4. Supply and Demand Developments

In the third quarter of 2014, GDP grew by a mere 1.7 percent year-on-year. On the production front, the adverse weather-driven yearly decline in the agricultural value-added was the key driver of this sluggish GDP growth. On the expenditures side, both the mild domestic demand and the slowing export growth caused economic activity to increase modestly. Although the decelerating activity in the European economies and geopolitical tensions across neighboring countries dampened export growth, the greatest contribution to annual growth came from net exports, also on account of the contraction in imports. Changes in the demand composition suggest that domestic demand provided a higher support to growth, as projected in the previous Inflation Report.

Output gap forecasts show that demand conditions were slightly more accommodative of disinflation in the second half of the year. During this period, the capacity utilization rate decreased while unemployment edged up in the manufacturing industry. The rise in unemployment was due to weaker non-farm employment amid sluggish economic activity as well as higher labor force participation. Data announced for the final quarter of 2014 point to a quarterly slowdown in the annual growth of industrial production. During October-November, industrial production lagged behind the previous quarter's average. PMI and BTS indicators signal a moderate course in industrial production for December. Against this background, industrial production is expected to register a quarterly decline in the fourth quarter. However, indicators for the final quarter hint at some recovery in domestic demand. In this period, the production of consumption goods and the sales of automobiles and light commercial vehicles increased, while the BTS expectations for domestic orders improved. Nevertheless, both the weak exports excluding gold and the PMI and BTS indicators suggest that external demand continues to slow. Thus, economic activity is expected to remain sluggish in the fourth quarter.

A growth composition with a robust domestic demand compared to external demand seems very likely for 2015 as well. After curbing consumption in 2014, macroprudential measures are not expected to have an additional tightening effect in 2015. Moreover, the favorable effects of the ongoing improvement in financial conditions and the possible decline in inflation driven largely by falling oil prices on purchasing power are also among factors that may positively affect the contribution of consumption spending to growth in 2015. Additionally, the moderate fourth-quarter recovery in investment tendency suggests that investment spending will provide a higher support to growth in 2015. Hence, economic activity is estimated to grow at a stronger pace in 2015 compared to the previous year. On the production side, growth is likely to be higher in 2015 than in 2014 due to base effects from agricultural production. Yet, given the sluggish growth across European economies, persisting geopolitical risks and falling revenues across oil-exporting countries, exports are expected to remain weak in 2015.

In sum, domestic demand will make a gradually increasing contribution to growth in 2015, but aggregate demand conditions are expected to be supportive of disinflation as external demand will remain relatively weaker. Despite this likely change in the growth composition, the favorable developments in the terms of trade and the current macroprudential framework are expected to contribute to the improvement in the current account balance.

4.1. Supply Developments

According to the TurkStat data, the GDP posted a year-on-year increase of 1.7 percent in the third quarter. On the production side, the annual rate of increase was 2.7, 1.0 and 3.4 percent in the industrial, construction and services sectors, respectively. On the other hand, the agricultural value-added was down 4.9 percent year-on-year. As the third quarter is marked by the highest agricultural value-added of the year with 14.2 percent, this decline led to a 0.7 percentage points decrease in annual GDP growth (Chart 4.1.1). Adjusted for seasonal and calendar effects, the GDP grew by 0.4 percent quarter-on-quarter. In this period, the services value-added and the industrial and construction value-added expanded by 1.1 and 0.2 percent, respectively, while the agricultural value-added fell by 2.5 percent due to drought, restraining the quarterly growth (Chart 4.1.2.).

Chart 4.1.1.
Annual GDP Growth and Contributions from the Production Side (Percentage Points)

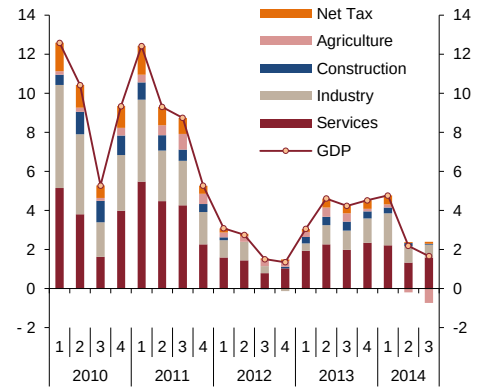
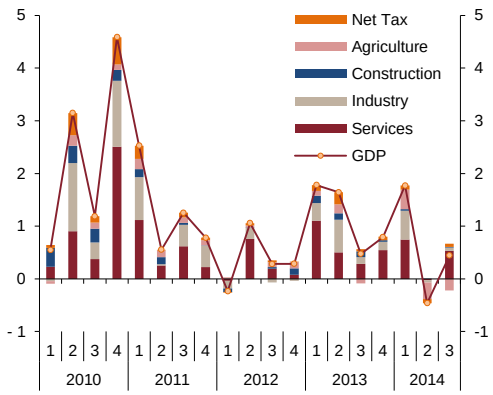


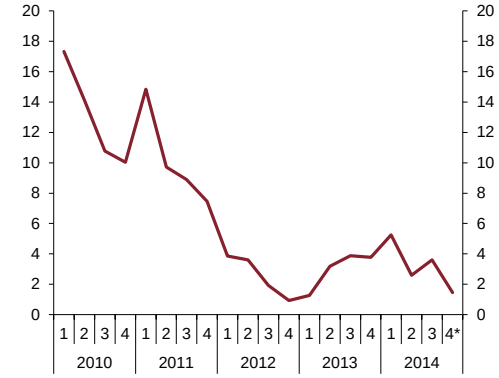
Chart 4.1.2.
Quarterly GDP Growth and Contributions from the Production Side (Seasonally Adjusted, Percentage Points)



Source: TurkStat.

In the fourth quarter, the annual growth rate of industrial production slowed quarter-on-quarter (Chart 4.1.3). Moreover, during October-November, the industrial production fell by 0.9 percent from the third quarter (Chart 4.1.4). The less-than-strong pace of recovery in domestic demand and the increasingly more marked weakening in global growth caused external demand to slow, which put pressure on industrial production growth in this period. December's PMI indicators display a decrease from November (Chart 4.1.5). Similarly, despite the favorable course in production expectations, the BTS production index for the last quarter also weakened (Chart 4.1.6). Under these circumstances, the seasonally and calendar adjusted industrial production is estimated to post a quarter-on-quarter fall in the final quarter. Despite the expected slowdown in the fourth quarter, industrial production is likely to post a higher growth in 2014 than in 2013 on the back of developments in the first three quarters.

Chart 4.1.3.
Industrial Production Index
(Annual Percent Change)



* As of November.
Source: TurkStat.

Chart 4.1.4.
Industrial Production Index
(Seasonally Adjusted, Quarterly Percent Change)

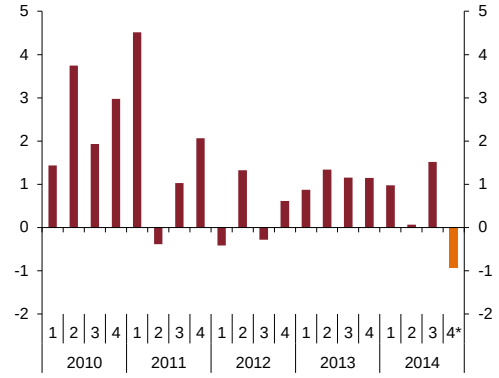
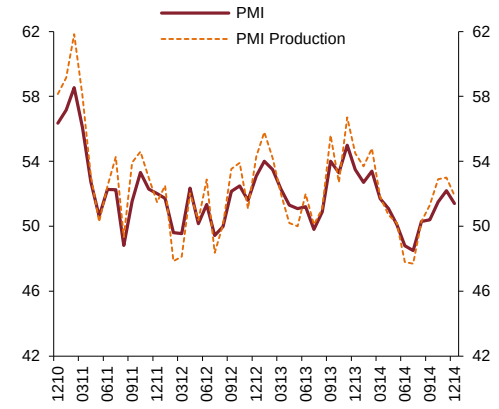
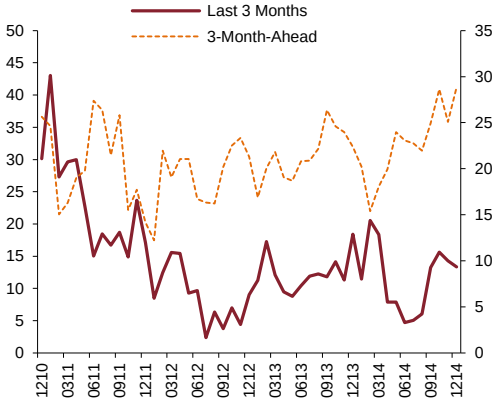


Chart 4.1.5.
PMI and PMI Production
(Seasonally Adjusted)



Source: Markit.

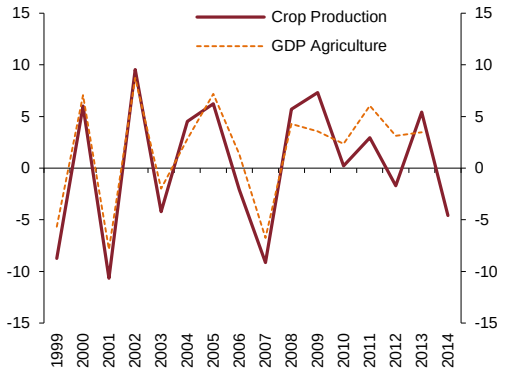
Chart 4.1.6.
BTS Production Level and Production Expectations
(Seasonally Adjusted, Increase-Decrease)



Source: CBRT.

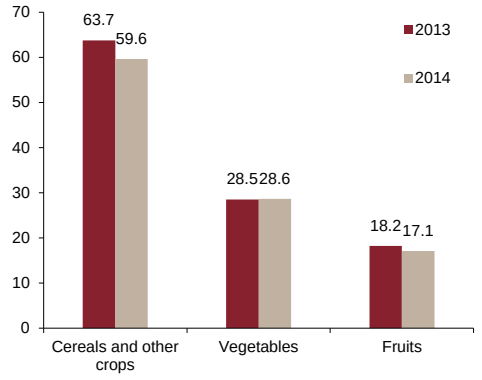
The GDP is expected to grow at a slower pace than industrial production in 2014. This will largely be driven by the fall in crop production that was caused by the drought due to low precipitation in the 2013 and 2014 agricultural years. Indeed, crop production accounts for a major share in the GDP subcategory of agriculture and the annual changes of these two variables move mostly in tandem with each other (Chart 4.1.7). According to the TurkStat's crop production data for 2014, crop production was down from 2013 due to grains and fruits (Chart 4.1.8). Therefore, it is estimated that the agricultural sector will also contract and make a negative contribution to growth in 2014. Yet, should the favorable weather conditions last until June during the 2014-2015 agricultural year that started in October, the contribution of agricultural value-added to growth may return to normal and support economic growth in 2015.

Chart 4.1.7.
Crop Production and GDP Agriculture*
(Annual Percent Change)



* Crop production includes cereals and other crops, vegetables, fruits and tea.
Source: TurkStat, CBRT.

Chart 4.1.8.
Crop Production in 2014
(Million Tons)



Source: TurkStat.

4.2. Demand Developments

In terms of spending, third-quarter GDP data suggest that the greatest contribution to annual growth came from net exports, with final domestic demand also making a small yet positive contribution (Chart 4.2.1). Private consumption spending recovered robustly in seasonally adjusted terms after contracting for two consecutive quarters. The post-crisis changes across the subcategories of consumption show that the demand index for durable goods obtained by aggregating items containing durable goods such as furniture and home appliances and sales of automobiles weakened after the fourth quarter of 2010 due to macroprudential measures (Chart 4.2.2). After starting to pick up in mid-2012, durable goods demand assumed a downward track by mid-2013 due to financial tightening and elevated uncertainty. Following the strong third-quarter recovery of 2014, this subcategory has pursued a path that is supportive of the expected recovery in demand for the second half of 2014. The relatively more income-sensitive items that are not associated with durable consumption moved largely in line with the GDP growth after the fourth quarter of 2010. Although the demand for this subcategory weakened markedly in the second half of 2013, it returned to an upward track by the third quarter of 2014.

Chart 4.2.1.
Contributions to Annual Growth from the Demand Side
(Percentage Points)

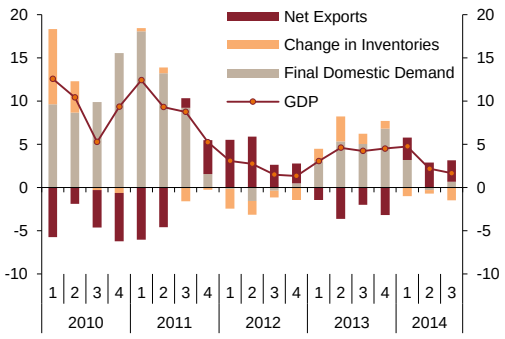
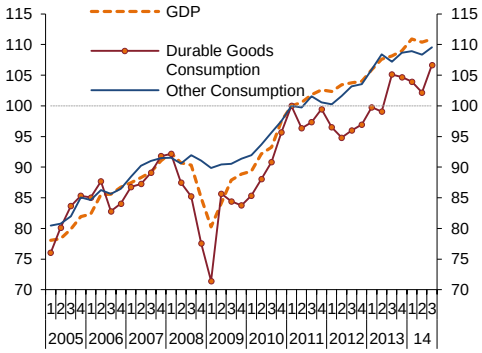


Chart 4.2.2.
Domestic Private Consumption and the GDP*
(Seasonally Adjusted, 2011Q1=100)



* TurkStat releases data on domestic consumption by sub-items. Furniture and home appliances, transport and communication as well as leisure and culture (including TV sales) are classified as durable goods consumption as they are mostly comprised of durable goods. Other consumption is measured as consumption excluding durables goods.
Source: TurkStat.

After a prolonged period of weakening, private investments hinted at some recovery. In fact, while private investments in machinery and equipment were up in the third quarter, those in construction flattened in the third quarter after the first-half uptick (Chart 4.2.3). In addition to the third-quarter recovery in private demand, the public sector also increased on the back of consumption, leading to a rise in final domestic demand components in the third quarter (Chart 4.2.4).

Chart 4.2.3.
Private Investments and the GDP
(Seasonally Adjusted, 2011Q1=100)

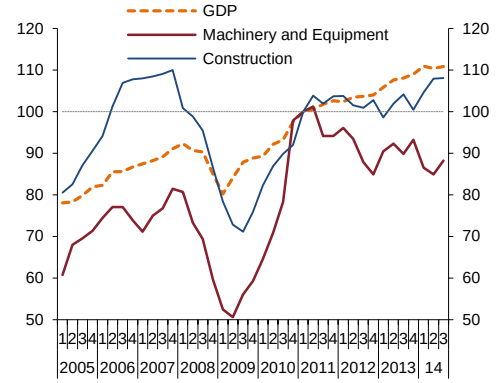
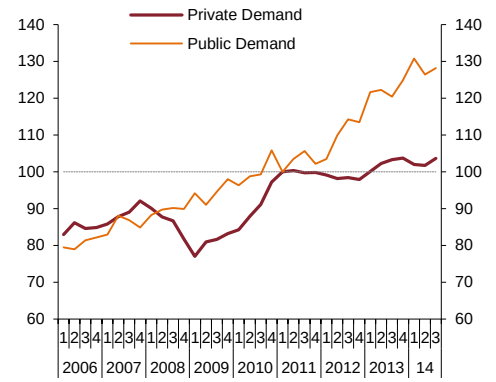


Chart 4.2.4.
Private and Public Sector Demand
(Seasonally Adjusted, 2011Q1=100)



Source: TurkStat.

Data for the fourth quarter of 2014 point to an ongoing moderate recovery in domestic demand. During October-November, the production of consumption goods was up from the third-quarter average, while imports were down (Chart 4.2.5). The production of machinery and equipment, an indicator for investments, remained virtually unchanged on a quarterly basis, whereas the imports thereof increased (Chart 4.2.6). Domestic sales of automobiles and light commercial vehicles were on the rise in the final quarter (Chart 4.2.7). According to the BTS expectations for 3-month-ahead domestic orders, expectations for production of consumption goods continue to recover while those of investment goods have been improving remarkably (Chart 4.2.8). The rise in construction employment and the central government budget outturn signal a fourth-quarter increase in construction investments and public consumption. All in all, after the third quarter, domestic demand is expected to recover further in the final quarter of 2014.

Chart 4.2.5.
Production and Import Quantity Indices of Consumption Goods
(Seasonally Adjusted, 2010=100)

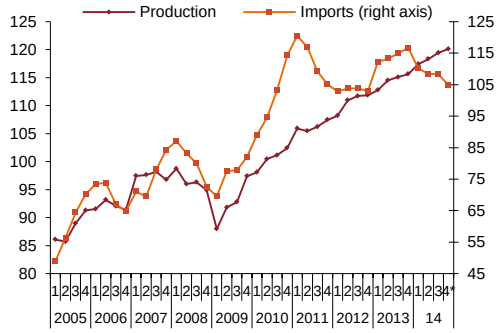
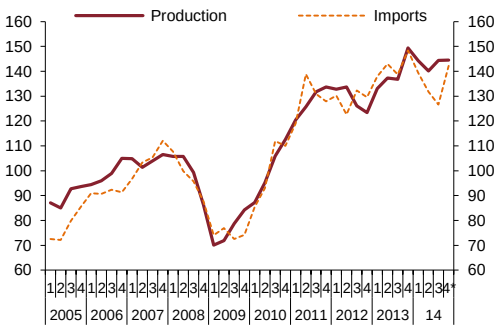
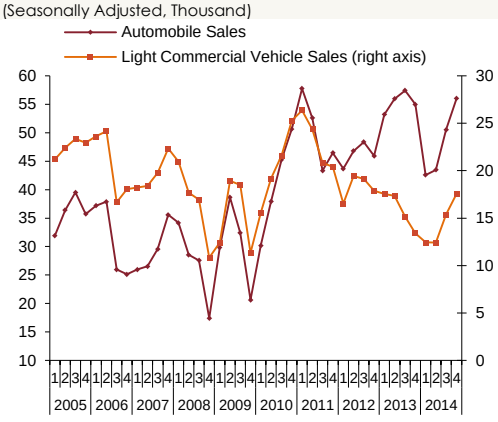


Chart 4.2.6.
Production and Import Quantity Indices of Machinery and Equipment
(Seasonally Adjusted, 2010=100)



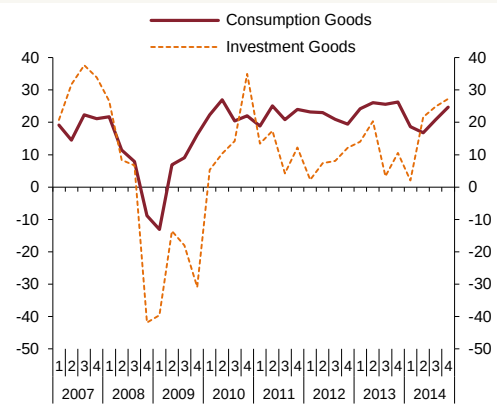
* As of November.
Source: TurkStat, CBRT.

Chart 4.2.7.
Domestic Sales of Automobiles and Light Commercial Vehicles
(Seasonally Adjusted, Thousand)



Source: AMA, CBRT.

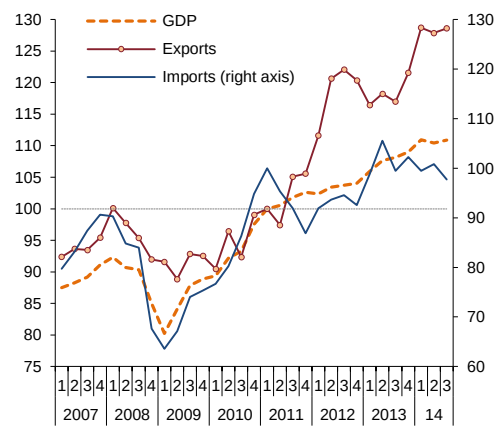
Chart 4.2.8.
BTS Domestic Order Expectations
(Seasonally Adjusted, Increase-Decrease)



Source: CBRT.

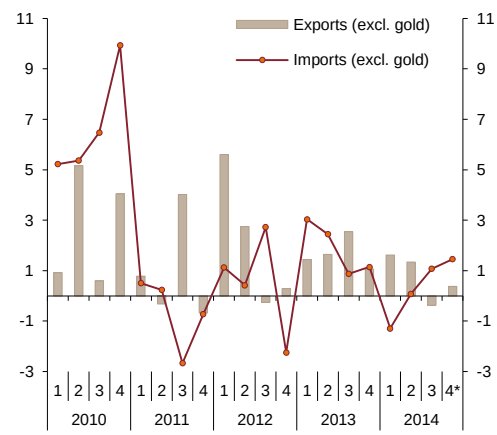
The growth in exports of goods and services halted after the first quarter of 2014 while imports declined, helping the re-balancing to continue in real terms (Chart 4.2.9). In order to get a clearer picture of the effects of global economic developments on exports, the analysis of export quantity index, excluding gold, reveals that the index posted a quarterly fall in the third quarter after an increase for seven consecutive quarters (Chart 4.2.10). The slowdown in exports was also attributed to developments across neighboring countries. To be more specific, exports to Russia and Iraq were down in 2014 (Chart 4.2.11). As a result, while domestic demand grew stronger in the second half of 2014, external demand weakened, thus causing the recovery in economic activity to remain limited.

Chart 4.2.9.
Exports, Imports and GDP
(Seasonally Adjusted, 2011Q1=100)



Source: TurkStat.

Chart 4.2.10.
Exports and Imports Quantity Indices
(Quarterly Percent Change)

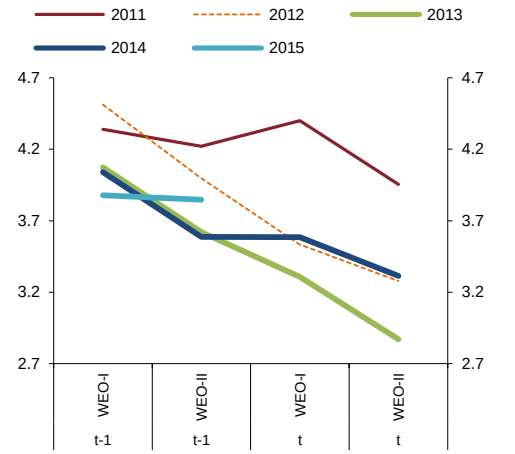


* As of November.
Source: TurkStat, CBRT.

Chart 4.2.11.
Exports to Russia and Iraq
(Annual Percent Change)

* As of November.
Source: TurkStat.

Chart 4.2.12.
Global Growth Forecasts
(Annual Percent Change)



Source: WEO.

In sum, in the first three quarters of 2014, the Turkish economy was subject to developments curbing demand, such as financial tightening, increased sentiment of uncertainty and weaker external demand, as well as a negative supply-side shock caused by weather and precipitation conditions, and grew at a slower pace than in 2013. In the first half of the year, domestic demand weakened due to global and domestic uncertainties while external demand's support for growth put a lid on the economic slowdown. In the second half, domestic demand began to recover, whereas external demand deteriorated due to the global economic downturn and geopolitical developments. In other words, the effects of the Fed's mid-2013 announcements and the early 2014 developments on domestic demand waned, but the weaker external demand caused the recovery to lose momentum. In addition to these contractionary developments, the negative impact of weather and precipitation conditions caused the agricultural value-added to dampen growth in 2014 after providing a steady contribution between 2008 and 2013. Beside its direct impact, the decline in the agricultural value-added had an indirect impact on economic activity through demand due to the reduced purchasing power driven by rising food prices. Thus, the economic activity of 2014 was weaker than estimated in early 2014.

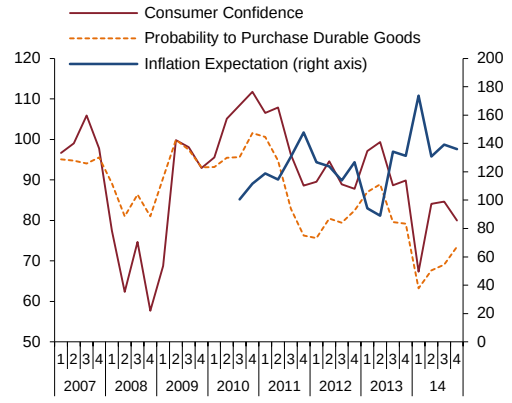
In conclusion, while domestic and external developments posed downward pressure on growth in 2014, agriculture created a negative supply-side shock. Therefore, non-farm GDP growth was down about 1 percent from 2013 based on fourth-quarter estimations, while GDP growth saw a more dramatic decrease.

Outlook for 2015

The outlook for 2015 points to a stronger domestic demand and a weaker external demand compared to 2014. Weather and precipitation conditions are expected to improve the agricultural value-added, which will support growth. The course of public spending, which is expected to increase only slightly as per the MTP, will be a key driver of growth in 2015. Against this background, although growth is expected to be faster in 2015 than in 2014, various risks are present on domestic and external demand components.

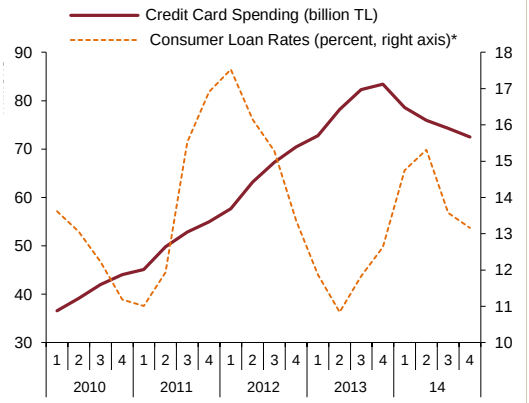
The most important risk to the growth outlook for 2015 is associated with external demand. The evolution of the forecasts published in the IMF World Economic Outlook for 2011-2014 shows that growth forecasts were revised downward over time during 2011-2014 (Chart 4.2.12). The fragile recovery of the European economies and the fact that falling oil prices will curb the demand from Turkey's oil-exporting trading partners through the income channel add to the downside risks pertaining to external demand.

Chart 4.2.13.
Consumer Confidence



Source: CNBC-e.

Chart 4.2.14.
Credit Card Spending and Consumer Loan Rates



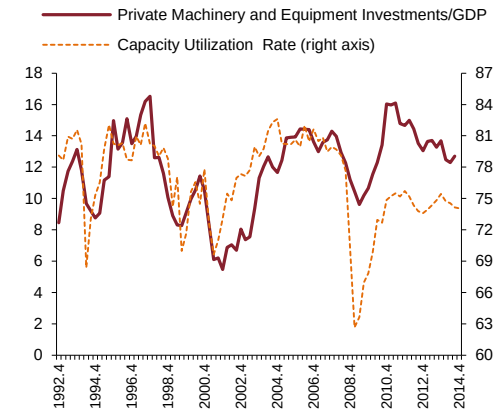
* Average of the housing, automobile and personal loan rates.
Source: BRSA, CBRT.

Even though external demand risks are on the downside, risks to private consumption are more balanced. The key factors that were influential in the slowing private consumption during 2014 are not expected to cause an additional tightening in 2015. Although the consumer confidence index still remains weak, the perceived convenience to purchase durable goods is recovering (Chart 4.2.13). Moreover, in 2015, falling oil prices are expected to spark improvement in the purchasing power, which in turn will have a positive impact on consumer confidence. In fact, the negative relation between the inflation expectation and the consumer confidence in the CNBC-e consumer confidence index is rather striking. The slowing consumption in 2014 was also driven by financial tightening and macroprudential measures. The installment plan ban for several items and the restriction of installments for other items caused credit card purchases to decline (Chart 4.2.14). In addition, the rise in loan rates following the Fed's announcements in 2013 curbed consumption throughout 2014. Consumer demand might pick up in 2015 thanks to loan rates that decreased over 2014 by about 2 points from early 2014 and improving financial conditions. In sum, although the weak course of consumer confidence poses a downside risk to private consumption, the expected rise in employment and real wages, falling oil prices and improving financial conditions offset these risks.

Downside risks are more pronounced for private investment demand. Due to factors such as the strong post-crisis recovery in economic activity, the relatively lower prices of imported goods amid the appreciating Turkish lira, and cheap and ample liquidity, investments grew at a remarkable rate in 2010 and 2011. Yet, the idle capacity caused by the decelerating growth is recently believed to be a major factor restraining investments (Chart 4.2.15). To be more specific, in 1997 and 2006, when the share of private machinery and equipment investments in GDP reached a peak, the capacity utilization rate was also at its highest, whereas during 2010-2011, investment growth happened before capacity

returned to pre-crisis levels. In this regard, still-low capacity utilization rates may translate into less need for capacity-boosting investments due to idle capacity. As the exchange rate pass-through into prices of investment goods is substantially high, the price effect seems to be another negative channel restraining investments considering the recent depreciation of the Turkish lira (Chart 4.2.16). Factors such as persisting downside risks to the global economy continue to have adverse effects on investments due to demand uncertainty.

Chart 4.2.15.
Private Machinery and Equipment Investments and Capacity Utilization Rate
(Seasonally Adjusted, Percent)



Source: TurkStat, CBRT.

Chart 4.2.16.
Private Machinery and Equipment Investments and USD/TL Exchange Rate
(Annual Percent Change)

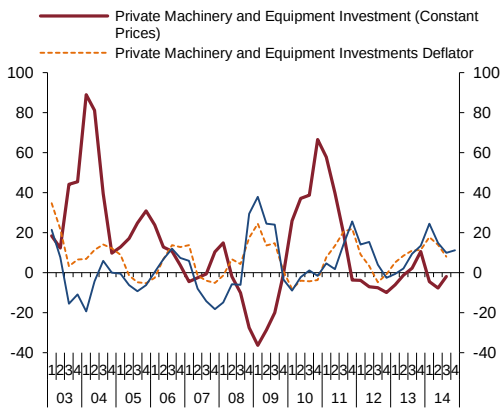
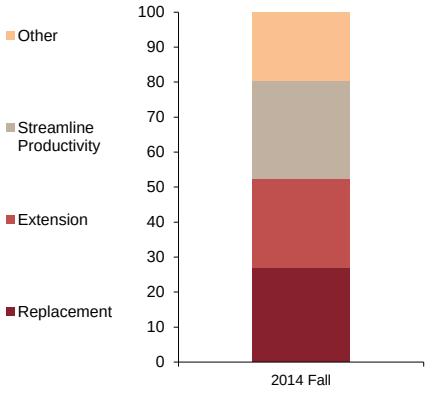
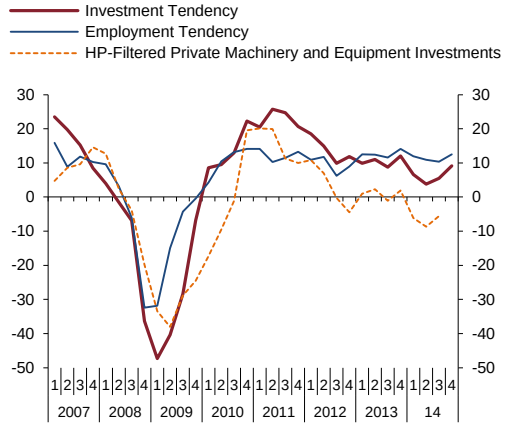


Chart 4.2.17.
Reasons for Planned Investments



Source: CBRT Investment Survey.

Chart 4.2.18.
Employment and Investment Tendency and Private Machinery and Equipment Investments
(Seasonally Adjusted)



Source: TurkStat, CBRT.

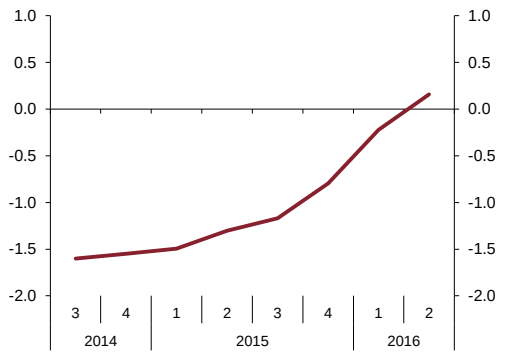
Despite the idle capacity in the economy, it should be noted that not all private investments in machinery and equipment are made to boost capacity for the manufacturing industry. In fact, responses to the question of "goal of investments for the year ahead" in the Autumn issue of the CBRT's semi-annual investment survey suggest that capacity-boosting investments explain only about 25 percent of the investment goals (Chart 4.2.17). Restoring worn-out facilities and increasing productivity are among other factors affecting investment decisions. On the other hand, according to the TurkStat's Industry and Service Statistics, the services sector also plays a major role in machinery and equipment

investments. Therefore, investments made for purposes such as productivity gains and restoration of worn-out facilities and the upward trend of the services sector are believed to support investments.

The recent improvement in the BTS investment tendency is another indicator hinting at a positive outlook for investments (Chart 4.2.18). In this regard, in case of an absence of deterioration in investor confidence and no tightening in financial conditions, investments are expected to move towards the trend line. Indeed, taking into account both the BTS data on investments and the cyclical component obtained through applying a HP filter to the data on machinery and equipment investments, the investment tendency signals recovery for private machinery and equipment investments. As a result, private machinery and equipment investments are expected to show no further decline in 2015 and remain close to 2014 readings. However, in case of an additional deterioration in perceived uncertainty or tightening in financial conditions, private machinery and equipment investments may continue to put downward pressure on growth in 2015. On the private construction investments front, the recent growth is likely to continue moderately into 2015 notwithstanding some downside risks.

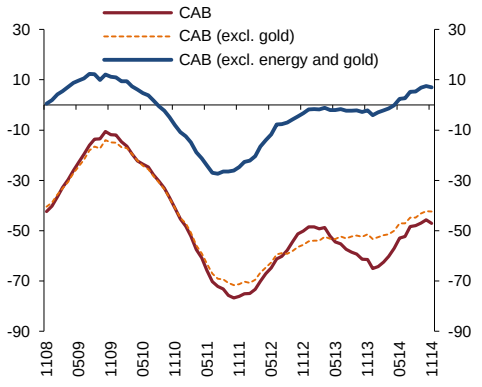
To summarize, the weak growth in the European economies due to structural problems, the likely decline in oil-exporting markets' growth performances and the uncertainty about capital flows and financial conditions following the Fed's announcements are among the major downside risks to growth in 2015. The expected recovery in consumer demand on the back of the strong post-crisis employment performance, lower oil prices compared to 2014 and the easing in financial conditions, as well as greater room for maneuvering monetary policy amid the narrowing in current account deficit and the decline in inflation, strong public finances and the expected recovery of the agricultural value-added are among the factors to support growth.

Chart 4.2.19.
Output Gap
(Percent)



Source: CBRT.

Chart 4.2.20.
Current Account Balance (CAB)
(12-Month Cumulative, Billion USD)



Source: TurkStat, CBRT.

In conclusion, demand conditions are supportive of the decline in inflation while the correction in the current account balance continues. In 2015, domestic demand is expected to recover modestly whereas external demand will remain weak. Thus, aggregate demand conditions are estimated to support disinflation in 2015 (Chart 4.2.19). Despite this likely change in the growth composition, the improved terms of trade and the current macroprudential framework is expected to contribute to the improvement in the current account balance (Chart 4.2.20).

4.3. Labor Market

After flattening in the first quarter of 2014, total and non-farm unemployment have started to surge and have remained on the rise, albeit more slowly, as of October (Chart 4.3.1). The weak outlook of non-farm employment after the first quarter and the uptrend in the labor force over the whole year put upward pressure on non-farm unemployment (Chart 4.3.2). Non-farm employment dropped during the second quarter and most of the third quarter, but recovered slightly by August. Yet, the improved employment rate lagged behind the rapidly growing labor force, causing the unemployment rate to climb further.

Chart 4.3.1.
Unemployment Rates
(Seasonally Adjusted, Percent)

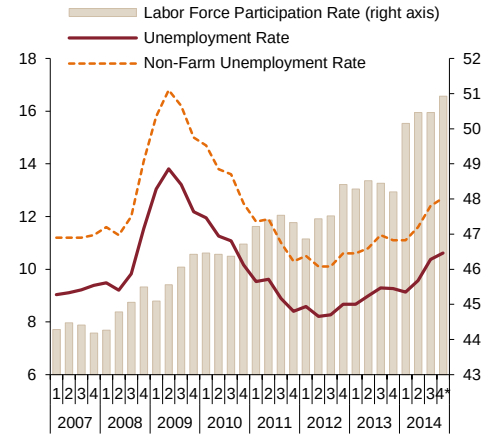
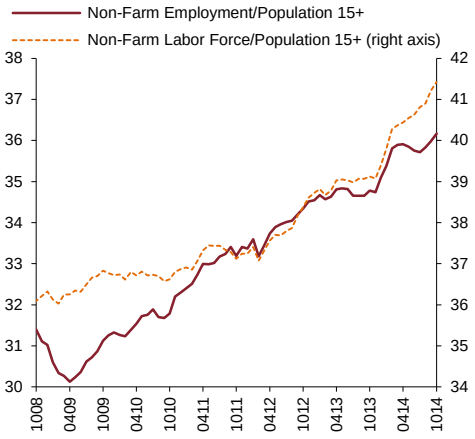


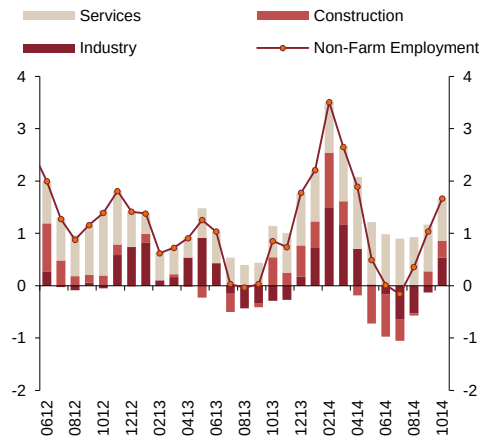
Chart 4.3.2.
Non-Farm Employment and Non-Farm Labor Force
(Seasonally Adjusted, Percent)



* As of October.
Source: TurkStat.

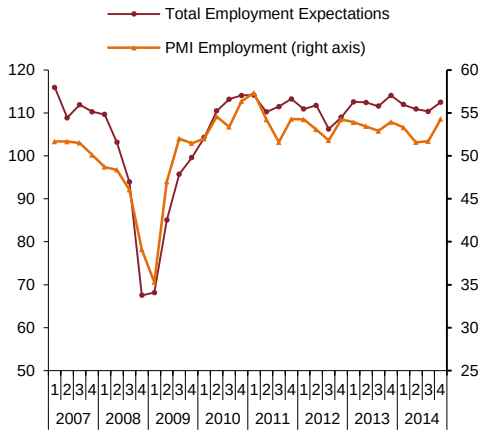
The analysis of non-farm employment by sectors indicates that the services sector was the main driver of non-farm employment growth (Chart 4.3.3). The rise in the services employment as of the first quarter of 2014 is mostly attributed to the contribution of trade, restaurants and hotels. In addition, business services as well as education and healthcare, the latter of which are dominated by the public sector, also contributed to the growth in services employment in this period. The decline in non-farm employment during the second and third quarters was driven by the industrial and construction sectors. Employment in these sectors began to recover by August. As hinted by developments in economic activity, industrial production is unlikely to recover in the fourth quarter (Section 4.1). The production of non-metallic minerals, which is closely related with the construction sector, was up by a modest 0.65 percent from the third quarter during October-November. As of October, employment in industrial and construction sectors appears to have a more positive outlook than implied by data on production.

Chart 4.3.3.
Contributions to Quarterly Changes in Non-Farm Employment
(Seasonally Adjusted, Percentage Points)



Source: TurkStat, CBRT.

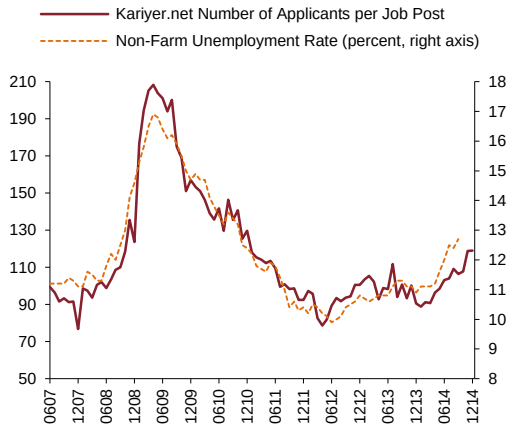
Chart 4.3.4.
BTS Employment Expectations and PMI Employment Index
(Seasonally Adjusted)



Source: TurkStat, Markit, CBRT.

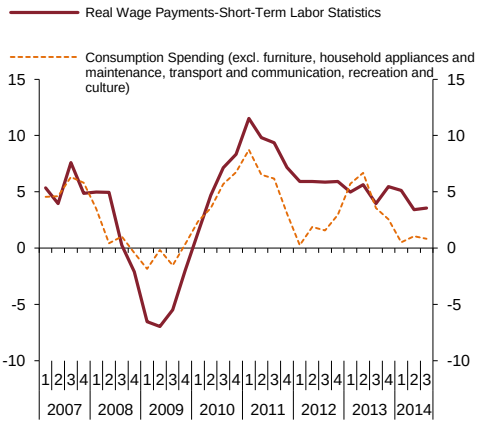
While industrial production fell slightly during the fourth quarter, survey indicators signal some increase in employment. The total employment expectation, which is among the CBRT's BTS indicators reflecting the views of private firms operating in the manufacturing industry, posted more optimistic expectations in the fourth quarter (Chart 4.3.4). Similarly, the PMI pertaining to employment that includes the assessments of the private firms operating in the manufacturing industry was on the rise in the fourth quarter. Although these indicators present a benign outlook for industrial employment, the weak course of production developments restricts the expectation for employment growth. According to data obtained from Kariyer.net, a human resources firm, the total number of new job posts decelerated. In addition, the number of applications per job post, which is a leading indicator for unemployment, continues to surge in the fourth quarter of 2014 (Chart 4.3.5). This increase is largely attributed to both the fall in the number of new job posts and the ongoing rise in the number of applications.

Chart 4.3.5.
Number of Applicants per Job Post and Non-Farm Unemployment Rate (Seasonally Adjusted)



Source: TurkStat, Kariyer.net.

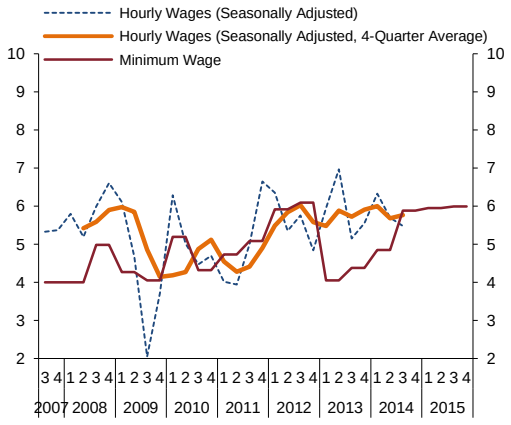
Chart 4.3.6.
Household Domestic Consumption and Real Wage Payments* (Annual Percent Change)



* Calculated as the weighted average of total wages paid in industrial, construction, trade and services activities. Deflated by CPI.
Source: TurkStat, CBRT.

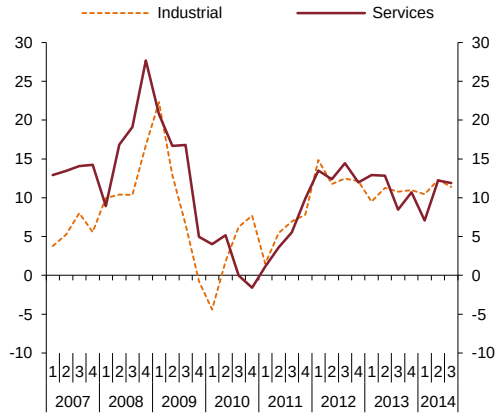
Following the first quarter of 2014, employment growth slowed but wages increased at a faster pace than inflation. Thus, total wage payments continued to support domestic demand, albeit having lost momentum. However, at the same time, household domestic consumption spending, which excludes durable goods spending, increased only slightly (Chart 4.3.6). On the cost front, wages put upward pressure on firms' cost increases in 2014. The minimum wage hikes that were set at the onset of 2014 and the subsequent average wage hikes hovered above the inflation forecast for 2014. The annual rise in the hourly wage index was 12 percent as of the third quarter of 2014 (Chart 4.3.7). Due to this rise in hourly wages, unit wages posted a year-on-year increase at a rate close to inflation as of the third quarter (Chart 4.3.8). The recently announced new minimum wages for 2015 reflect an annual nominal wage increase of 12.2 percent on average. Based on the estimated inflation rate, these values point to a notable real increase in wages for the upcoming year. All in all, given the currently moderate course of productivity gains, the growth rate of unit wages is unlikely to decelerate in the forthcoming period. Considering their weight in the cost structure of a firm, labor costs are of secondary importance, but in the absence of productivity gains, wage hikes might be a factor that adds to inflation inertia, particularly in the labor-intensive services sector.

Chart 4.3.7.
Hourly Wages and the Minimum Wage
(2-Quarter Percent Change)



Source: TurkStat Labor Cost Indices, Ministry of Labor and Social Security.

Chart 4.3.8.
Unit Labor Cost*
(Annual Percent Change)



* In the services sector, unit labor cost is calculated by dividing total wage payments by turnover adjusted by services prices. In the industrial sector, total wage payments are divided by output.
Source: TurkStat Short-Term Labor Statistics, CBRT.

In sum, after easing since the second quarter of 2014, non-farm employment grew at a reasonable rate during August-October thanks to the contribution of the recovering construction and industrial sectors. However, due to higher labor force participation, unemployment rates continued to rise. In view of leading indicators and the October data, employment is expected to improve in the fourth quarter but unemployment is unlikely to decrease given the rising labor force participation.

Box 4.1 Liability Dollarization and Growth Performance of Non-Financial Firms in Turkey[1]

Non-financial firms' tendency to borrow in long-term FX-denominated loans has been very high in Turkey, albeit on the decline in recent years. This is largely due to the macroeconomic instability of the 1990s as well as the failure to generate sufficient long-term TL-denominated funds in the domestic financial system and the elevated levels of the external fund premium for TL-denominated loans.[2] Financially strong, large and exporting firms met their financial needs mostly through long-term FX-denominated borrowing to make their investments. On the other hand, SMEs, which have the highest funding need and produce largely for the domestic market, failed to utilize this facility adequately and were subject to the high external fund premium of the banking system.

There are two major problems arising from the failure of the Turkish financial system to provide firms with adequate funds. The first one is the lack of access to funds by the SMEs, the potential engines for innovation, and their failure to generate adequate jobs, thus the inefficient use of the growth potential (World Bank, 2010). The second problem is the existence of an inadequate amount of long-term TL-denominated funds and massive FX-denominated borrowings of large firms; hence, the increasing exchange rate sensitivity of the economy against abrupt changes in external capital flows and the resulting threat to financial stability.

On the other hand, there are advantages to borrowing in FX-denominated loans. First of all, borrowing in long-term FX-denominated loans at low cost may enable large and exporting firms to enhance their growth potential. Moreover, their borrowing in FX rather than in TL-denominated loans may allocate TL funds towards other economic agents or firms in need of funds. Indeed, the amount of funds used by SMEs and consumers through the banking system in Turkey has grown dramatically in recent years.

There are two factors affecting the growth performance of firms with regard to the share of FX-denominated loans in their total liabilities, which is referred to as liability dollarization rate in the literature. Firstly, when the supply of domestic currency denominated funds is limited, firms' access to FX-denominated funds has a favorable impact on their growth performance. Secondly, the increasing amount of FX-denominated liabilities and imported input use of economic agents heightens the fragility of the economy particularly through the balance sheet channel, thus hindering the conduct of an independent monetary and exchange rate policy. The net effect of these counteracting channels on firms' growth performance deserves to be assessed on the basis of an empirical analysis.

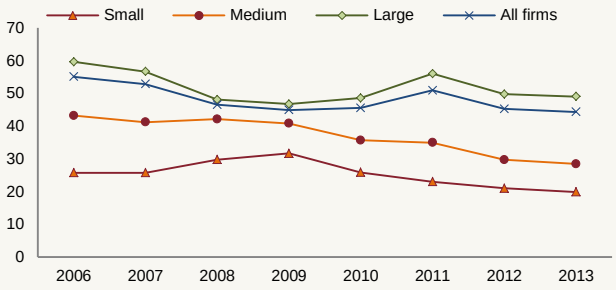
This box is based on the analysis covering the 1996-2010 period, and using data of about 7000 firms, which report their financial tables regularly for at least three consecutive years as per the CBRT Sectoral Balance Sheets. The firms contained in the data set, which account for around 58 percent of sales, 72 percent of exports and 40 percent of FX-denominated loans in the economy, make up a large share of economic activity.

[1] This box is based on Alp and Yalçın (2015).

[2] Among factors causing liability dollarization in the literature are variables such as the immature credit markets for TL-denominated long-term loans, the significant volatility in exchange rates and capital flows, macroeconomic volatility, insufficient institutional capacity, economic policy uncertainties and regulation deficiencies. In order of importance based on estimation results, Alp and Yalçın (2015) list the factors raising the liability dollarization rate of firms in Turkey as follows: the significant inertia due to dollarization, the high public borrowing requirement, the appreciation of the Turkish lira, the increase in firms' exports, the growing share of net tangible assets, which act as collateral, the rising inflation rate, the high leverage ratio, the growth of firm size and the fall in the VIX.

Chart 1 shows the course of liability dollarization rates by firm size over time. Accordingly, the liability dollarization rate is observed to increase with size. Moreover, liability dollarization rate is found to be declining for SMEs, while remaining flat for large firms in recent years. A similar finding is evident for firms with a high export to sales ratio (export rate), whose dollarization rate is high and flat.

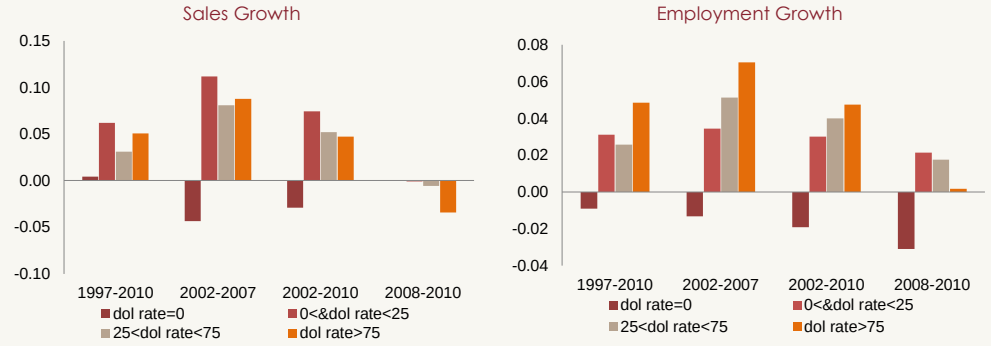
Chart 1. Liability Dollarization Rates by Firm Size* (Percent)



* Firms with number of employees less than 50 are categorized as small; number of employees bigger than 250 are categorized as large and number of employees between 50 and 250 are categorized as medium sized.
Source: CBRT Sectoral Balance Sheets, Hülagü and Yalçın (2014).

Chart 2 displays the weighted growth rates of real sales and employment for manufacturing firms according to the magnitudes of their liability dollarization rates. Accordingly, firms with no FX-denominated liabilities (dol rate=0) display a poor performance in their sales and employment growth rates during normal (non-crisis) times. This suggests that firms with no access to FX-denominated loans in Turkey are financially restrained. Firms with a liability dollarization rate between zero and 25 percent have a markedly stronger average sales growth performance compared to others. The average employment growth rate of firms with zero dollarization is negative in all sub-periods, and employment growth increases as the dollarization rate rises. On the other hand, during the period of 2008-2010, which is marked by the effects of the global crisis, the contraction in sales is quite significant for firms with a dollarization rate higher than 75 percent and there is hardly any employment growth. This finding implies that firms with very high dollarization rates fail to grow in terms of their sales during times of crisis when the exchange rate volatility is high. Furthermore, this observation is also in line with the findings obtained from the econometric analysis in the following section.

Chart 2. Liability Dollarization vs Sales and Employment Growth (Percent)



Source: CBRT Sectoral Balance Sheets.

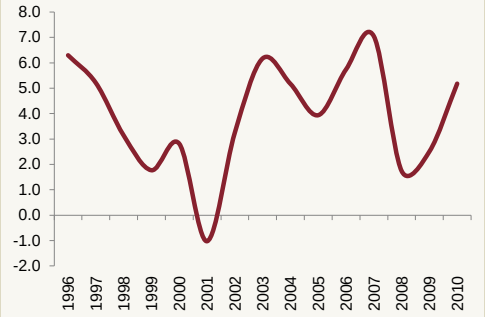
The effects of the liability dollarization on firms' sales and employment growth are estimated by using a dynamic panel method utilizing Generalized Method of Moments (GMM). Accordingly, the determinants firms' real sales and employment growth are modeled separately. In the simplest model, the main determinants of sales growth are the lagged value of the sales growth, liability dollarization, the ratio of real sales to employment, which denotes firms' productivity, firm-specific variables such as exports-to-sales ratio and the leverage ratio, the change in real exchange rate to reflect domestic macroeconomic

developments and VIX to capture international developments. The determinants of the employment growth are the growth of firms' real tangible assets and the above variables used in the sales growth model.

In order to find out whether the degree of the liability dollarization and firms' exports ratios are sensitive to the crisis episodes of 2001 and 2008-2009, the model was enriched by the inclusion of dummy variables. Accordingly, dummy variables are generated to classify firms by their liability dollarization and exports as firms with high and low liability dollarization rate and firms with high and low exports rate.[3] Moreover, two crisis dummy variables are constructed. The first crisis dummy variable takes the value of 1 for the 2000-2002 period and 0 otherwise to control for the 2001crisis, while the second crisis dummy variable takes the value of 1 for the 2008-2010 period and 0 otherwise to control for the 2008-2009 crisis. Estimations are repeated by including the interaction terms for liability dollarization rate and the above dummy variables into the model.

Against this background, the findings of the descriptive analysis of the data and the estimation of the above models are summarized below. The findings highlighted here are mostly focused on the results pertaining to the sales growth. The results for employment growth estimations, which are not presented here due to shortage of space, are observed to be mostly in tandem with those for sales growth.[4]

Chart 3. Net Profit Margin in Manufacturing Firms* (Percent)



* Net profit margin is aggregated by after-tax profits to sales ratio weighted by firms' sales.
Source: CBRT Sectoral Balance Sheets.

Especially with the adoption of the floating exchange rate regime after the 2001 crisis, SMEs with limited FX-denominated income have increasingly reduced the amount of FX-denominated borrowing relative to TL-denominated loans. This lessened their balance sheet vulnerabilities against exchange rate shocks. Indeed, during the crisis of 2008-2009, the contraction in firms' net profit margins, driven partly by exchange rate volatility, was more limited with respect to that experienced during the 2001 crisis (Chart 3). Moreover, the average borrowing and the share of financial expenses in sales were significantly down following the crisis of 2001. These findings support the view that firms had a healthier balance sheet during the 2008-2009 crisis than the 2001 crisis.

Econometric results show that an increase in liability dollarization drives firm's growth rates higher. In other words, access to a low-cost FX-denominated fund alleviates borrowing constraints, thus supporting the growth performance of firms. This impact is more evident in exporters with high dollarization rates. Yet, across firms with a low exports ratio (non-exporting firms included) but with high liability dollarization rate, dollarization is estimated to have an adverse impact on the growth performance of firms. In other words, in unhedged balance sheets, liability dollarization is found to have a negative effect on sales growth rates of firms. Accordingly, to avoid the exchange rate risk, these firms are advised to use financial derivatives in the short term and increase their FX-denominated income in the long term.

[3] By period averages, firms above the 75 percentile are classified as firms with high dollarization rates while firms ranking below the 50 percentile are classified as firms with low dollarization rates. Similarly, firms ranking above the 75 percentile of exports to sales ratios are classified as firms with high export ratios (exporters) while firms below 50 percentile are classified as firms with low export ratios (non-exporting firms included).
[4] For further details, see Alp and Yalçın (2015).

The estimations also show that the impact of liability dollarization on the growth performance of firms was positive during the 2001 crisis but negative during the 2008-2009 crisis, when external demand was remarkably weak. This finding confirms the fact that, in order to avoid the exchange rate risk, firms should be more competitive in export goods whose external demand is less sensitive to cyclical movements or crises. Thanks to the competitive advantage gained amid the Turkish lira depreciation and the strong external demand in 2001, liability dollarization is estimated to have a positive influence on the growth performance of firms, but due to the weak external demand during the crisis of 2008-2009, dollarization led to a contraction in firms' growth performances even though the negative balance sheet effect was more limited compared to the crisis of 2001.

Among firm-specific variables, leverage ratio, export ratio and labor productivity made a positive contribution to the sales growth performance of firms, while the lagged value of sales growth contributed negatively. The coefficients of the leverage and the productivity are found to be very high. This finding implies that it is possible to increase the growth performances of firms in Turkey to a great extent by improving their access to finance and raising their labor productivity. In addition, estimating a positive coefficient for exports shows that firms tend to maintain a balance between their income and borrowing in terms of currency composition. An increasing export share not only boosts direct sales but also supports the sales growth performance of firms indirectly by alleviating the financial constraints through easing their access to FX-denominated loans.

The above analysis shows that firms can restrain negative balance sheet effects and thus have a sustainable growth performance if they establish a balance between their FX-denominated liabilities and FX-denominated assets (natural hedge). Furthermore, it appears that, by increasing their export performances, SMEs are able to minimize their borrowing constraints by borrowing in FX-denominated loans and thus have a higher growth performance. In sum, adopting policies to raise firms' competitiveness in external markets not only facilitates low-cost FX-denominated borrowing but also avoids the negative balance sheet effects of these liabilities. In this regard, more sustainable profit margins and growth rates are attainable only if export rates are higher.

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Box 4.2 Macroeconomic Effects of International Energy Prices

Developments in energy prices entail significant dynamic effects for many countries. Since most of the energy needs in Turkey are met through imports, energy items make up a majority of the consumption basket, and energy-exporting countries account for a large share of Turkey's exports. The movements in energy prices can be influential on the economy through various channels. Due to these channels, the current account balance, inflation and external demand are sensitive to the changes in energy prices.

This box analyzes the effects of post-2006 changes in international energy prices on some macroeconomic variables. The analysis is based on the methodology by Kılınç and Tunç (2014), which estimates monetary policy shocks.[5]

The macroeconomic variables for the Turkish economy are expressed in the following structural form, $A(L)y(t)=\varepsilon(t)$, where $y(t)$ are variables observed at time t; $A(L)$ is a non-singular coefficient matrix with a lag value of L; and $\varepsilon(t)$ denotes the structural shocks at time t. Based on the block exogeneity assumption, $y(t)$, $A(L)$ and $\varepsilon(t)$ can be treated as domestic and external factors in the following way:

$$y(t) = \begin{bmatrix} y_d(t) \\ y_e(t) \end{bmatrix}$$

$$A(L) = \begin{bmatrix} A_{11}(L) & A_{12}(L) \\ A_{21}(L) & A_{22}(L) \end{bmatrix}$$

$$\varepsilon(t) = \begin{bmatrix} \varepsilon_d(t) \\ \varepsilon_e(t) \end{bmatrix}.$$

If the reduced form equation is written as $B(L)y(t)=u(t)$, the structural shocks can be re-written in terms of the reduced form equation residuals:

$$\varepsilon(t) = A_0 u(t).$$

Based on the block exogeneity assumption, domestic variables affect external variables neither simultaneously nor in a lagged fashion. Therefore, the entry $A_{21}(L)$ always takes the value of 0. Block exogeneity is an important and plausible assumption particularly for small open economies.

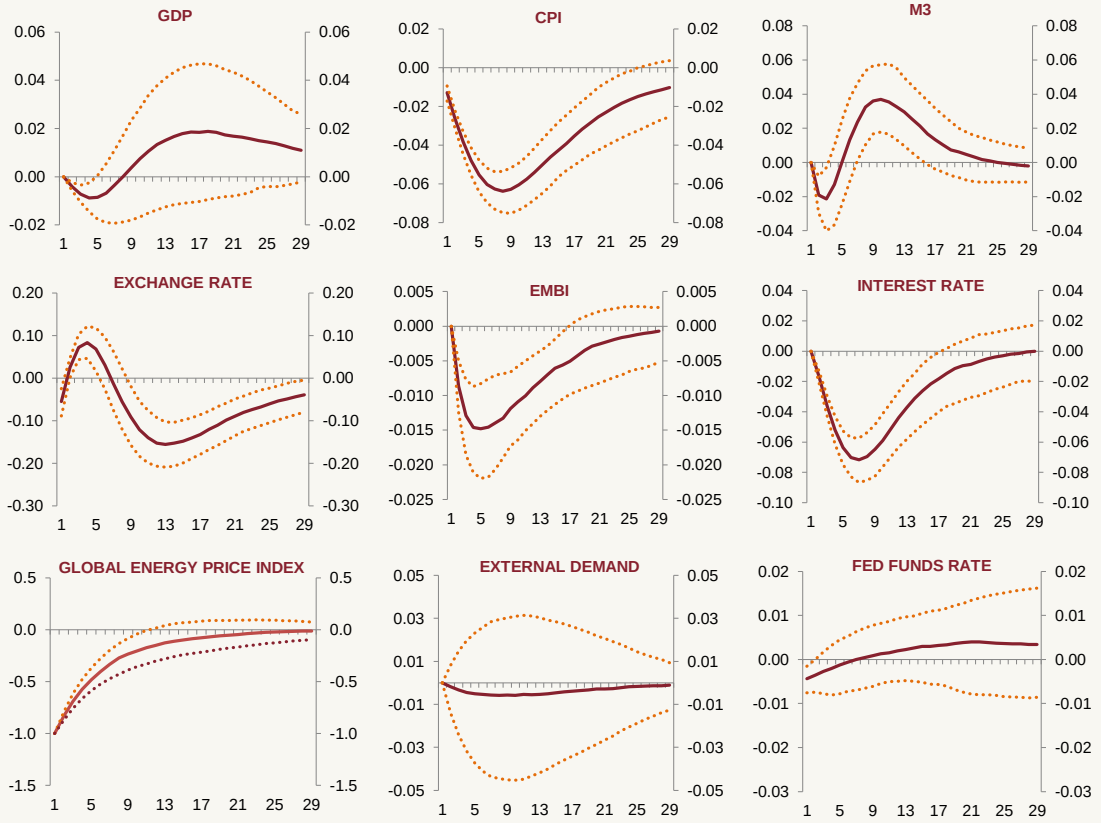
The model uses monthly data, where external variables (y_e) are the World Bank Energy Price Index, World Industrial Production Index and the Fed funds rate (monthly effective federal funds rates), while domestic variables (y_d) are GDP, CPI, M3, the exchange rate, EMBI and the average overnight interest rate at the IMM.

Chart 1 shows the effect of a 1-percent fall in international energy prices on other macroeconomic variables by impulse-response functions. Changes in energy prices appear to have a major impact on inflation. Consumer prices in Turkey decline in response to the 1-percent fall in global energy prices and this decline reaches a peak of 0.07 percent by the second quarter. This effect is also statistically significant over the whole period. Another variable that generates a strong statistically significant response is the risk premium indicator EMBI. Falling energy prices lead to a rapid decrease in Turkey's risk premium, which amounts to 0.015 points at the end of a quarter. This finding is consistent with the fact that energy imports are a key driver of external deficit in Turkey and decreases in energy prices help external deficit to narrow.

[5] For the structural VAR model and the block exogeneity assumption, see Kılınç and Tunç (2014).

Accordingly, falling energy prices can be considered as contributing to the decline in Turkey's riskiness by helping to restore the current account balance. As an immediate response, the real exchange rate increases (appreciates) in line with the fall in the risk premium but decreases (depreciates) later. Changes in the GDP, on the other hand, are not statistically significant throughout the period but a 1-percent fall in energy prices causes the GDP to grow by about 0.02 points over almost a year. Economically speaking, this effect on GDP is due to counteracting individual factors such as the increased domestic purchasing power driven by lower energy prices as well as the adversely affected GDP performance of energy producing economies accounting for a large share in Turkey's exports and the resulting decrease in the external demand from these economies. Lastly, on the interest rate front, the overnight rate appears to have eased in line with the reduced inflation and risk premium. This decline is statistically significant and reaches a peak by the second quarter.

Chart 1. Impulse-Response of Macroeconomic Variables to 1-Percent Energy Price Shock*
(Percent)



* Horizontal axis denotes number of months after the shock. Dotted lines represent the 99 percent confidence interval.

In conclusion, global energy prices seem to have a profound impact on the Turkish economy. As a result of the fall in energy prices, the inflation and the risk premium decline, while the GDP grows slightly and the interest rate drops.

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