	2.05	-0.30	8.77
Energy	2.95	2.20	5.15	0.21	-1.12	0.11	1.38
Food and Non-Alcoholic Beverages	0.19	4.01	9.67	7.50	0.41	1.50	13.95
Unprocessed Food	-2.29	6.46	12.88	10.79	-2.16	0.02	15.42
Processed Food	2.27	2.04	7.11	4.57	2.82	2.82	12.81
Core Goods	-0.62	3.48	6.20	2.05	6.16	-2.39	9.42
Clothing and Footwear	-10.43	10.38	4.82	-10.32	22.36	-10.50	8.40
Durable Goods (excl. gold)	3.75	1.12	7.62	9.54	-0.39	-0.08	10.24
Furniture	1.59	2.89	9.50	3.14	4.00	-1.11	9.14
Electrical and Non-Electrical Appliances	0.12	0.91	-1.48	3.86	-2.51	0.69	2.89
Automobile	5.55	0.67	10.27	16.65	-1.24	-0.10	15.86
Other Durable Goods	1.80	2.69	7.25	2.78	2.75	0.26	8.74
Core Goods (excl. clothing and durable goods)	0.75	2.13	5.05	3.21	2.85	1.82	10.39
Alcoholic Beverages, Tobacco and Gold	0.68	-4.39	6.74	8.24	-0.92	0.45	3.01
2. Services	2.32	1.16	7.98	2.37	2.10	3.05	8.96
Rent	1.70	1.81	6.50	1.30	1.82	2.25	7.37
Restaurants and Hotels	2.85	2.42	9.86	4.54	2.81	3.95	14.43
Transport	2.63	0.18	7.20	1.24	2.68	4.05	8.37
Communication	1.30	0.09	3.09	-0.14	0.02	2.48	2.45
Other*	2.65	0.82	10.43	3.10	2.42	2.67	9.30

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

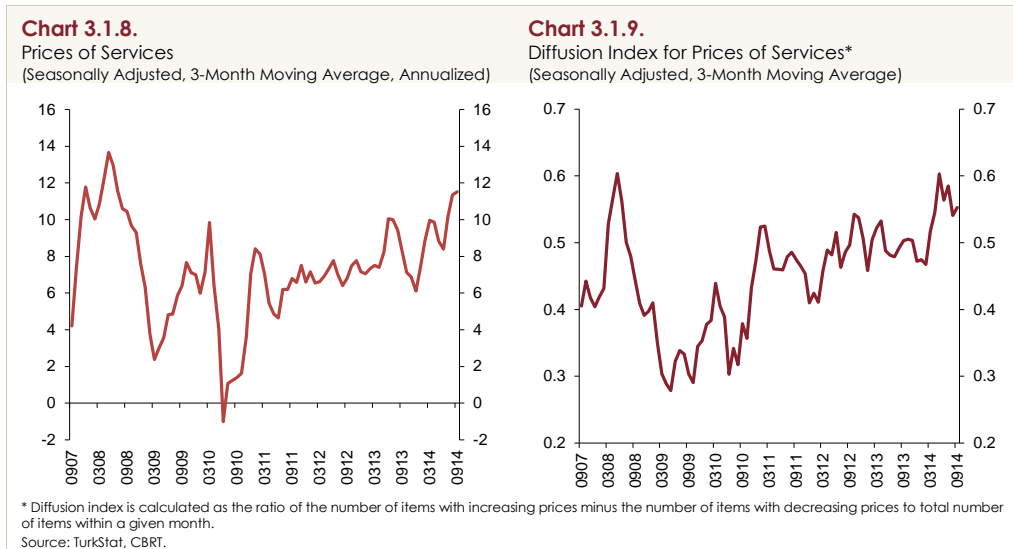
Prices of services increased notably above historical averages in the third quarter (Chart 3.1.4). Annual inflation rose by 0.8 points quarter-on-quarter to 9 percent (Chart 3.1.1). The high course of services inflation is attributed to restaurant and hotel prices and prices of other services across the year, while inflation in transport services and rent were also notable in the third quarter (Chart 3.1.5). On the other hand, in the last quarter, annual inflation remained flat in other services and moderate in communication services at 2.5 percent.



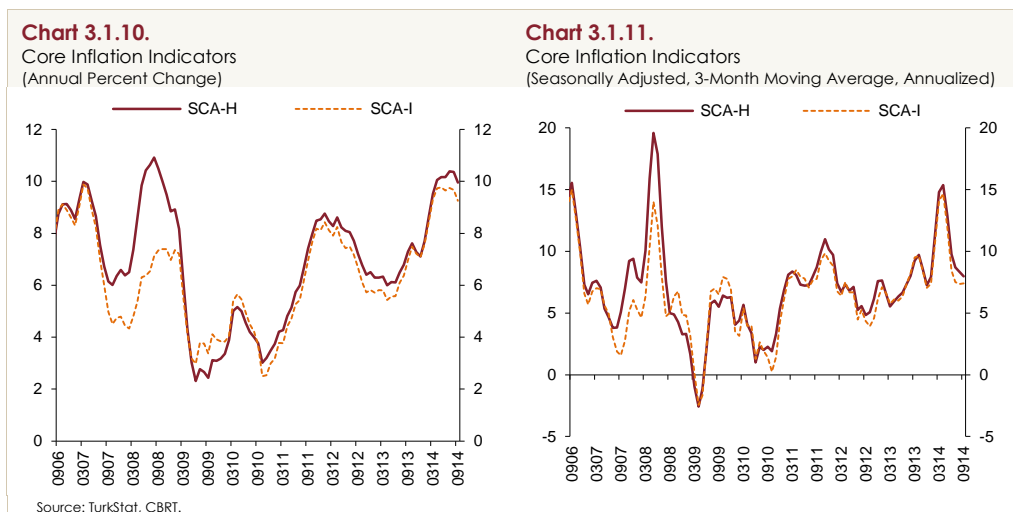
Cost-side pressures continue to weigh on services prices. High-rated increases in catering services due to rising food prices persisted in this period and annual inflation in services prices hit 15 percent (Chart 3.1.6). Meanwhile, prices in other services have been affected by the depreciation of the Turkish lira through channels such as foreign currency quoted prices (package tours, etc.) and use of imported inputs (maintenance and repair services, etc.) (Chart 3.1.7). In addition to the cost factors, soaring inflation expectations besides the effects of the high readings in consumer inflation also affected prices of services, rent and transport services in particular. A considerable portion of services prices is directly affected by demand conditions. However, depending on the average duration of prices, the transmission of demand conditions to prices of services takes relatively long time. Thus, in line with the tight monetary policy stance, the envisaged recovery in services inflation is expected to be slower than in other categories.

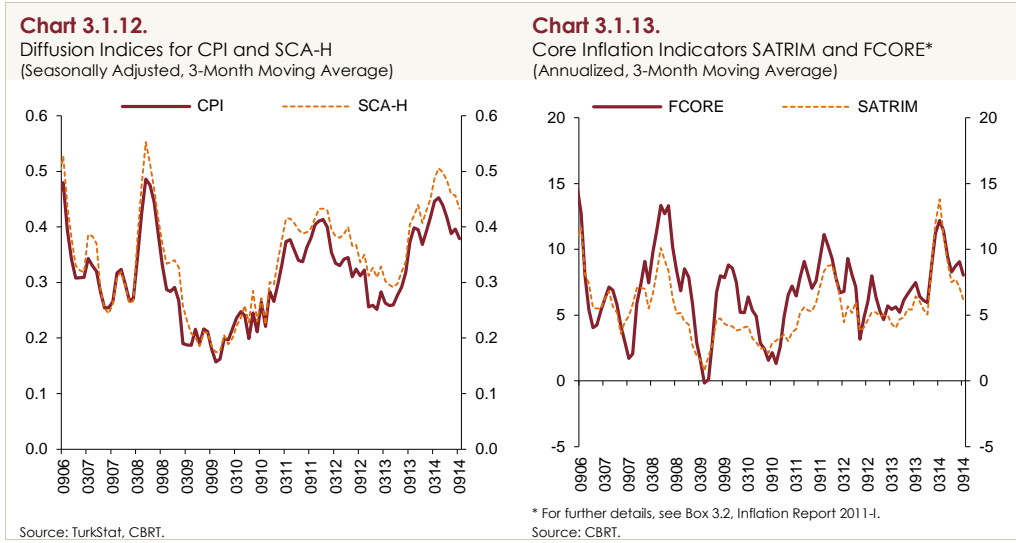


Third-quarter developments in the services sector suggest a persistent elevation in the underlying trend of inflation. According to quarterly averages, having decelerated slightly in the second quarter, the underlying trend of inflation re-accelerated in the third quarter (Chart 3.1.8). The diffusion index for services prices also remained high in this quarter (Chart 3.1.9). Accordingly, third-quarter indicators point to a higher underlying trend for services inflation.



Annual inflation in SCA-H and SCA-I posted a marginal fall in the third quarter in line with the outlook for core goods and services prices (Chart 3.1.10). This fall was driven by the improvement in core goods prices amid the gradual waning of pass-through from the depreciation of the Turkish lira to inflation accompanied by the sluggish domestic consumption demand. The alternative core inflation indicators and diffusion indices monitored by the CBRT suggest that the underlying trend of inflation declined in the third quarter (Charts 3.1.11, 3.1.12 and 3.1.13). However, it should be noted that indicators on the underlying trend of inflation are currently above the target-consistent levels.

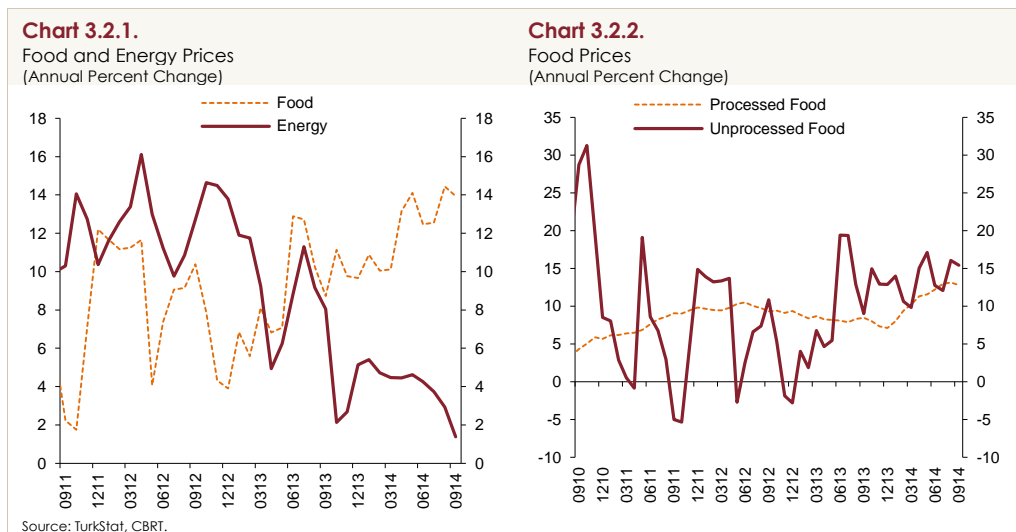


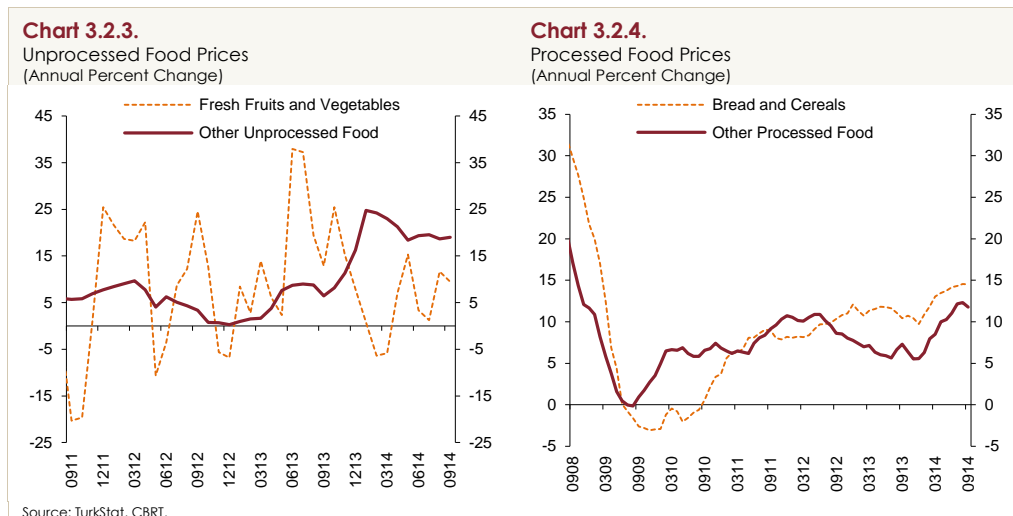


3.2. Food, Energy and Alcohol-Tobacco Prices

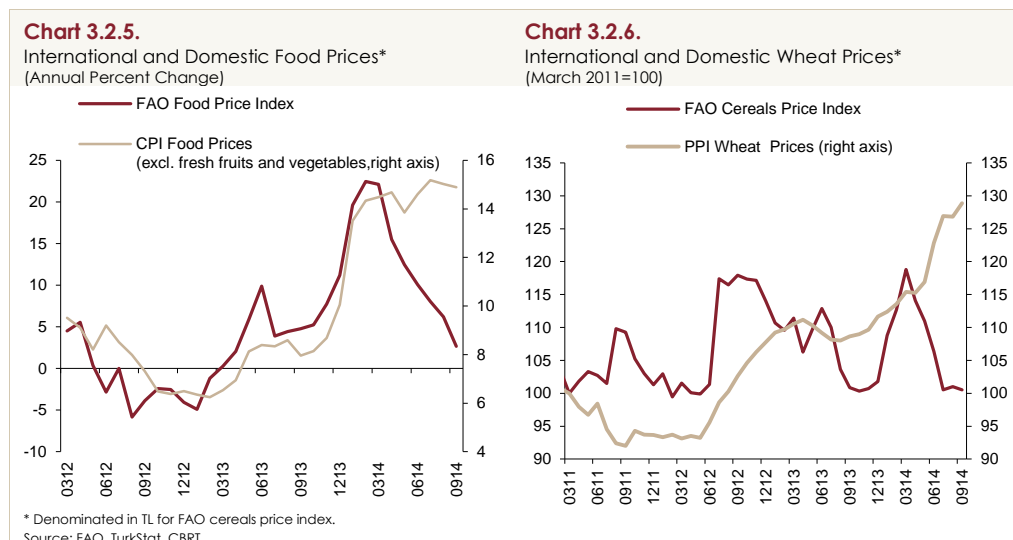
Annual food inflation increased to 13.95 percent in the third quarter, remaining above the July Inflation Report assumptions (Chart 3.2.1). Driven mostly by prices of fresh fruits and vegetables, this increase was attributed to supply-side constraints.

Annual unprocessed food inflation rose by 2.68 points quarter-on-quarter to 15.42 percent in the third quarter as the fall in prices of fresh fruits and vegetables remained limited (Chart 3.2.2). Vegetable prices, in particular, increased at a rate above historical averages in this period and annual inflation in other unprocessed food remained elevated (Chart 3.2.3). Meanwhile, processed food prices soared by 2.82 percent in the third quarter due to frost and drought, bringing the annual inflation in this category to 12.81 percent (Table 3.1.1 and Chart 3.2.2). The rise in annual inflation in processed food spread across subcategories (Chart 3.2.4).





International and domestic food prices continued to diverge abruptly in this period, mainly due to adverse effects of negative supply shocks in domestic production (Chart 3.2.5). International wheat prices remained on the decline in the third quarter, whereas domestic wheat prices continued to rise (Chart 3.2.6). On the other hand, the likely increase in the export demand due to Russia's embargo on some food products to certain countries may exert additional pressure on food prices, which are currently suffering from adverse weather conditions and exchange rate effects.



Energy prices followed a relatively flat course in the third quarter. In this period, the Turkish lira depreciated against the USD, while international oil prices fell by about 8 USD/bbl compared to the previous quarter's average. Accordingly, fuel prices decreased by 1.35 percent, whereas energy prices for home utilities edged up. As a result, annual energy inflation fell by 2.87 points to 1.38 percent in the third quarter, maintaining its mild course compared to other subcategories (Chart 3.2.1). Meanwhile, as stated in the July Inflation Report, electricity and natural gas prices were increased by 9 percent to be effective as of October mostly owing to the cumulative effects of the depreciation in the Turkish lira. This increase is expected to directly add about 0.4 points to consumer inflation.

Prices of alcoholic beverages and tobacco products fluctuated in the third quarter. Price increases on some cigarette brands besides lump sum tax hikes in alcoholic beverages in July were followed by falling prices in August and September, leaving the overall prices virtually unchanged on a quarterly basis.

3.3. Domestic Producer Prices

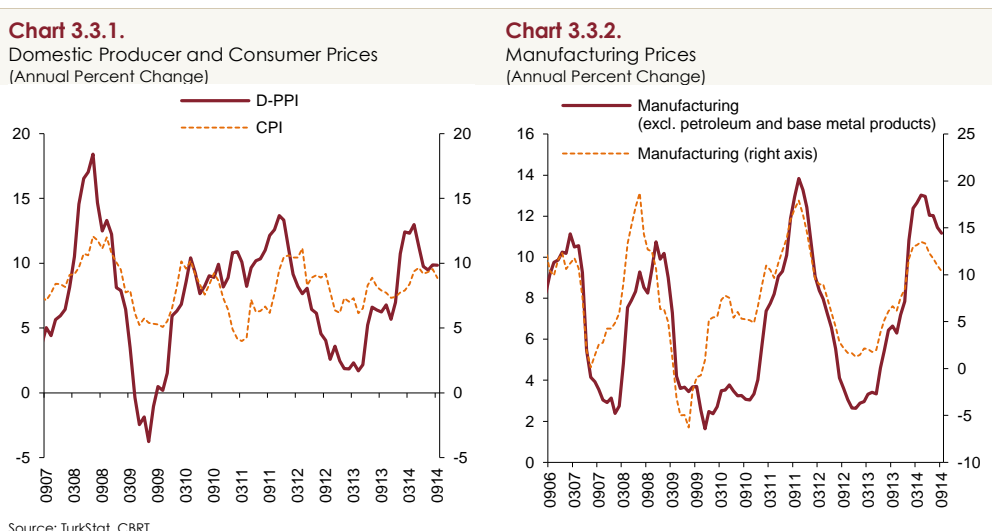
Domestic producer prices (D-PPI) rose by 2.02 percent in the third quarter of the year due to the rise in manufacturing prices (Table 3.3.1). Thus, annual D-PPI inflation remained almost unchanged quarter-on-quarter with 9.84 percent (Chart 3.3.1).

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

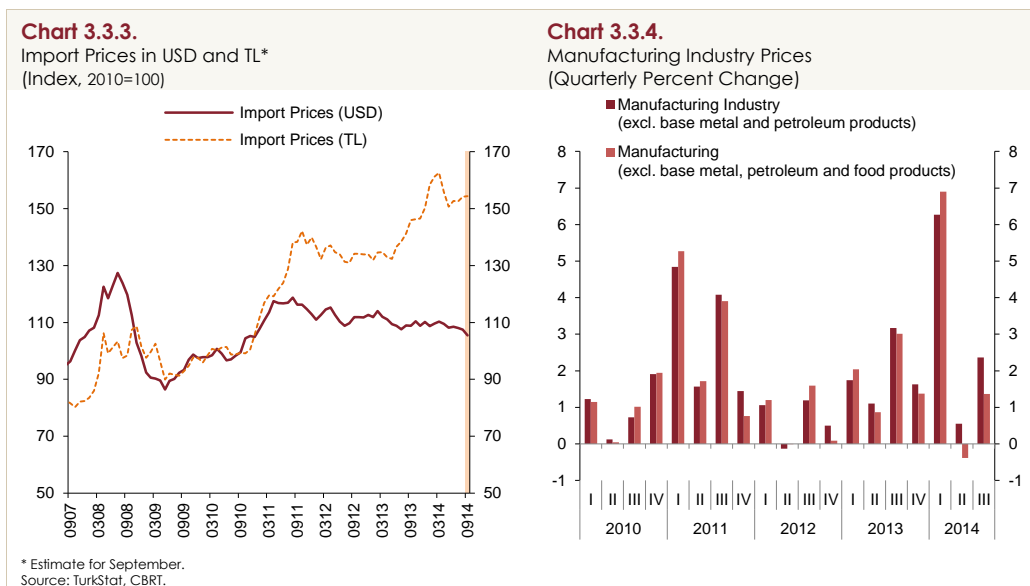
	2013			2014			
	III	IV	Annual	I	II	III	Annual
D-PPI	1.93	2.43	6.97	5.52	-0.38	2.02	9.75
Mining	4.60	1.49	12.64	4.91	-1.77	0.92	9.40
Manufacturing	3.97	1.50	8.45	6.29	0.11	2.18	12.29
Manufacturing (excl. petroleum products)	3.45	1.57	8.00	6.26	0.26	2.35	11.95
Manufacturing (excl. petroleum and base metal products)	3.17	1.63	7.85	6.27	0.55	2.37	12.04
Electricity and Gas	0.75	0.11	-11.16	-1.17	-4.85	1.01	-5.15
Water	1.29	2.28	10.77	3.66	2.29	0.95	9.85
D-PPI by Main Industry Groups							
Intermediate Goods	4.21	1.65	8.88	5.99	-0.57	1.45	8.68
Capital Goods	4.66	1.09	11.42	6.78	-1.04	1.18	8.08
Durable Goods	3.22	-0.15	0.51	8.47	-1.18	-0.50	6.49
Non-Durable Goods	2.39	2.23	8.24	5.79	2.18	4.79	15.80

Source: TurkStat, CBRT.

In the third quarter of the year, manufacturing industry prices rose by 2.18 percent, bringing the annual inflation down to 10.4 percent (Table 3.3.1 and Chart 3.3.2). Food manufacturing prices soared by 6 percent, while non-food manufacturing prices posted a mild increase of 0.9 percent amid the declining international oil prices in this period. The depreciation of the Turkish lira affected manufacturing industry prices adversely, yet the decreases in international commodity prices restricted this effect. In fact, USD-denominated import prices declined, while TL-denominated import prices were flat in the third quarter (Chart 3.3.3).

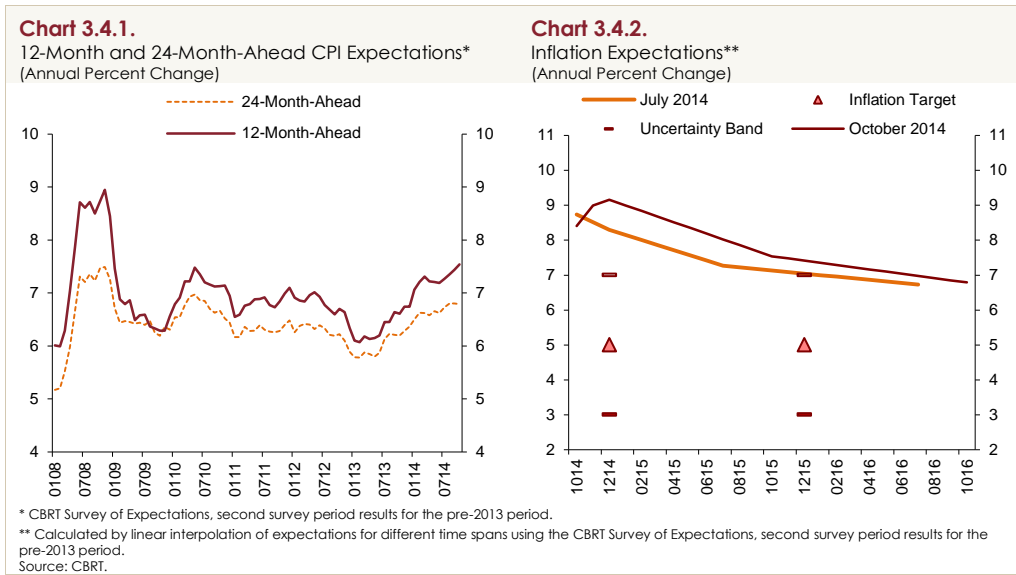


The prices of the manufacturing industry excluding petroleum and base metal products, which entail information on the underlying trend of producer prices, displayed an ongoing fall in annual inflation notwithstanding the acceleration in quarterly terms (Charts 3.3.2 and 3.3.4). However, excluding food prices, which challenge the monitoring of the underlying trend in both consumer and producer prices, a relatively mild course is observed despite a slight quarter-on-quarter increase (Chart 3.3.4). Prices of non-durable goods and other subcategories also performed differently in this period. In fact, prices of intermediate and capital goods posted limited increases, while the prices of non-durable goods continued to fall in the third quarter (Table 3.3.1). Overall, in line with the decline in import prices, international oil prices in particular, cost-side pressures on general prices posed by non-food sectors remained mild in the third quarter.

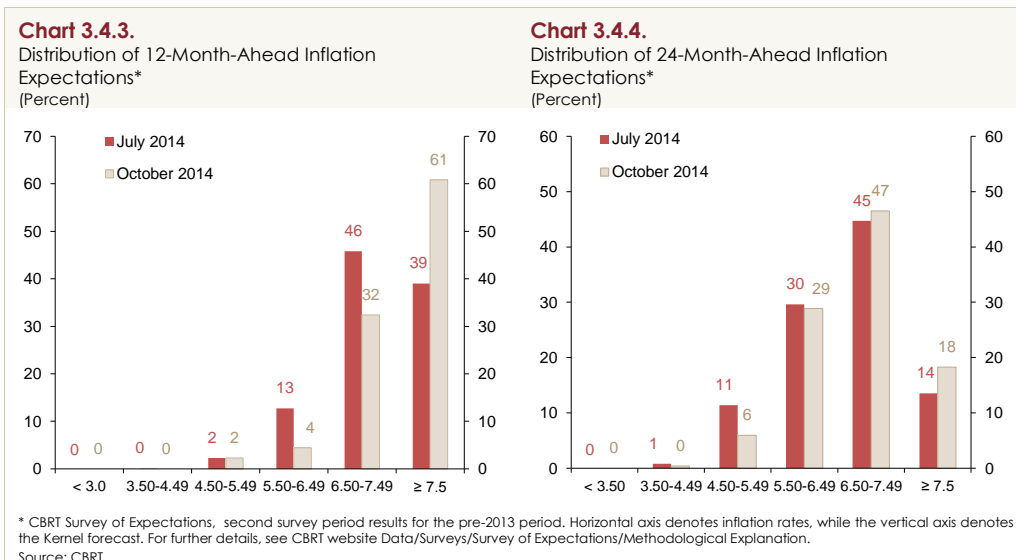


3.4. Expectations

Due to the persistently high course of consumer inflation, food inflation in particular, medium-term inflation expectations continued to deteriorate in the third quarter of 2014 (Chart 3.4.1). Even though price increases in electricity and natural gas drove the year-end inflation expectations up to 9.2 percent in October, the medium-term expectations remained virtually unchanged in the respective month. Compared to the previous quarter, 12-month-ahead inflation expectations proved higher in all maturities, with less notable deterioration observed for the period following July 2015 (Chart 3.4.2). Meanwhile, in October, inflation expectations hovered well above the 5 percent target set for end-2015.



The dispersion of medium-term inflation expectations indicates deterioration in inflation expectations compared to July (Charts 3.4.3 and 3.4.4). The percentage of respondents expecting 12-month-ahead inflation to be between 6.5 and 7.49 percent decreased in this period, while those expecting it to be 7.5 percent or above recorded a notable increase. The percentage of respondents expecting 12-month-ahead inflation to be above 6.5 percent increased from 85 percent to 93 percent in October. On the other hand, expectations for 24-month-ahead inflation posted only a slight deterioration.



Box
3.1

Sensitivity of Inflation to Output Gap and Credit

As of end-2010, the CBRT adopted a framework that observes loan growth through required reserve ratios, as an additional policy tool besides the main instrument of policy rates. Together with the macroprudential measures taken by the BRSA to restrict the excessive use of credits, implementing credit policy has been among the priorities of economic policy in the succeeding period. In this new framework, in addition to economic activity, credits were also closely monitored as a benchmark indicator to measure the net effect of the monetary policy stance in terms of tightening or easing.

Credits grew more influential in the policymaking process while also increasing in share as a percentage of national income. This expected consequence under economic convergence, on the other hand, necessitates a broader perspective in dealing with the question of “to what extent can consumer inflation be controlled through a traditional demand management channel”? Accordingly, the sensitivity of inflation to economic growth and credit growth helps to determine the monetary policy domain and the policy tools within the policymaking process.

This box summarizes the findings by Özmen and Sankaya (2014), which examines the relationship between credits and the CPI subcategories to identify credit-sensitive price categories. Based on Atuk et al. (2014), Phillips curve equations are estimated for 152 COICOP 5-digit price subcategories where credits are included as explanatory variable as follows:

$$\pi_t = c + \alpha\pi_{t-1} + \beta\tilde{y}_{t-i} + \sum_{k=0}^K \gamma_k \cdot \text{control}_1_{t-k} + \sum_{j=0}^J \delta_j \cdot \text{control}_2_{t-j} + \varepsilon_t, \quad i = 0, \dots, 6.$$

In the above equation, π_t is the inflation rate; \tilde{y} is the output gap or credits; control_1 and control_2 are exogenously determined control variables, which are TL-denominated import prices and wages; and ε_t is the error term. In order to check the statistical and economic significance of individual loan types, credits are included separately as the quarterly change in commercial, consumer and total loans in percent of national income. Consequently, the price subcategories for which β coefficient is found to be significantly positive are determined during the analyzed period ranging from 2004Q1-2014Q1.

The analysis results suggest that 47 sub-items, which make up 34 percent of the CPI, are sensitive to the output gap, while 60 sub-items that make up the 26 percent of the CPI are affected by credits.¹ On the other hand, determination of the sub-items affected by the output gap or credits will be enough to assess the demand-side domain of the current monetary policy implementation. Estimations suggest that 89 of 152 subcategories within the inflation basket are sensitive to the output gap or credits. The weight of these categories within the CPI is calculated as 52 percent (Table 1). In other words, almost half of consumer inflation is affected by output gap or credit.

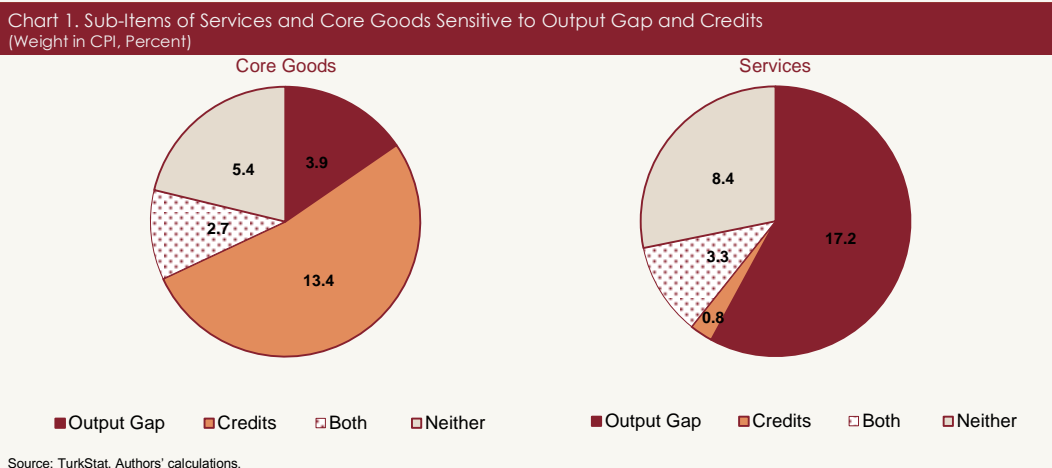
¹ Results on output gap sensitive CPI sub-items are based on Atuk et al. (2014), with further updates to Box 3.1 in the Inflation Report 2014-III.

	Number of Sub-Items			Weight in CPI (Percent)		
	Output Gap	Credits	Output Gap or Credits	Output Gap	Credits	Output Gap or Credits
Core Goods	15	34	42	6.7	16.2	20.1
Services	24	14	31	20.6	4.1	21.4
Food and Alcoholic Beverages	7	12	15	5.4	5.2	9.2
Energy	1	0	1	1.3	--	1.3
Total	47	60	89	34.0	25.6	52.1

Source: TurkStat, Authors' calculations.

Credit sensitive sub-items are mostly in the core goods, while the output gap is more influential in services (Table 1). Sub-items of CPI such as durable goods, home appliances and clothing, for which the demand can be advanced or postponed, are highly sensitive to financing conditions like loan rate, maturity structure and number of installments, which renders credits a more influential factor in the core goods inflation. However, the demand for services is affected by current income rather than credit conditions, which fortifies the relationship between economic activity and the services inflation.

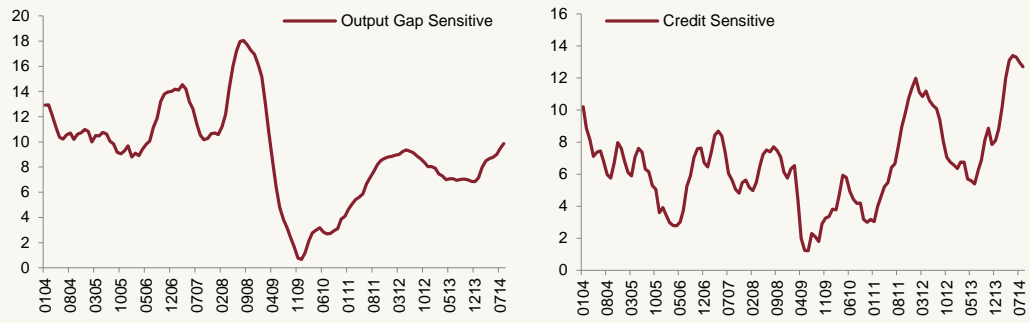
Findings obtained through this study also entail valuable information on the choice of core indicators used to monitor underlying inflation. Estimation results suggest that items corresponding to 5.4 percent of the CPI in the core goods group and 8.4 percent of the services group (two main components of the SCA-I index) are not influenced by the output gap or credits (Chart 1). Accordingly, about 75 percent of the SCA-I index is sensitive to the output gap or credits. Findings suggest that 25 percent of the SCA-I index is not influenced by the output gap or credits and that there are products in the food group, which is excluded from the index, that are sensitive to economic variables. These indicate that the use of alternative core inflation definitions may be required in analyzing inflation.



Annual inflation rates in subcategories sensitive to credits or the output gap indicate that the two series can move quite differently (Chart 2). This difference becomes more apparent in periods of divergence between domestic and external demand and/or extraordinary movements in import costs. This is because credits are sensitive to domestic demand conditions, whereas the output gap also entails information on external demand. Moreover, the two series also have different responsiveness to import prices and

exchange rates. For example, annual inflation increased in mid-2008 in sub-items sensitive to the output gap due to the robust course of external demand in addition to the surge in import prices, in contrast to its relatively mild course in categories sensitive to credits amid waning domestic demand. On the other hand, the jump in the inflation rates in both groups from the end of 2006 to early 2007 is attributable to the financial turmoil driven exchange rate effects rather than demand conditions. Similarly, the depreciation of the Turkish lira has affected both groups despite the recent slowdown in the economic activity and the aggregate demand.

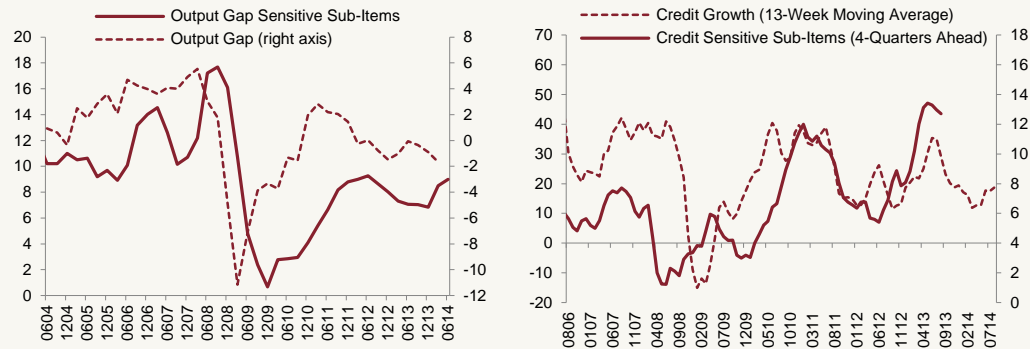
Chart 2. Annual Inflation in Sub-Items of CPI Sensitive to the Output Gap and Credits (Percent)



Source: TurkStat, Authors' calculations.

The effect of credits on inflation appears with a lag compared to the effect of the output gap (Chart 3). A great portion of the effect of the output gap on inflation is seen within a year, while the influence of credits on inflation may be observed between 12 to 18 months. After registering 35 percent growth in mid-2013, the currently reasonable levels in the credit growth rate due to tight monetary policy stance and the adopted macroprudential measures will help reduce inflation in 2015.

Chart 3. Co-movement of Output Gap and Credits with Annual Inflation in Sub-Items of CPI Sensitive to the Output Gap and Credits (Percent)



Source: TurkStat, Authors' calculations.

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- Özmen, M. U. and Ç. Sankaya, 2014, Enflasyonun Çıktı Açığı ve Kredilere Duyarlılığı (in Turkish), CBT Research Notes in Economics No. 14/17.

