

3. Inflation Developments

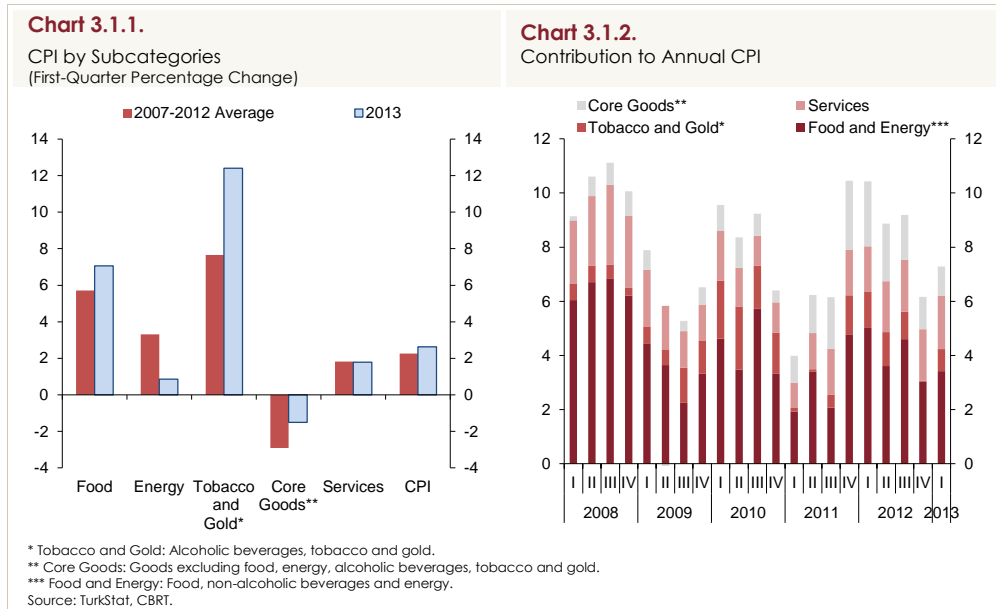
3.1. Inflation

In the first quarter of 2013, annual consumer inflation increased by 1.1 percentage points quarter-on-quarter to 7.29 percent. This was driven by price increases in unprocessed food and tobacco products. In this period, the annual core inflation continued to trend downwards, albeit at a slower pace; while, services inflation posted a limited rise. The limited recovery in economic activity contributed positively to inflation outlook; and the weak course of cost-side pressures in the same period brought about a mild outlook in core inflation indicators. However, in the first quarter, inflation stood above the path projected in the January Inflation Report, mainly upon the higher-than-expected rise in unprocessed food prices.

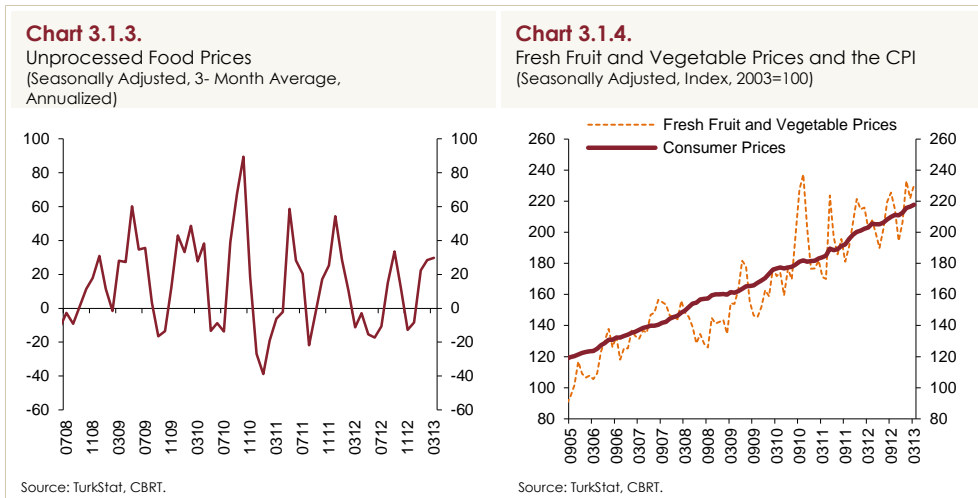
Across subcategories, rates of quarterly price changes in food, tobacco and gold as well as core goods stood above the averages of past years; while energy price inflation was more favorable in the first quarter (Chart 3.1.1). The rise in consumer prices in this period was driven by unprocessed food prices, the annual inflation of which surged by around 10 percentage points. The contribution of unprocessed food prices to inflation increased by 1 percentage point compared to the end of 2012 (Chart 3.1.2). In the same period, the contribution of the tobacco and gold prices to inflation rose by 0.79 percentage points due to the delivered tax rate hike to tobacco products in January, while the contribution of energy prices fell by 0.63 percentage points. In this period, the contribution of services and core goods to inflation remained unchanged.

In sum, the favorable course of international commodity prices in the first quarter, the stable course of exchange rates and the limited recovery in economic activity contributed positively to the inflation outlook. Yet, annual inflation went up as a result of inflation in unprocessed food and tobacco products. In the forthcoming period, unprocessed food prices are expected to remain as the determinant factor on the consumer inflation. Unprocessed food inflation is expected to follow a volatile course in the second and third quarters, and will rise in the last quarter owing to the low base in the last quarter of 2012. Meanwhile, the rate of price increases in processed food, services and core goods is estimated to decelerate slightly in the rest of the year. Lastly, in order to

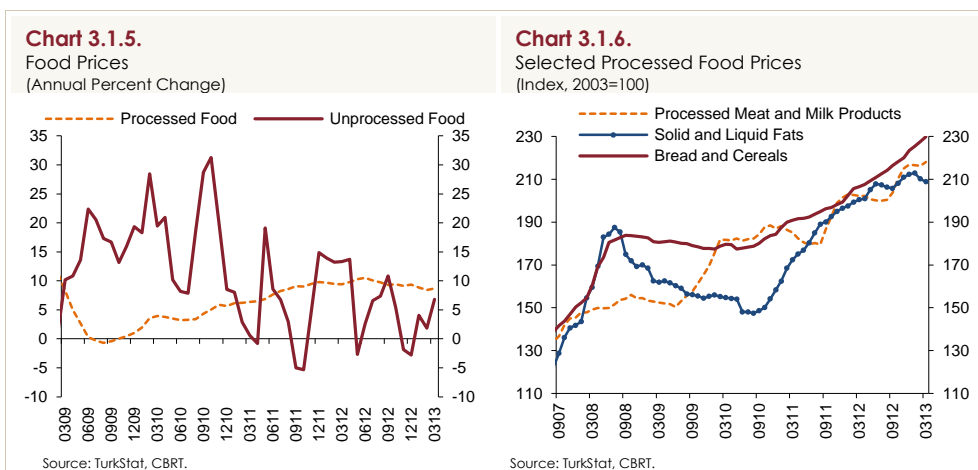
attain the projected levels in the consumer inflation, maintaining the current mild outlook in energy prices as well as limiting administered energy price hikes are of utmost importance.



Seasonally adjusted unprocessed food prices, which plummeted in the last quarter of 2012, soared in the first quarter of the year (Chart 3.1.3). Thus, unprocessed food prices, which receded exceptionally in 2012, were subject to a higher-than-envisioned correction. This was mainly driven by the prices of fresh fruits and vegetables, which once again remained above the headline consumer price level (Chart 3.1.4). In particular, fresh vegetable prices registered the highest quarterly increase of the index history (42 percent). In this period of relatively more favorable weather conditions, and a limited rise in the producer prices of crops besides fruits and vegetables, the higher-than-envisioned increase in the prices of fresh fruits and vegetables continue to create a significant source of uncertainty in the short term on the unprocessed food and consumer inflation. Meanwhile, the annual inflation in unprocessed food prices excluding fruits and vegetables remained mild at 1.68 percent, despite having registered an increase due to white meat prices. As a result, annual inflation in unprocessed food surged by 9.6 percentage points to 6.79 percent in the first quarter. This rise accounted for approximately 1-percentage point of the 1.1 percent increase of the annual CPI inflation in the same period.



Prices of processed food went up by 1.63 percent in the first quarter, a rate below historical averages; while annual processed food inflation posted a limited decline to 8.71 percent (Chart 3.1.5 and Table 3.1.1). As for bread and cereals, which were influential on the course of processed food inflation throughout 2012, the prices continue to trend upwards, albeit at a slower pace. In spite of the decline in international wheat prices, domestic wheat prices remained on an upward track. Accordingly, further increases were recorded especially in bread prices. As for processed food prices excluding bread and cereals, annual inflation registered a decline mainly upon the downtrend in fats and oils. On the other hand, upon the enforcement of the amendment to the Turkish Food Codex Notification on Meat and Meat Products in March, prices of processed meat products soared. Although higher prices of processed meat products pushed prices of processed food upwards in the short term, processed food prices are expected to follow a downtrend in the remainder of the year (Charts 3.1.5 and 3.1.6).



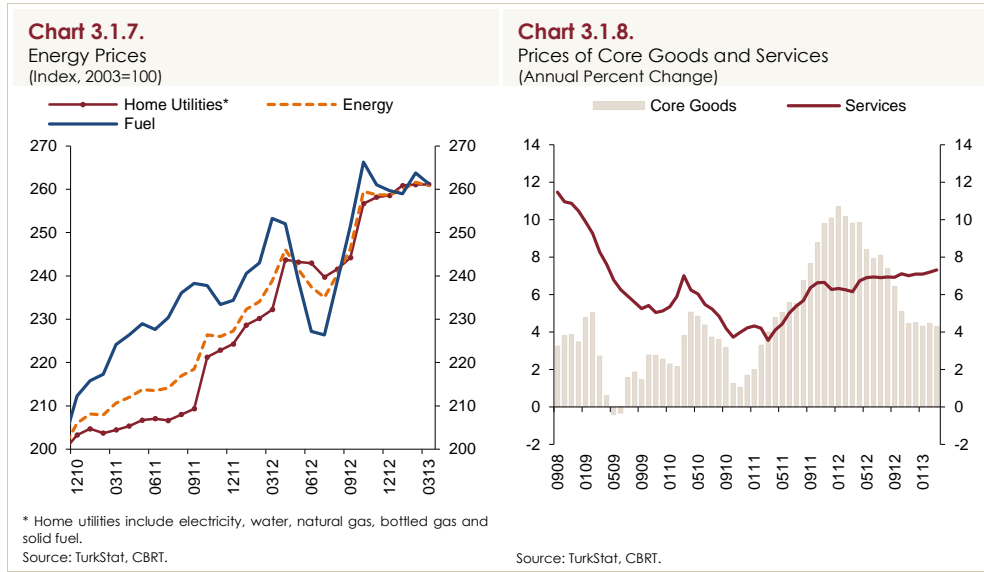
In sum, food inflation, which stood at 3.90 percent in 2012, climbed to 8.10 percent in the first quarter of 2013 due to unprocessed food prices. Thus, food inflation went above the projections of the January Inflation Report.

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

	2012					2013
	I	II	III	IV	Annual	I
CPI	1.55	0.39	1.36	2.74	6.16	2.63
1. Goods	1.54	-0.19	1.12	3.25	5.82	2.95
Energy	5.08	-0.57	3.70	5.02	13.79	0.86
Food and Non-Alcoholic Beverages	2.89	-5.85	4.01	3.12	3.90	7.06
Unprocessed Food	3.66	-14.76	7.01	2.82	-2.78	13.87
Processed Food	2.25	1.55	1.92	3.35	9.37	1.63
Goods (excl. energy and food)	-1.14	4.78	-2.24	2.50	3.78	0.92
Core Goods	-1.32	5.88	-2.93	3.03	4.49	-1.52
Durable Goods (excl. gold)	1.41	-0.05	-0.69	-0.48	0.17	2.54
Alcoholic Beverages, Tobacco and Gold	-0.33	-0.17	1.03	0.04	0.57	12.41
2. Services	1.57	1.96	2.00	1.38	7.09	1.78
Rent	0.89	1.27	1.59	1.61	5.46	1.25
Restaurants and Hotels	1.99	2.62	2.66	1.74	9.31	2.07
Transport	2.12	1.79	3.21	0.81	8.16	1.88
Communication	0.06	2.07	1.79	3.00	7.08	0.40
Other Services*	2.24	2.00	1.27	0.41	6.04	2.58

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

Energy prices edged up by 0.86 percent in the first quarter of the year (Table 3.1.1). Developments regarding international oil prices were influential on the course of energy price inflation. Amid the mild course of international oil prices in the first quarter, domestic fuel prices saw the lowest first quarter increase of the index history (0.60 percent). Meanwhile, bottled gas prices also plummeted in this period (Chart 3.1.7). On the other hand, water prices soared by 5.62 percent, increasing faster than the past years' average, and thus curtailing the favorable outlook in energy prices. Consequently, annual energy price inflation, which soared in the last year due to tax and public price adjustments, went down by 4.57 percentage points to 9.22 percent in the first quarter. In the rest of the year, energy prices are expected to maintain the currently mild course and annual inflation will continue to taper off due to base effect.



The downtrend in annual core inflation continued at a slower pace and inflation went down to 4.3 percent in the first quarter of the year (Chart 3.1.8). On the other hand, core inflation posted a quarter-on-quarter increase in seasonally adjusted terms (Chart 3.1.9). Annual inflation in durable goods, which decreased throughout 2012, climbed to 1.29 percent in the first quarter as the effects of the depreciated Turkish lira on inflation tapered off (Chart 3.1.10). Analysis of the subcategories implies that this rise is driven by the increases in the prices of automobile and furniture (Table 3.1.2). Despite the mild course of TL-denominated import prices, annual inflation in durable goods is projected to trend upwards in the forthcoming period amid the recovery of the domestic demand. Unlike durable goods, annual inflation in other core goods is on a downward track. In the first quarter of the year, clothing prices registered a higher seasonal decline than the last year, and annual inflation went down to 6.44 percent. Effects of hikes to customs duty, which have been brought to effect by protection measures on imports of textiles and ready-wear adopted in 2011, on inflation are still visible, albeit at a diminishing pace. As for the clothing and core goods excluding durables, which experience the reverberations of the depreciated TL on a longer horizon, inflation has been slowing down since the second half of 2012. In annualized terms, inflation, which was 5.79 percent in March, is estimated to continue to decline gradually (Chart 3.1.10 and Table 3.1.2).

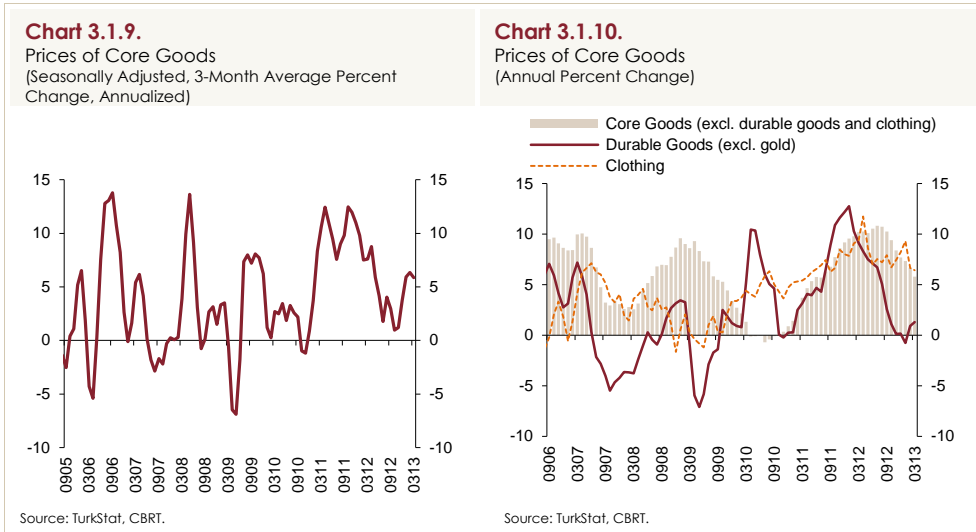
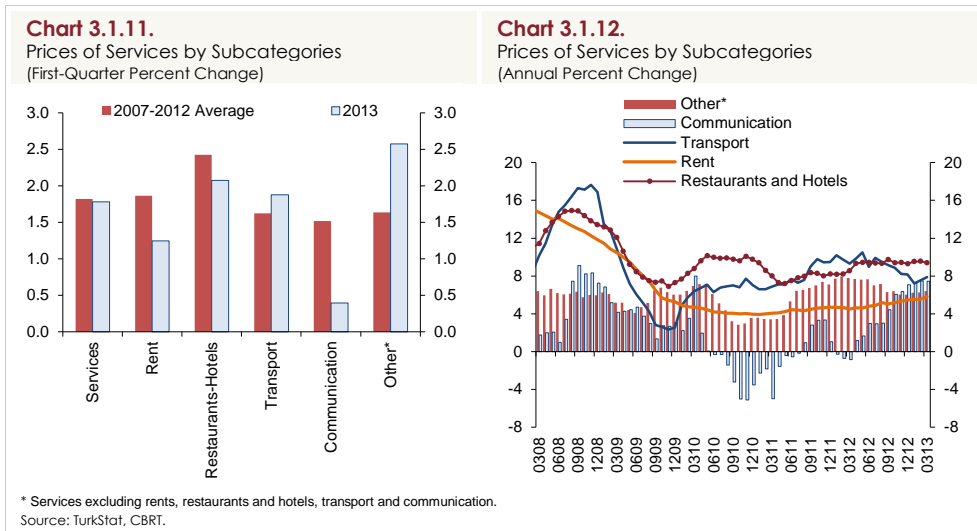


Table 3.1.2.
Prices of Core Goods
(Quarterly and Annual Percent Change)

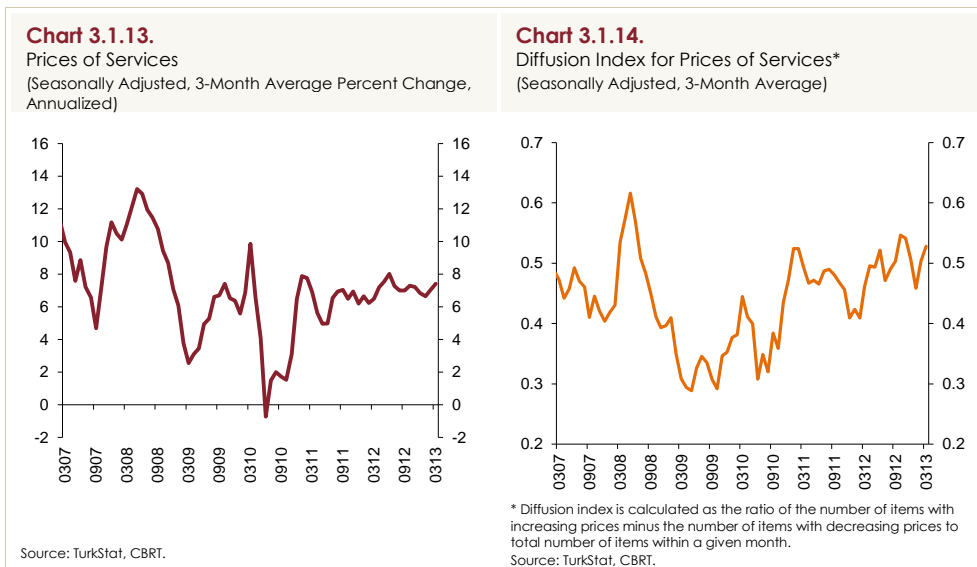
	2012					2013
	I	II	III	IV	Annual	I
Core Goods	-1.32	5.88	-2.93	3.03	4.49	-1.52
Clothing and Shoes	-10.90	22.34	-11.37	12.00	8.20	-12.35
Durable Goods (excl. gold)	1.41	-0.05	-0.69	-0.48	0.17	2.54
Furniture	3.19	1.76	-0.58	1.84	6.33	4.09
Electrical and Non-Electrical Appliances	0.94	-2.75	-0.65	-0.96	-3.41	0.18
Automobile	1.09	0.42	-0.82	-1.07	-0.40	3.03
Other Durable Goods	1.22	3.13	0.69	0.54	5.68	1.05
Other	2.76	2.42	1.28	1.05	7.71	0.93

Source: TurkStat, CBRT.

Annual services inflation edged up by 0.23 percentage points to 7.32 percent on a quarterly basis (Chart 3.1.8). Excluding for transport and other services, price increases in the first quarter lagged behind the past years' average across overall services (Chart 3.1.11). An analysis of the year-on-year change in services prices by March suggests that inflation in prices of restaurants and hotels remained flat above the overall services inflation; while inflation in other items of services has remained on an upward path since end-2012 (Chart 3.1.12). However, services inflation still remained below historical averages, thus implying that the effects of the economic activity, which has decelerated throughout 2012, besides the stable course of exchange rates are still influential.

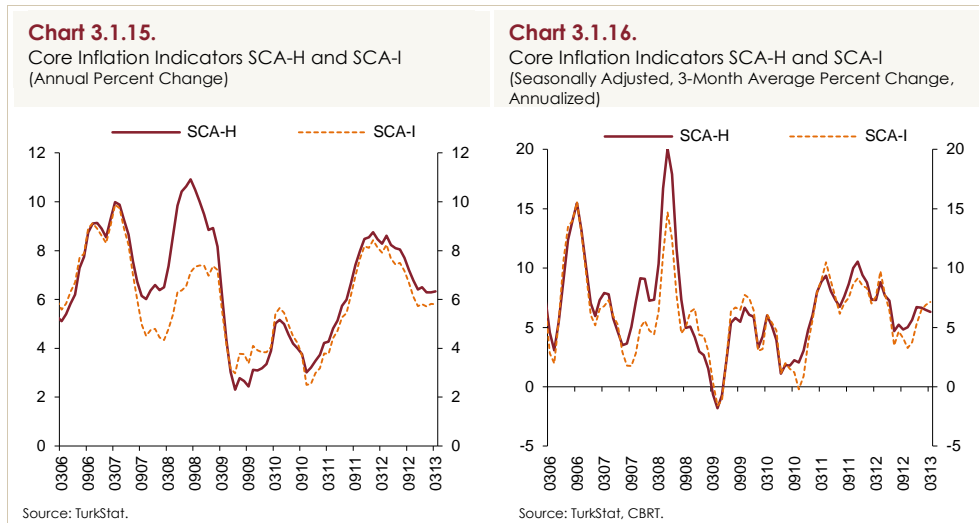


Seasonally adjusted data entail more reliable information about the underlying trends. Accordingly, services inflation in seasonally adjusted terms exhibited an upward trend in the first quarter of the year (Chart 3.1.13). Meanwhile, rent inflation in seasonally adjusted terms, which hovered below services inflation, has continued to remain on a moderately upward course. These findings, in addition to the recent increase in the diffusion index, imply that price increases are more widespread and higher-rated across services sectors.

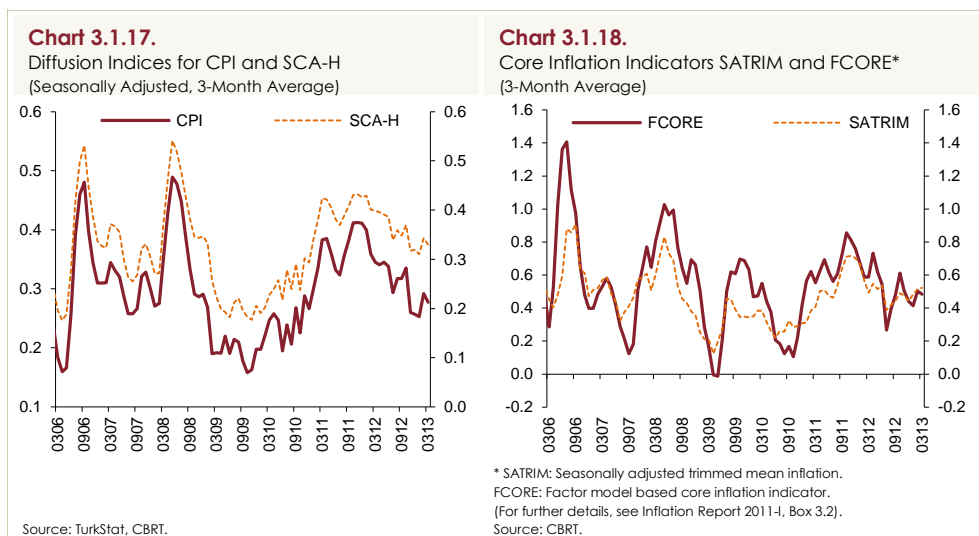


In the first quarter of the year, annual inflation in SCA-H and SCA-I, one of the core inflation indicators, stood at 6.33 and 5.80 percent, respectively (Chart 3.1.15). Despite the deceleration in core inflation, annual inflation in SCA-I

remained flat due to the limited rise in the services inflation; whereas the SCA-H indicator edged down upon the decelerating processed food inflation. In seasonally adjusted terms, both indicators trended upwards (Chart 3.1.16). In fact, seasonally adjusted prices of both core goods and services registered quarter-on-quarter increases in this period.



Diffusion indices of the CPI and SCA-H edged up in the first quarter (Chart 3.1.17). Similarly, alternative core inflation indicators monitored by the CBRT increased slightly compared to the end of 2012 (Chart 3.1.18). Diffusion of the prices of services and core goods also recorded increases in the first quarter. In sum, the analysis of core inflation indicators alongside diffusion indices and alternative core indicators points to a rise in the underlying trend of inflation compared to the end of 2012.



Although agricultural prices remained broadly unchanged in the first quarter of 2013, producer prices soared by 0.50 percent upon the increases in the manufacturing industry prices. On a quarterly basis, annual rate of increase in producer prices edged down by 0.15 percentage points to 2.30 percent. As for agricultural prices; prices of crops, fruits and vegetables rose by 2.32 percentage points in this quarter, registering an annual inflation rate of -3.58 percent. In the said period, livestock prices went below historical averages with a decline of 8.18 percent. Thus, annual inflation in agricultural prices receded to -5.77 percent by the end of the first quarter. The mild course of agricultural prices in the first quarter was not proportionately reflected on consumer prices through fresh fruits and vegetables. However much parallel outlook they exhibit in the long term, the occasional difference between producer and consumer prices in this subcategory is one of the main factors that accounts for the divergence between the headline inflation rates in the PPI and CPI (Box 3.1).

Table 3.1.3.

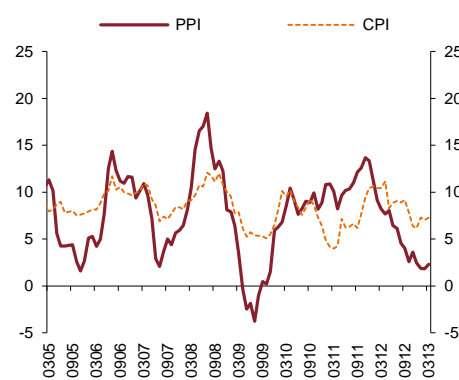
PPI and Subcategories
(Quarterly and Annual Percent Change)

	2012					2013
	I	II	III	IV	Annual	I
PPI	0.65	-0.89	0.97	1.72	2.45	0.50
Agriculture	1.65	-3.36	0.91	-3.31	-4.17	-0.06
Crops, Fruits and Vegetables	0.76	-3.75	2.82	-4.78	-5.05	2.32
Livestock and Animal Products	-0.28	-2.44	-0.16	-0.29	-3.15	-8.47
Industry	0.45	-0.37	0.98	2.74	3.83	0.61
Mining	0.90	2.24	2.13	0.13	5.49	3.90
Manufacturing	1.06	-0.83	1.22	-0.17	1.27	1.87
Manufacturing (excl. oil)	0.79	-0.36	0.87	0.18	1.48	1.75
Manufacturing (excl. oil and base metals)	0.93	-0.09	1.15	0.48	2.50	1.76
Electricity, Gas and Water	-4.64	2.57	-1.41	28.21	23.64	-11.28

Source: TurkStat, CBRT.

Chart 3.1.19.

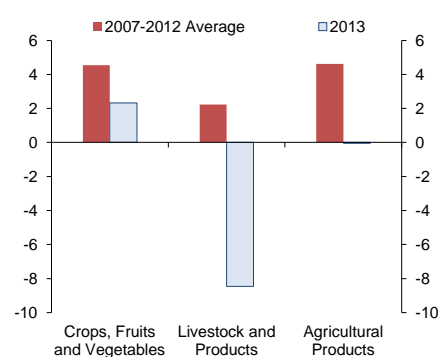
PPI and CPI
(Annual Percent Change)



Source: TurkStat.

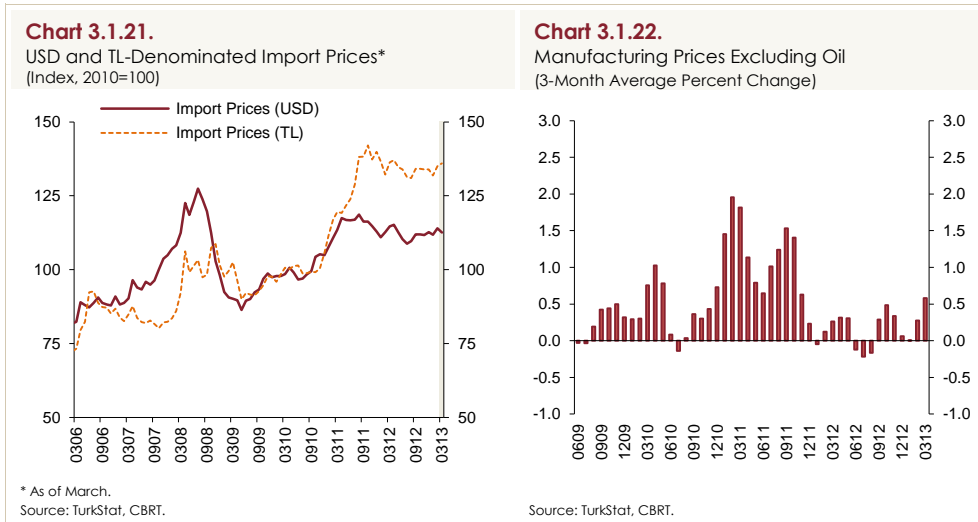
Chart 3.1.20.

Agricultural Prices
(First-Quarter Percent Change)



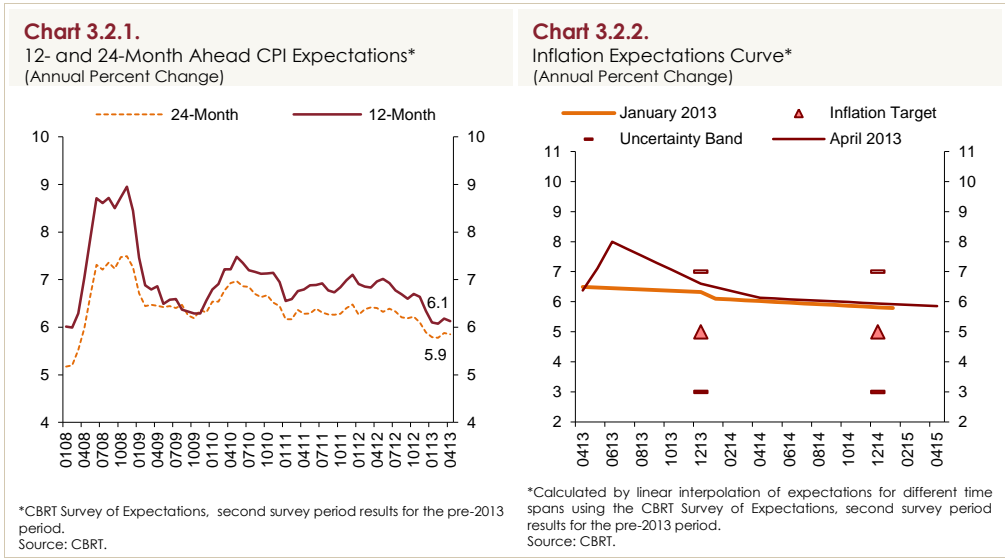
Source: TurkStat.

Amid the stable exchange rate and the mild course of commodity prices, manufacturing prices increased by 0.90 percent in the first quarter of 2013, a lower rate compared to the historical averages (Chart 3.1.20). Import prices registered a minor quarterly increase in this period (Chart 3.1.21). Manufacturing industry prices excluding oil rose by 1.75 percent in this quarter and registered an annual inflation rate at 2.44 percent by posting a quarter-on-quarter increase by 0.97 percentage points. Prices of intermediate goods, capital goods and non-durable consumption goods increased in this period; while durable goods saw falling prices. The decline in the prices of durable goods was driven by the fall in manufacturing prices of jewelry and furniture. Meanwhile, manufacturing prices of food products were influential on soaring prices of non-durable consumption goods. In sum, having accelerated in the first quarter of 2013, manufacturing industry prices excluding oil do not currently exert an apparent cost pressure on consumer prices. The analysis of the relationship between the minimum wage, one of the cost factors, and the PPI inflation is exhibited in the Box 3.2.

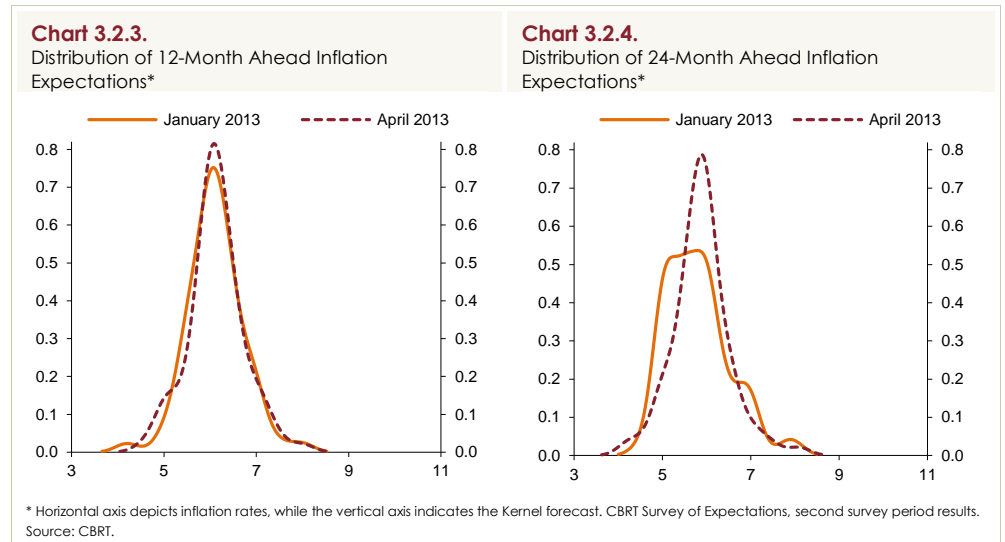


3.2. Expectations

Despite the rise in headline inflation in the first quarter of 2013, medium-term inflation expectations followed a flat course in line with the mild outlook of core inflation indicators (Chart 3.2.1). The analysis by maturities shows that short-term inflation expectations posted a quarterly increase, and the target-expectations spread narrows at longer horizons (Chart 3.2.2). Currently, inflation expectations still hover above the inflation target of 5 percent set for end-2013 and 2014.



The dispersion of respondents' 12-month ahead inflation expectations posted a limited rise in the inter-reporting period, while the dispersion of respondents' 24-month ahead inflation expectations increased remarkably in the same period (Charts 3.2.3 and 3.2.4).



Box
3.1

Reasons Underlying the Divergence Between the CPI and PPI Inflation Rates

Considerable differences exist between consumer and producer price indices in terms of definition and scope, which can bring about divergence in inflation rates. As for the definition, the major difference is the tax effect; while for the coverage, the most crucial difference is the presence of the services prices, which exhibits a different dynamic compared to the prices of goods, under consumer prices. Even when administered prices and services are excluded, the structural and cyclical factors affecting production-cost-pricing chain (market structure, cyclical conditions in the economy, price adjustment frequency etc.) can prevent a one-to-one and contemporaneous pass-through from producer prices to consumer prices. This Box analyzes subcategories of inflation that cause divergence between the CPI and PPI inflation.

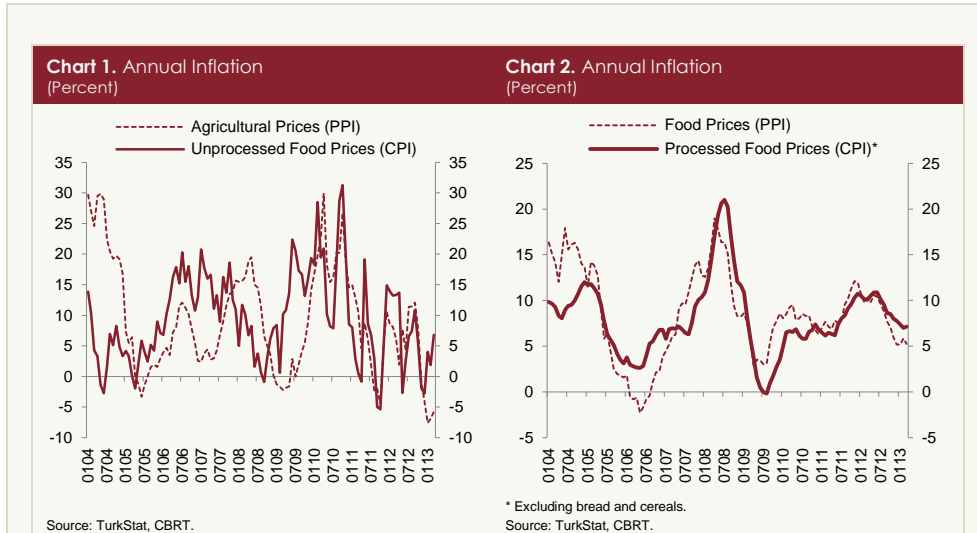
Food Prices: An analysis of processed and unprocessed products demonstrates that agricultural and unprocessed food prices move in tandem with each other (Chart 1). Periods of divergence between producer and consumer prices mostly reflect the effects of price shocks on products which are not under production due to seasonal reasons (not included in the PPI); yet included in the consumer basket. Table 1 shows what percentage of fresh fruits and vegetables, which are included in 2013 CPI basket, are simultaneously included in the PPI basket. Clearly, coverage of the two baskets is subject to change from month to month.

Table 1. 2013 The Simultaneous Coverage of Fresh Fruits and Vegetables under CPI and PPI (Percent)

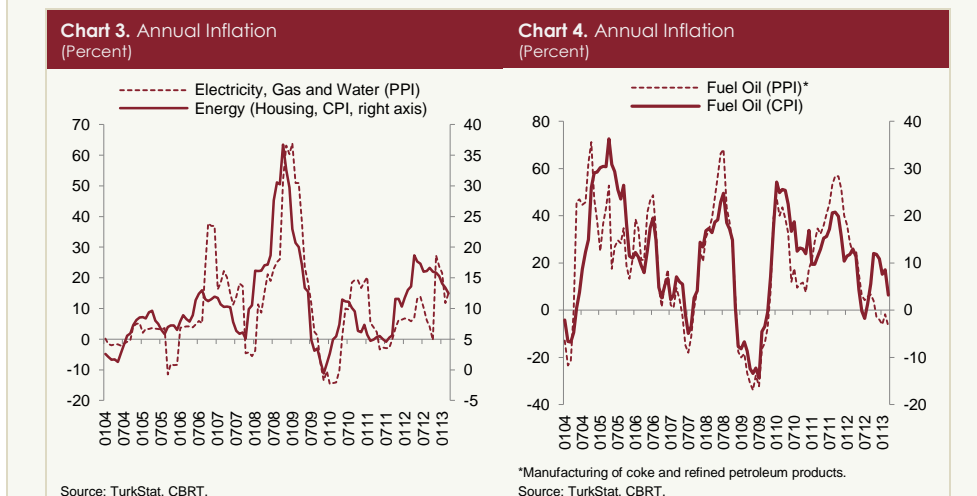
Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
53.3	53.3	41.4	26.1	78.3	73.1	85.7	82.1	80.8	87.5	66.7	56.7

In addition, price developments in January 2013 constitute a good example for the effects of the divergences between producer and consumer baskets. Prices of products included in the consumer basket, but not included in the producer basket (tomato, pepper, squash and eggplant) increased by more than 40 percent in January. This led to an increase in CPI inflation, while no change in PPI inflation, thus causing a widening of the gap between two indices.

As for processed food prices, excluding for bread and cereals, a close relationship is evident with manufacturing prices of food products (Chart 2). More specific analysis of food prices indicates that the monthly relation between consumer and producer inflation is not "one-on-on"; and only reasonably selected subcategories may display a meaningful parallelism.

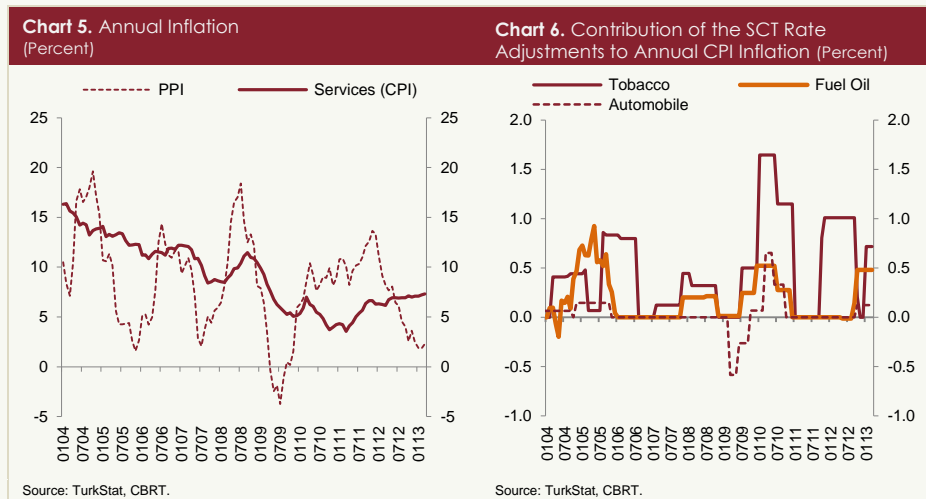


Energy Prices: Electricity, gas and water prices in the PPI are included in the housing subcategory of the CPI, while fuel oil prices in the CPI match with the manufacturing of refined petroleum products in the PPI. Electricity, gas and water prices move similar to energy prices in housing subcategory of the CPI (Chart 3). It should be highlighted at this point that temporary price movements between producer and distributor organizations may be observed in electricity, gas and water prices in the PPI, but these occasional price changes are not reflected to final consumers (industry and household). As for the fuel oil prices, due to the high tax rates, significant changes in producer prices are not proportionately reflected to consumer prices (Chart 4). Moreover, fuel oil prices in CPI are subject to frequent SCT rate adjustments.¹



¹ The correlation between CPI and PPI in fuel oil is 0.84, and rises to 0.94 when adjusted for the tax rate changes.

Prices of Services: Services is a relatively closed sector with a lower competitiveness in both external and domestic market compared to the goods sector. Also, in terms of cost composition, prices of services are subject to a weaker pass-through from import prices and exchange rate to final prices. The lower frequency of average price adjustment than the goods prices (arising from wage adjustments, lease contracts, lack of competitiveness etc.) leads to a remarkable inertia in services inflation (Chart 5). On contrary, prices of services in PPI are mostly determined by international prices as well as the exchange rate, and respond quite rapidly to changes in these prices. Therefore, prices of services are one of the major drivers of the divergence between consumer and producer prices.



Taxes: The main methodological difference between consumer and producer prices is the exclusion of taxes from producer prices. More specifically, high-rated tax changes may be observed in certain goods like tobacco products, fuel oil and durable goods, which are subject to the SCT. The contribution of the SCT rate adjustments to fuel oil, tobacco products and automobile to annual CPI inflation is displayed in Chart 6. These adjustments explain a major portion of the difference between the producer and consumer prices of the respective goods.

Leaving aside the divergence between annual inflation rates from month to month, the headline indices and the subcategories, which are expected to be inter-related, do not exhibit a notable difference in average annual inflation (Table 2). The effect of tax adjustments, which are not significant for other subcategories, can evidently be observed in tobacco and fuel products.

Table 2. Average Annual Inflation in Selected Subcategories in January 2004-March 2013 (Percent)

PPI	8.3
CPI	8.4
Agricultural Prices (PPI)	9.2
Unprocessed Food (CPI)	9.5
Manufacturing of Food (PPI)	8.5
Processed Food Excluding Bread and Cereals (CPI)	8.0
Electricity Gas and Water (PPI)	10.1
Housing Energy Prices (CPI)	10.7
Tobacco Products (PPI)	5.3
Tobacco Products (CPI)	15.4
Fuel Oil (PPI)*	20.0
Fuel Oil (CPI)	11.0

* Manufacturing of coke and refined petroleum products.

Factors such as the market structure, cyclical conditions of the economy and price adjustment frequency can prevent the producer and consumer prices pass-through from being one-on-one and contemporaneous even in the smallest detail possible. However, in the long term, the CPI and PPI do not remarkably diverge from each other; and tax adjustments constitute the major source of divergence across subcategories. Meanwhile, the divergence between highly volatile agricultural and unprocessed food prices widens in times of marked shocks to prices of products that are not produced due to seasonal conditions (not included in the PPI), yet included in the consumer basket. In fact, as for the last quarter, a sizeable portion of the difference between annual inflation in CPI and PPI, which stood at 7.3 and 2.3 percent, respectively in March 2013, can be explained by the tax effect on tobacco and fuel oil prices as well as the gap between unprocessed food and agricultural prices. In other words, these three items account for around 2.7 percentage points of the 5-percentage point difference between CPI and PPI inflation in March.

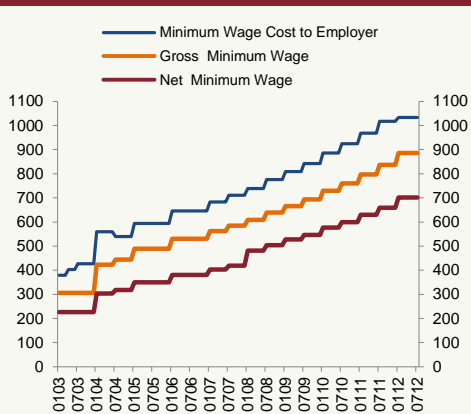
Box
3.2

Minimum Wage, Employer's Cost and PPI Inflation

Being considerably common and also constituting a reference for wages in the economy, minimum wage enlightens the course of labor costs in the production function of firms. Determination of the possible effect of the change in costs to producer prices is significant in terms of inflation developments. Accordingly, taking into account of the sectoral differences in employing unskilled labor force, this Box empirically analyzes whether the changes in minimum wage are reflected to PPI inflation.

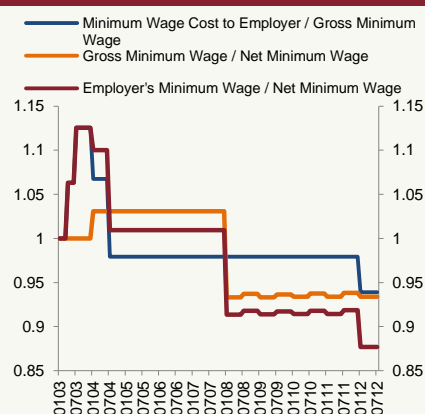
Minimum wage in Turkey is determined by the Minimum Wage Determination Commission. In addition to the net and gross minimum wage, the cost of minimum wage to the employer is also announced owing to the existence of social security premiums. The net and gross minimum wage besides the employer cost since 2003 are depicted in Chart 1.

Chart 1. Minimum Wage in Turkey
(Aged 16 years and over, Current Prices)



Source: Ministry of Labor and Social Security.

Chart 2. Relative Minimum Wage in Turkey
(January 2003=1)



Source: Ministry of Labor and Social Security.

In economic terms, the course of employers' cost is more influential for production costs. The employers' cost remained above the net and gross minimum wage throughout the sample. However, changes in the social security contribution of the employer also caused the relative course of minimum wage and employers' cost to vary (Chart 2).² Thus, the employers' cost follows a relatively higher course than the net minimum wage in the first period of the sample, whereas in the last period, the employers' cost increased relatively slower than the net minimum wage.

² Changes in the social security contribution of the employer include raising and lowering of the base wage, which constitute the basis for the SSI premium, in 2003 and 2004, respectively, and the incentive, the scope of which was expanded later on, for the reduction of the employers' share in the SSI premium that was enforced in July 2008.

Minimum wage is also influential on wages in the economy as a whole. The analysis of Household Labor Survey data indicates that the minimum wage both constructs the mode of the wage distribution and shifts the distribution over time (Chart 3).



The empirical part of the study analyzes the effect of changes in the employer's cost of minimum wage on producer prices. The adopted strategy and the hypothesis to identify this effect are as follows: Employees subject to minimum wage are mostly constituted from unskilled labor. Therefore, an increase in the minimum wage is expected to more heavily affect those sectors with higher shares of unskilled labor within total factor payments. Accordingly, the estimated econometric equation is shown in Model 1. Meanwhile, Model 2 analyzes the effect of the differentiation between the cost of minimum wage to the employer and the net minimum wage on the PPI inflation.

Model 1:

$$Y_{s,t} = \alpha_{0,s} Y_{s,t-1} + \alpha_1 \text{uls}_s \times X_{1,t} + \alpha_2 \text{uls}_s \times X_{1,t-1} + \gamma_s + \omega_t + \gamma_s \times t + e_{s,t} \quad (1)$$

Model 2:

$$Y_{s,t} = \alpha_{0,s} Y_{s,t-1} + \beta_1 \text{uls}_s \times X_{2,t} + \beta_2 \text{uls}_s \times X_{2,t-1} + \beta_3 \text{uls}_s \times (X_{1,t} - X_{2,t}) + \beta_4 \text{uls}_s \times (X_{1,t-1} - X_{2,t-1}) + \gamma_s + \omega_t + \gamma_s \times t + e_{s,t} \quad (2)$$

where,

$Y_{s,t}$: The monthly increase in producer prices in sector s , at period t

$X_{1,t}$: The monthly increase in employer's cost of minimum wage

$X_{2,t}$: The monthly increase in net minimum wage

uls_s : The income share of unskilled labor at sector s

γ_s : Sectoral fixed effects

ω_t : Time fixed effects

t : Time index.

The effect of the change in the employer's cost of minimum wage on the PPI inflation in sector s is shown as " $(\alpha_1 + \alpha_2) \times uls_s$ " in Model 1. For example, this effect in a sector with the uls value of 0.20 is calculated as " $0.20 \times (\alpha_1 + \alpha_2)$ ". As for Model 2, " $(\beta_1 + \beta_2) \times uls_s$ " shows the changes in net minimum wage; while " $(\beta_3 + \beta_4) \times uls_s$ " indicates the effect of the difference of the change in employers' cost and net minimum wage on the PPI inflation in sector s for a given net minimum wage. " $(\beta_1 + \beta_2 + \beta_3 + \beta_4) \times uls_s$ " shows how much the PPI inflation in sector s will rise if the net minimum wage rises by 1 percentage point and the employers' cost rises by an additional 1 percentage point in sector s .

The data used in the empirical analysis are compiled from various sources. Target variable is the share of the unskilled labor (uls) within total factor income. This variable is equal to the multiplication of the share of the unskilled labor within total wages and the share of the labor payments within total factor income. The share received by unskilled labor out of total wages is obtained from the wage shares of the skilled labor on the basis of aggregated sectors that are compiled by the GTAP (Global Trade Analysis Project) database. The share of labor payments within total factor income is calculated by using the OECD input-output tables besides ILO's sectoral data on the share of own-account employees. The sectoral producer prices are calculated using the sub-items of the PPI for 25 sub-sectors which are compatible with the above-mentioned definition. Minimum wage data are obtained from the Ministry of Labor and Social Security.³

Estimation results for Model 1 and 2 with different control variables are presented in Table 1. Main findings of the estimations are as follows: an additional increase by 1-percentage point in the employer's cost of the minimum wage causes a 0.22-percentage point difference in inflation between the sector with a median uls of 0.097 and the sector with the highest uls of 0.244. On the other hand, for a given net minimum wage increase, a 1-percentage point increase in the employer's cost of the minimum wage relative to the net minimum wage leads to a 0.65 percentage point difference in monthly inflation of these two sectors. In the case of 1-percentage point increase in the net minimum wage and an additional increase of 1-percentage point in the employer's cost of the minimum wage, the monthly PPI inflation between the median sector and the sector with the highest uls will differ by 0.87 percentage points.

In sum, this study hints at the existence of a producer inflation effect of the minimum wage through cost channel. Furthermore, the study indicates that not only the changes in net minimum wage, but the extent to which the additional premiums and taxes reflect on the employer's cost is also influential on the course of the producer prices in Turkey. Therefore, it is possible to infer from the findings

³ For further details on the data and the methodology, see Başkaya and Özmen (2013).

that regardless of the level of the net minimum wage, reducing the cost of minimum wage to the employer will contribute to the fall in inflation.

Table 1. Estimation Results

	Dependent Variable: Monthly PPI Inflation (Y)				
	(1)	(2)	(3)	(4)	(5)
$\alpha_{0,a}$	0.229 (0.042)***	-	0.229 (0.041)***	-	-
$\alpha_{0,b}$	-	1.245 (0.293)***	-	1.244 (0.291)***	1.234 (0.293)***
α_1	0.893 (0.659)	1.046 (0.642)	-	-	-
α_2	0.597 (0.382)	0.628 (0.400)	-	-	-
β_1	-	-	0.897 (0.677)	1.047 (0.659)	1.072 (0.653)*
β_2	-	-	0.615 (0.379)	0.649 (0.396)	0.675 (0.397)*
β_3	-	-	2.123 (1.476)	2.191 (1.459)	2.243 (1.430)
β_4	-	-	2.371 (1.156)**	2.570 (1.351)*	2.624 (1.331)**
Sectoral fixed effects	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes
Sectoral linear time trend	No	No	No	No	Yes
R^2	0.21	0.18	0.21	0.18	0.18
Number of observations	2825	2825	2825	2825	2825
$\alpha_1+\alpha_2$	1.49 (0.79)*	1.67 (0.78)**	-	-	-
t value for $H_0: \alpha_1+\alpha_2=0$	1.88	2.14	-	-	-
p value for $H_0: \alpha_1+\alpha_2=0$	0.06	0.033	-	-	-
$\beta_1+\beta_2$	-	-	1.51 (0.80)*	1.70 (0.79)**	1.75 (0.79)**
t value for $H_0: \beta_1+\beta_2=0$	-	-	1.88	2.14	2.22
p value for $H_0: \beta_1+\beta_2=0$	-	-	0.06	0.03	0.03
$\beta_3+\beta_4$	-	-	4.49 (1.87)**	4.76 (1.97)**	4.87 (1.91)***
t value for $H_0: \beta_3+\beta_4=0$	-	-	2.41	2.41	2.55
p value for $H_0: \beta_3+\beta_4=0$	-	-	0.02	0.02	0.01
$\beta_1+\beta_2+\beta_3+\beta_4$	-	-	6.01 (2.37)***	6.46 (2.47)***	6.61 (2.39)***
t value for $H_0: \beta_1+\beta_2+\beta_3+\beta_4=0$	-	-	2.53	2.61	2.77
p value for $H_0: \beta_1+\beta_2+\beta_3+\beta_4=0$	-	-	0.01	0.01	0.01

Notes: Columns 1 and 3 use model specification in which the first degree autoregression coefficient in sectoral PPI inflation remains constant across sectors; while columns 2, 4 and 5 use model specification in which this coefficient is allowed to vary across sectors. Sectoral and time fixed effects are controlled in the first two columns; while column 5 also allows for the possibility that different linear trends may occur in inflation in these sectors. Regression data are weighted by the weights of the sectors in the PPI. Standard errors are aggregated across sectors. *, ** *** denote 10 percent, 5 percent and 1 percent significance level, respectively.

REFERENCES

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