

4. Supply and Demand Developments

The first-quarter national accounts data are consistent with the outlook presented in the April Inflation Report. Economic activity remained robust, albeit having a slower rate of growth than in the first quarter, while the main driver of growth was domestic demand, primarily of the private sector. Meanwhile, exports remained weak and imports continued to accelerate, causing net external demand to make a negative contribution to growth. Thus, the divergence between domestic and external demand growth displayed during the exit phase has become more pronounced, and the foreign trade deficit widened further.

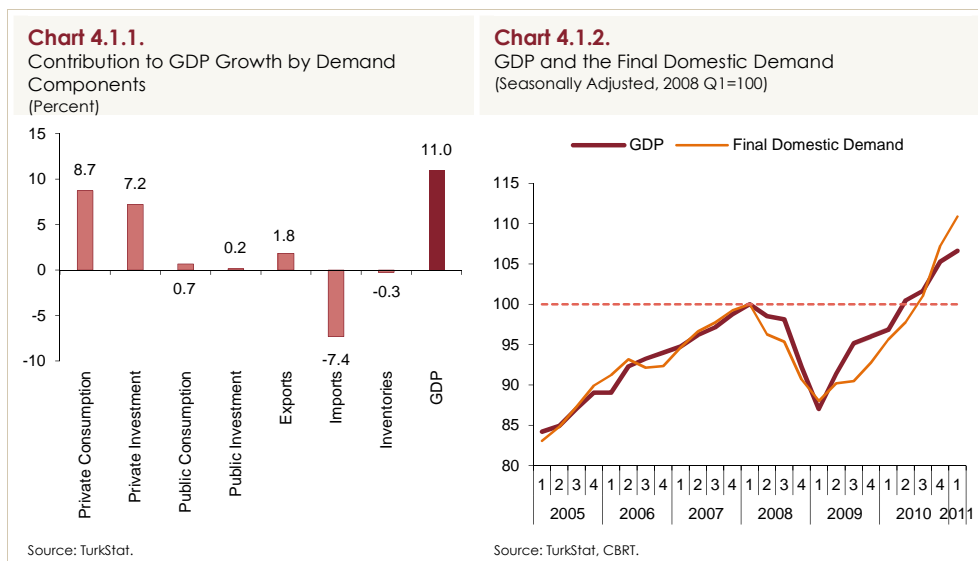
Second-quarter data indicate a quarter-on-quarter weakening in economic activity. Seasonally adjusted data showed that industrial production has contracted for four consecutive months since February, and domestic demand indicators also confirmed the slowdown. A featured question while heading into the second half of the year is whether this trend will be permanent or not. Leading indicators signal that the slowdown in the second quarter will not turn into a long-term recession. However, given the lagged effects of the policy measures and the pace of slowdown at the global scale, domestic demand is expected to settle into a milder path of growth.

Under the current outlook with receding unit labor costs owing to productivity gains and low levels of capacity utilization rates due to weak external demand, aggregate demand conditions are not expected to exert an upward pressure on inflation. However, both the high levels of energy and other commodity prices as well as the developments that weaken external demand will delay the recovery of the current account balance.

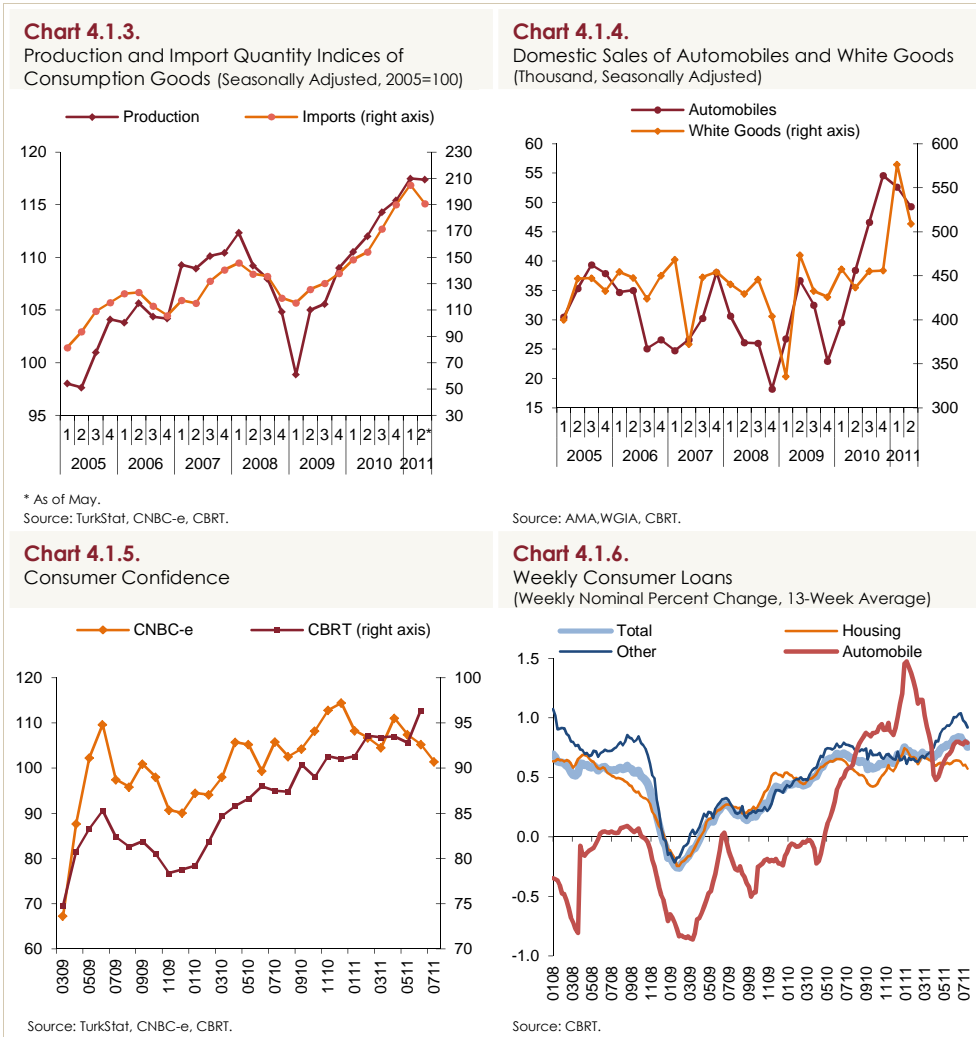
4.1. Gross Domestic Product Developments and Domestic Demand

According to the national accounts data released by TurkStat, GDP increased by 11.0 percent year-on-year during the first quarter of 2011. The largest contributor to annual growth was private demand, for both consumption and investment. Due to relatively weak exports and strong import demand, net external demand made a negative contribution to annual growth (Chart 4.1.1).

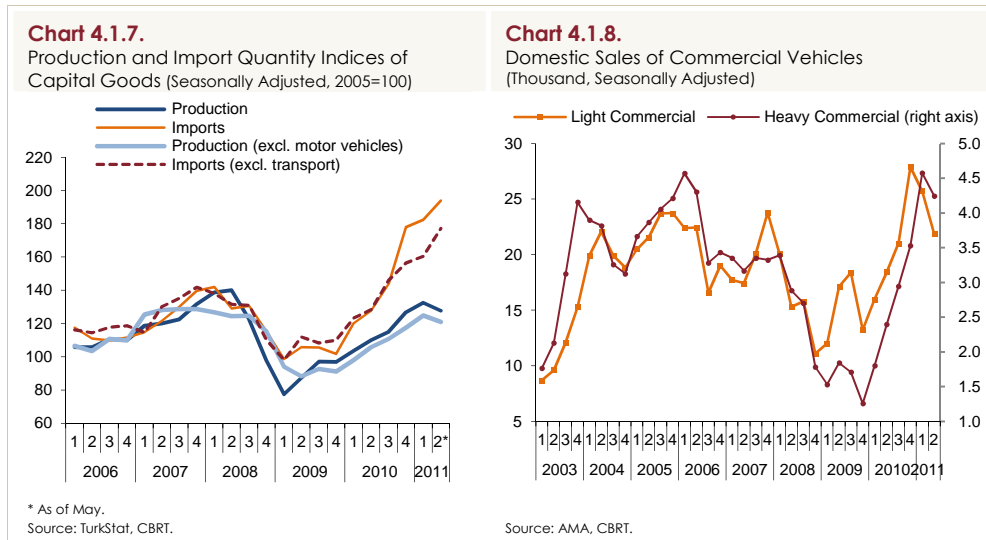
The seasonally adjusted GDP expanded by 1.4 percent in the first quarter, slowing down slightly. Having maintained its strong pace during this period, final domestic demand was the main driver of the quarterly growth (Chart 4.1.2). Meanwhile, external demand remained relatively weak, and hence, external and domestic demand diverged further.



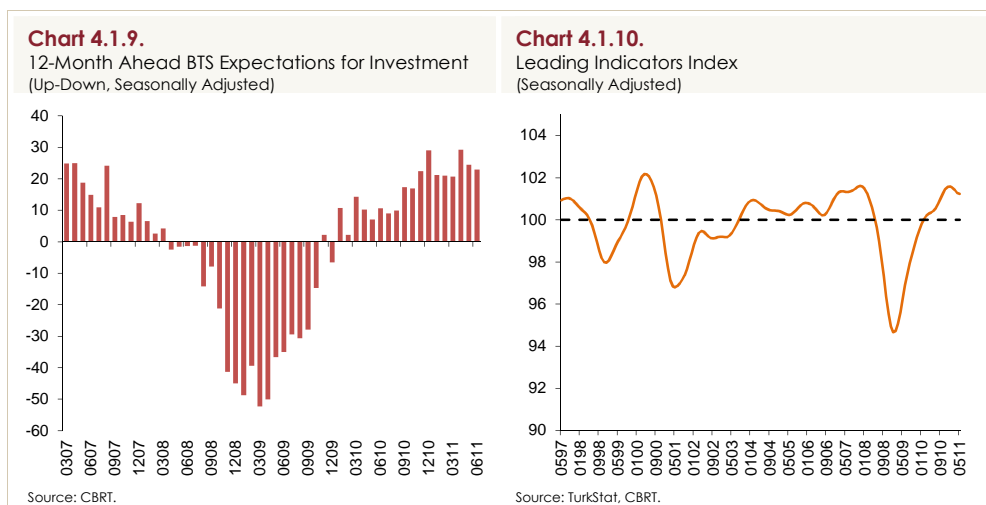
The second-quarter data point to a slowdown of the robust growth in private sector demand. Production and imports of consumption goods, which are among private consumption demand indicators, remained below the first-quarter averages in the April-May period (Chart 4.1.3). Automobile and white goods sales also displayed a quarter-on-quarter decline in the second quarter (Chart 4.1.4). Consumer confidence indicators indicated a moderate pace for consumption demand as well (Chart 4.1.5).



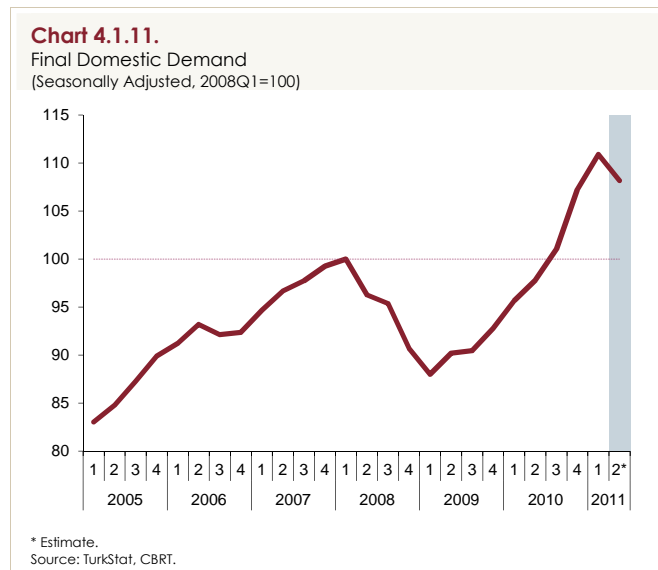
Investment demand indicators also signal a slowdown in economic activity in the second quarter. The downward trend in capacity utilization rates in this period partially reduced the need for investments. Imports of investment goods continued to rise while the production of investments goods declined in the April-May period compared to the first quarter (Chart 4.1.7). Relative price movements are considered to account for the post-crisis divergence between imports and the production of investment goods (Box 4.1). Domestic sales of light and heavy commercial vehicles remained below the first-quarter averages (Chart 4.1.8).



A featured question at this point is whether the second quarter slowdown in domestic demand indicators will become permanent or not. The slowdown in the second quarter is attributed to the recently adopted policy measures as well as the general election process and the deteriorating global growth outlook. The ongoing increase in consumer loans during the first two weeks of June, albeit a slight slowdown, indicates that the credit channel continues to support growth (Chart 4.1.6). Having stabilized at high levels since the onset of 2011, 12-month-ahead investment expectations maintained this trend also in June, signaling that the investment propensity remains strong (Chart 4.1.9). As of May, the composite index constructed by aggregating selected leading economic indicators hardly contains signals for a permanent slowdown (Chart 4.1.10).

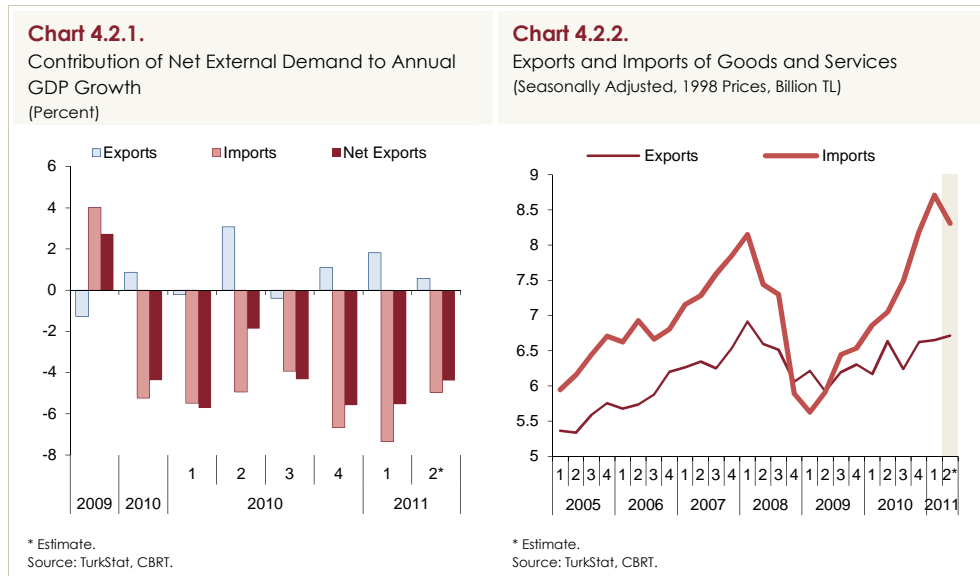


In sum, given the recently released data, it is estimated that the domestic demand declined in the second quarter (Chart 4.1.11). However, both the general election process and the escalating global problems in the said period complicates to monitor the underlying trend in domestic demand and to identify the effects of the policy measures. Current indicators signal that the contraction in the second quarter is not permanent. However, given the lagged effects of the policy measures and the global slowdown, domestic demand is expected to follow a milder path of growth in the second quarter.

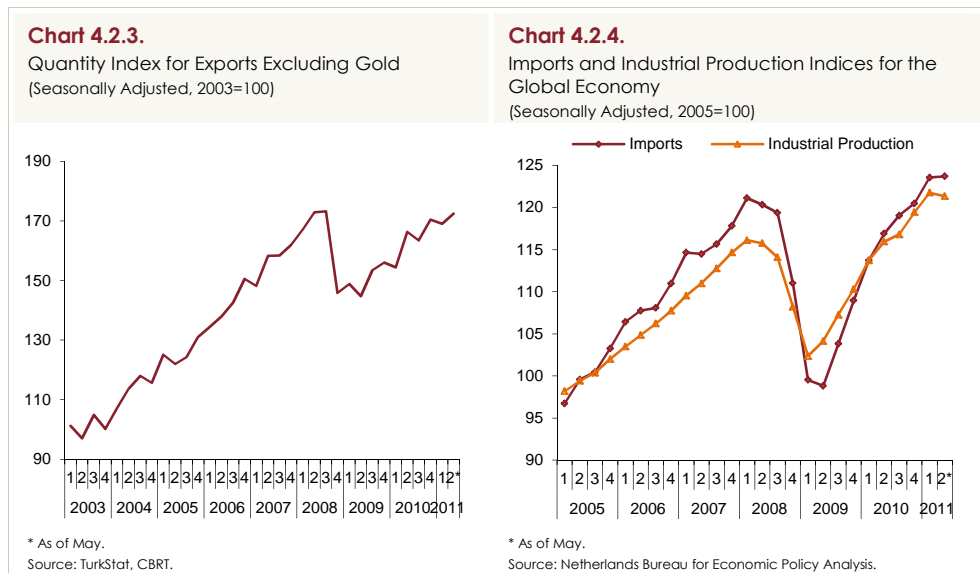


4.2. External Demand

The first-quarter outlook for external demand was broadly consistent with the April Inflation Report forecasts. While exports of goods and services increased by 7.7 percent year-on-year, imports of goods and services were up 27.0 percent in this quarter, resulting in a further negative contribution of net external demand to annual growth (Chart 4.2.1). In seasonally adjusted terms, exports followed almost a horizontal course, and remained below pre-crisis levels. Meanwhile, imports displayed a robust quarter-on-quarter increase. Reflecting the divergence between demand components, this situation has led to a deterioration in foreign trade balance (Chart 4.2.2.)

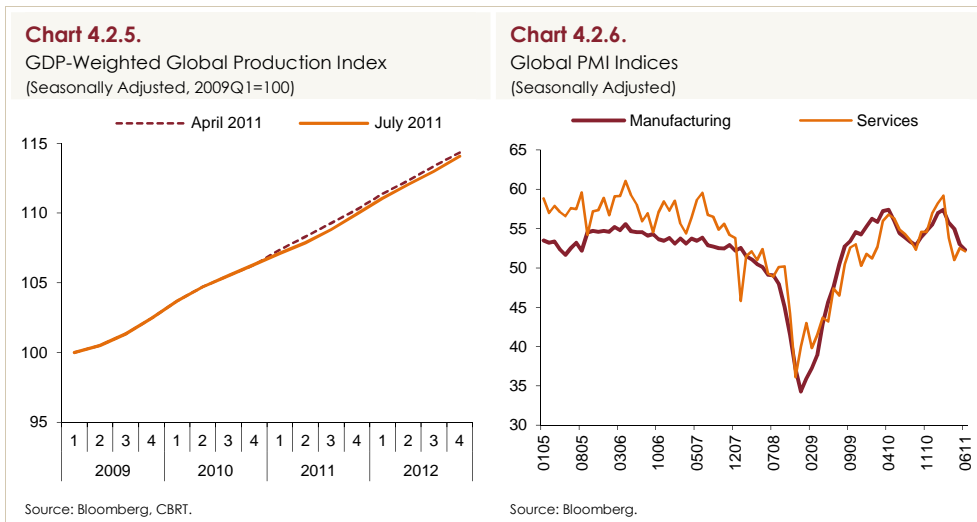


The seasonally adjusted quantity index excluding gold, one of the key indicators of exports, maintained its gradual increase in the second quarter of 2011 (Chart 4.2.3). Compared to the pre-crisis period, exports still display a weaker pace of recovery and continue to dampen aggregate demand. Given the recently released data, exports of goods and services are estimated to have increased at a modest pace in the second quarter (Chart 4.2.2).

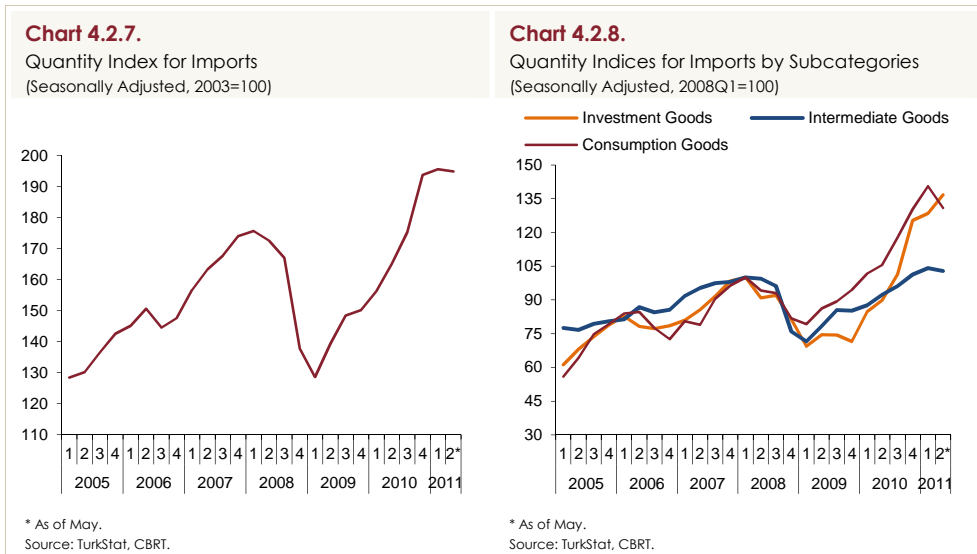


Recent developments in international markets have increased downside risks to global growth. The possible spillover of the Greek debt crisis into other

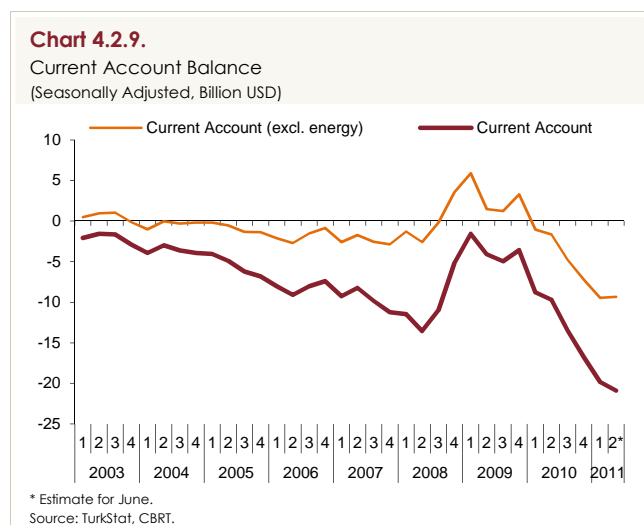
European countries, the slowing pace of recovery in the U.S. and the weak Japanese economy following the earthquake led the economic activity to slow down on a global scale (Chart 4.2.4). Accordingly, growth forecasts were revised downwards especially for the U.S. and the indebted Greek, Portuguese and Irish economies, compared to the previous reporting period (Chart 4.2.5). The global manufacturing and services PMI indices suggest that the slowdown in economic activity may continue into the third quarter of the year (Chart 4.2.6). Meanwhile, growth forecasts for the euro area, our main trading partner, remained virtually unchanged, barring a remarkable revision to the external demand outlook. As a result, the prediction that the recovery in exports will be slow and gradual parallel to the economic developments in the external markets is maintained in this reporting period as well.



Due to the robust course of domestic demand in the first quarter of 2011, imports increased sharply. Second-quarter indicators point to a weaker course for domestic demand and imports compared to the previous quarter. In fact, the seasonally adjusted import quantity index remained below the first-quarter average in the April-May period (Chart 4.2.7). In this scope, imports of goods and services are estimated to have decreased in the second quarter on a quarterly basis (Chart 4.2.2). An analysis of main industrial groups suggests that imports of consumption and investment goods are well above pre-crisis levels parallel to the domestic demand, while imports of intermediate goods remain limited in line with the weak course of external demand. This observation is another indicator of the divergence between domestic and external demand components (Chart 4.2.8).

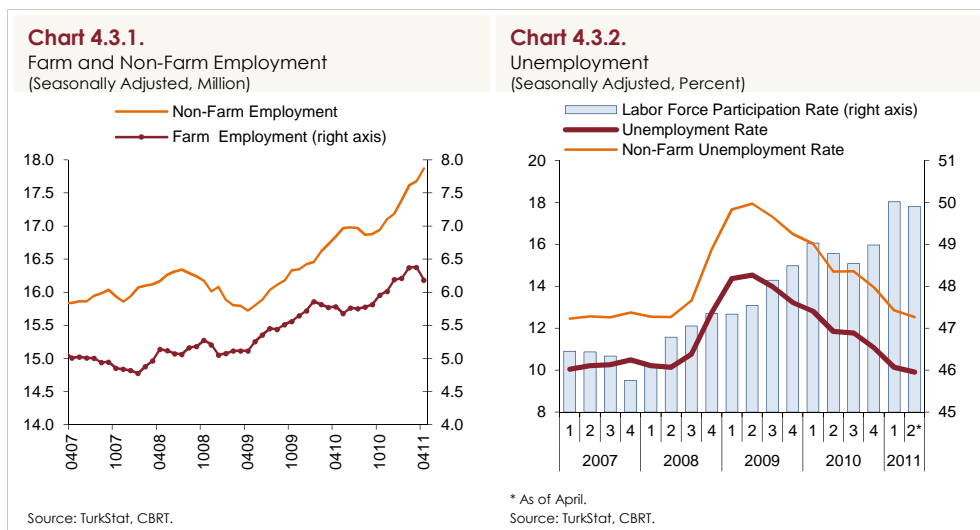


In sum, parallel to the mild recovery in exports and the slowdown in the demand for imported goods, the negative contribution of net external demand to growth is expected to have declined in the second quarter of the year (Chart 4.2.1). However, high energy and other commodity prices coupled with developments weakening external demand delay the recovery of the current account balance. In fact, the recently released data suggest that the deterioration in the foreign trade balance still persists in the second quarter of 2011, albeit at a slower pace (Chart 4.2.9). Given the current global outlook of weak external demand conditions, containing domestic demand is still critical with respect to both inflation outlook and financial stability.

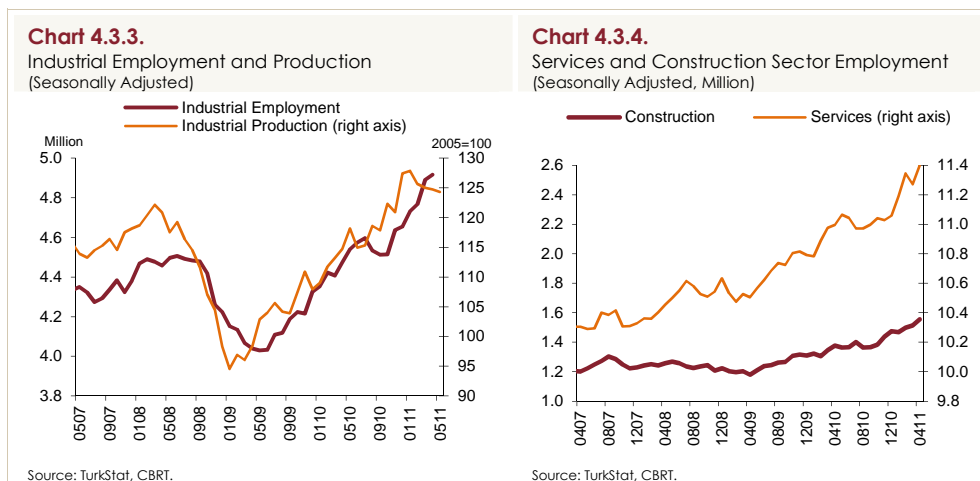


4.3. Labor Market

First-quarter employment developments turned out to be more favorable than the outlook presented in the April Inflation Report. The ongoing uptrend in non-farm employment since the last quarter of 2010 was maintained in the January-April period. Farm employment, which displayed a similar course to non-farm employment up to April, slowed down in this period (Chart 4.3.1). With the sharp increase in employment, the unemployment rate has fallen back to its pre-crisis levels as of the first quarter of 2011 (Chart 4.3.2).

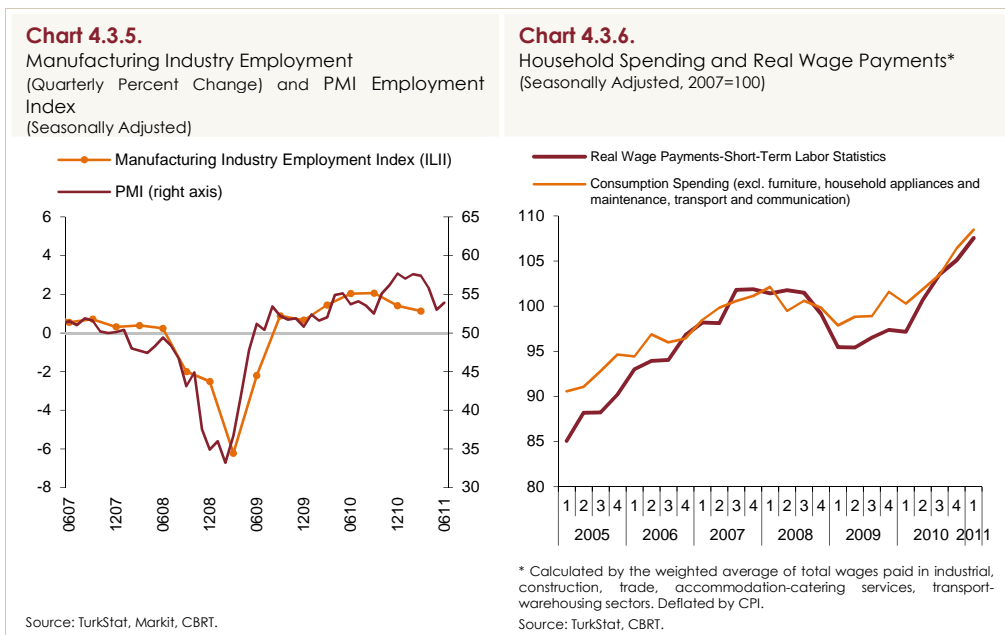


The increase in non-farm employment in the first quarter of 2011 was provided through the contribution by all main sectors, primarily the services and the industrial sector (Charts 4.3.3 and 4.3.4). However, in April, the services sector continued to support non-farm employment growth, while the robust rate of increase in the industrial sector slowed down.

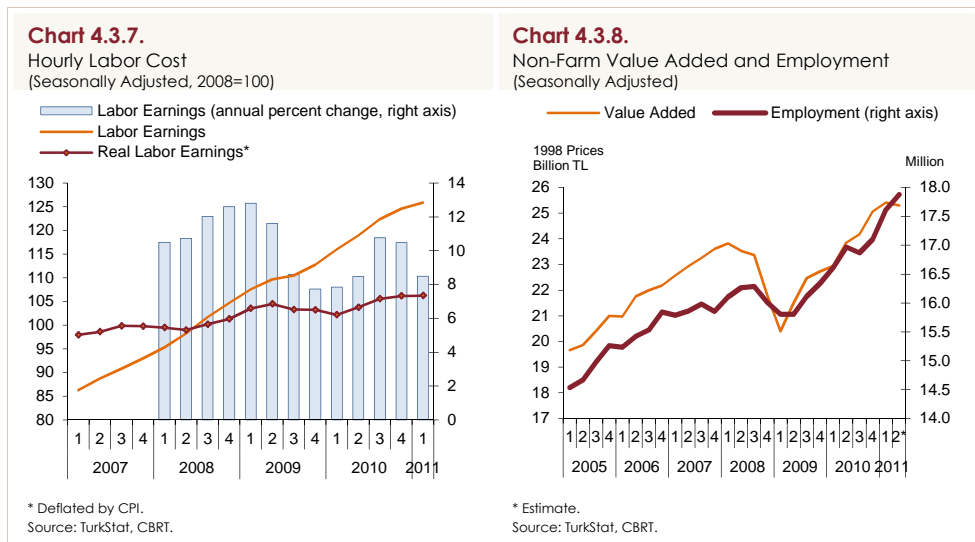


Recent developments suggest that the rate of increase in industrial employment may decelerate on the back of the slowdown in economic activity. Industrial production contracted for four consecutive months in the February-May period, while the PMI employment index, a leading indicator for employment developments, maintains its low level compared to the first quarter, albeit having increased slightly in June. (Chart 4.3.5). These indicators point that employment conditions in the industrial sector may deteriorate as of May.

The recovery in employment conditions in the first quarter of 2011 continued to support domestic demand (Chart 4.3.6). Despite going down to pre-crisis levels, unemployment rates are unlikely to have exerted remarkable pressure on wages in the said period. In fact, no significant upward movement was observed on labor costs in the first quarter of 2011, and the real wage index reflecting developments in average hourly wages remained flat (Chart 4.3.7). On an annual basis, productivity gains exceeded the increase in real wage index, and thus, real unit wages fell back to pre-crisis levels (Chart 6, Box 4.2). However, the fact that the current data on average wage developments reflecting labor costs are also influenced by the employment composition and the lack of a wage index for showing only wage movements, obstructs a sound analysis on wages (Box 4.2).



To sum up, non-farm employment maintained its uptrend, while industrial employment displayed a slight decline as of April 2011. Leading indicators suggest that employment conditions in the industrial sector may deteriorate starting from May (Chart 4.3.8). In addition, both the stabilizing policy measures as well the envisioned milder course of aggregate demand conditions in the second quarter on the back of the recently escalating global problems are expected to slow down the rate of employment growth compared to the past two quarters.

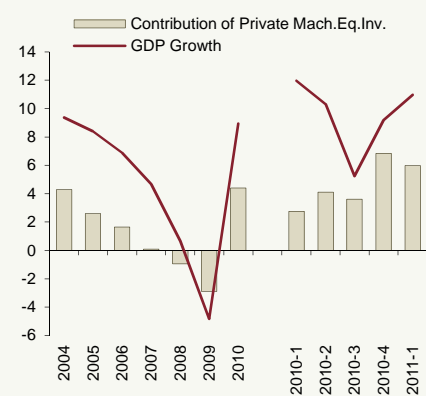


Box
4.1

Prices of Investment Goods and Investment Spending

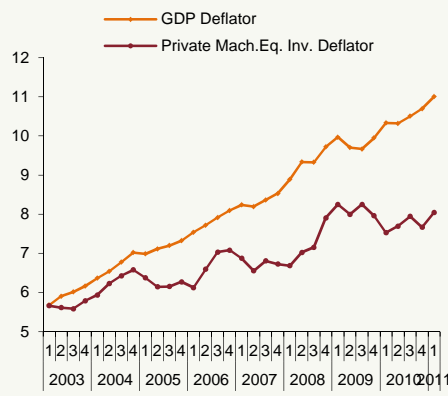
Displaying a rapid recovery in the post-crisis period, private sector machinery and equipment investments gained momentum in the last quarter of 2010, and also continued to rise in the first quarter of 2011. Thus, private sector machinery and equipment investments played a great role in the robust recovery of the domestic demand during the post-crisis period (Chart 1). The strong course of private sector machinery and equipment investments is attributed to favorable demand expectations and better financing conditions as well as the relatively lower prices for investment goods. In fact, an analysis of the relative prices obtained from dividing the investment goods deflator by the GDP deflator suggests that the relative price of investment goods trended downwards in the post-2003 period (Charts 2 and 3). Meanwhile, the decline in the relative prices of investment goods causes the share of private sector machinery and equipment investments within GDP to vary at constant and current prices (Chart 4). This divergence became more pronounced after end-2003, when relative prices started to decline. Prices of investment goods that increased more moderately than general prices indicate that more physical value can be obtained by allocating a lower share of the GDP. In fact, in terms of the share within GDP, machinery and equipment investments, which approached pre-crisis levels at current prices in the first quarter of 2011, realized well above pre-crisis levels at constant prices.

Chart 1. Contribution of Private Sector Machinery/Equipment Investments to Annual Growth and GDP Growth (Percent)



Source: TurkStat.

Chart 2. Private Sector Machinery/Equipment Investments and GDP Deflators (Seasonally Adjusted)



Source: TurkStat, CBRT.

Chart 3. Relative Prices of Investment Goods and the Share of Private Sector Machinery/Equipment Investments within GDP (Seasonally Adjusted)

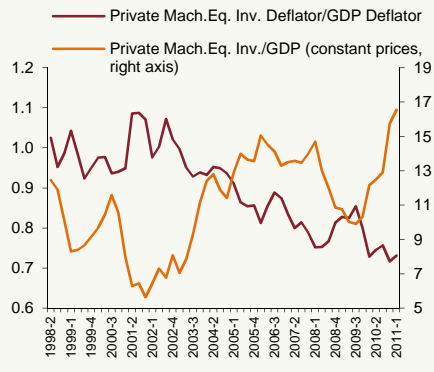
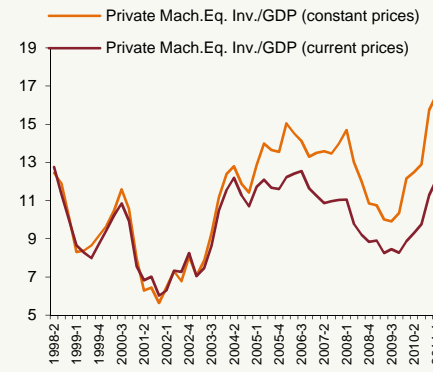


Chart 4. The Share of Private Sector Machinery/Equipment Investments within GDP (Seasonally Adjusted)



The fall in the relative prices of imported investment goods is also believed to have an impact on the relative cheapening of investment goods. In fact, prices of imported investment goods diverged from overall import prices to a great extent after 2003 (Chart 5). In this respect, it would be helpful to consider that, among other factors, the price advantage has also contributed to the increase in imports of investment goods (Chart 6).

Chart 5. Imports Unit Value Indices (2003=100)

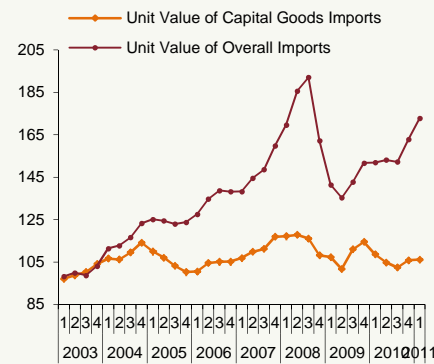
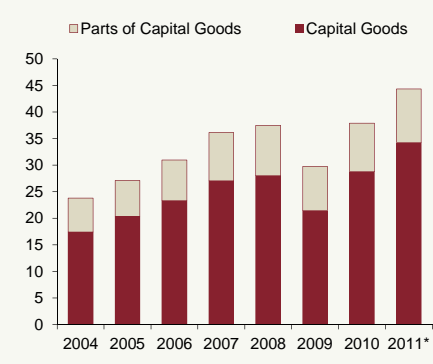


Chart 6. Investment Goods Imports (Billion USD)



In sum, the decline in relative prices of investment goods in recent years caused the relative cost of investments to fall, and supported the growth of private sector machinery and equipment investments amid rising investment appetite and favorable financing conditions. The surge in investments fed into macro financial risks in the short term as it deteriorates the current account balance; however, it will positively contribute to both inflation and potential production by expanding the productive capacity of the economy in the medium term.

Box
4.2

Data on Wages and Earnings

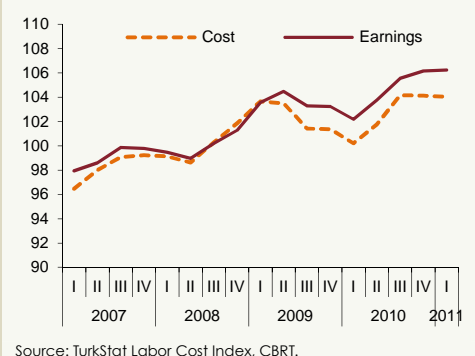
Developments on wages and productivity as well as the labor market structure are significant factors affecting inflation through both demand and cost channels. In periods when aggregate demand remarkably exceeds the potential output (periods of overheating in the economy), wages may be subject to pressure and the medium-term inflation outlook may deteriorate. Thus, the course of wages is critical to central banks and financial markets. Several wage series based on various methods and criteria are present for Turkey. In order to be able to interpret these series from an economic perspective, understanding how these series are derived is crucial. This Box analyzes various data on wages and earnings published by different sources. Moreover, these indicators are compared on a sectoral basis to reveal their similarities and differences.¹

Sources regarding wage series can be classified under four main categories: hourly costs and earnings indices published under Labor Cost Indices, wages per hour worked indices calculated indirectly from Short-Term Business Statistics, Labor Cost Index published under Building Construction Cost Indices, and average daily earnings obtained from SSI bulletins. The first three of these series are announced by TurkStat on a quarterly basis, while the last one is a monthly publication by the SSI.²

The Labor Cost Index, which has been published since July 2010, measures the nominal hourly cost of employing a wage earner. The main components of this index are divided into two as earnings (the indicator of hourly changes in regular or irregular payments made to wage earners) and non-earnings (social security, severance and termination payments

by the employer). The difference between the two series, which move in parallel,

Chart 1. Non-Farm Costs and Earnings
(Real, 2008=100, Seasonally Adjusted)



¹ All data, excluding those from the SSI, are seasonally adjusted. Data are deflated by CPI.

² In the rest of the Box, hourly wages calculated from Short-Term Business Statistics will be referred to as wages per hour worked to avoid confusion with those from the Labor Cost Index.

is affected by legal arrangements that are reflected on costs. In fact, the difference between costs and earnings indices grew stronger due to legal arrangements on premium payments of employers introduced at end-2008 (Chart 1).³

Another series to monitor sectoral average wage developments is the Short-Term Business Statistics published by the TurkStat. This dataset has been published since 2005 on a quarterly basis for the industrial, construction and services sectors compiling employment, hours worked and gross wages-salaries indices.

Short-Term Business Statistics and Labor Cost Indices have been published since 2005 and 2007, respectively. Although the data sources of Short-Term Business Statistics and Labor Cost Indices are mostly similar, differences exist with respect to calculation of these indicators. Main differences can be listed as follows:⁴ Firstly, there are no hourly wage series directly published under Short-Term Business Statistics. For each main sector, the gross salaries index that reflects total wage payments is divided by hours worked in order to calculate the wage per hour worked. In the Labor Cost Index on the other hand, hourly wage data are directly published by main sectors and sub-sectors (sections).⁵

Another difference is in weighting. While constructing indices for main sectors, sub-indices are aggregated by using the sectoral weights obtained from the base year values of the respective variable. The base years used for sectoral weight calculations of these indices differ. The base years for the indices published under Short-Term Business Statistics and Labor Cost Indices are 2005 and 2008, respectively. Moreover, gross wages-salaries and hours worked indices, which are components of the wage per hours worked index, are aggregated by their own weights, while the hourly labor cost calculated at sectional level is aggregated by weights of gross wages.⁶

³ As per the Law on Amendment to the Labor Act No 763 and Some Acts, private sector employers who employ workers were provided with incentives. Accordingly, 5 points of the employers' share in insurance premiums shall be covered by the Treasury. This amendment was put into effect on October 1, 2008.

⁴ These differences are compiled by the announcements of the TurkStat.

⁵ The Statistical Classification of Economic Activities in the European Community (NACE), which serves as a basis for TurkStat's data, runs from general to specific as Section, Division, Group and Class. For example, the NACE Rev2 classification is composed of 21 Sections, 88 Divisions, 272 Groups and 615 Classes.

⁶ Hourly wage indices are calculated under the labor cost indices on a sectional basis. Then, aggregation is made by using base year weights obtained from gross wage-salary values. Under Short-Term Business Statistics, employment, hours worked and gross salaries-wages indices calculated at class or group levels are aggregated by main sectors using base year weights of these variables.

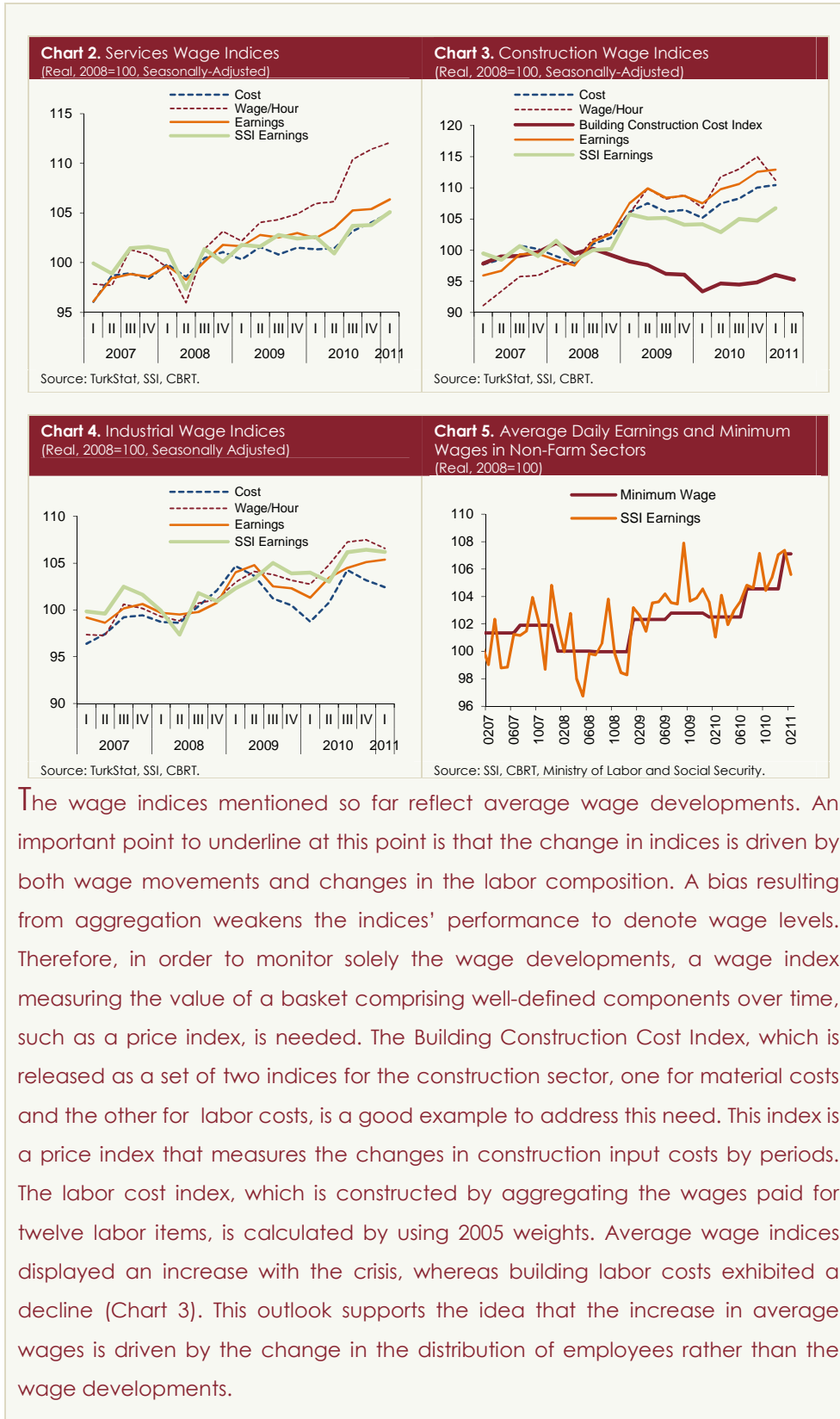
In addition, differences between these indices also exist in terms of scope. In the calculation of Labor Cost Indices, data obtained from enterprises with twenty or more employees in industrial and construction sectors are adjusted to cover enterprises with one or more employees by using the coefficients from Annual Labor Statistics. Gross salary-wage and hours worked indices published under the Short-Term Business Statistics are not adjusted as above.

Another difference regarding the coverage is the exclusion of finance and insurance activities from the services sector compiled under Short-Term Business Statistics. The said sub-sector is included in the Labor Cost Index by using data obtained from the BRSA.

To sum up, hourly cost and earnings indices are considered to be more reliable than wage per hours worked indices as they are computed at a more disaggregated level.

Hourly cost and earnings indices and wages per hour worked indices are consistent in general across sectors (Charts 2-4). As the gross wage-salary index under the Short-Term Business Statistics does not include the insurance premium of the employee paid by the employer, the level of the wage per hour index is closer to that of the hourly earnings index. The difference between these indices is more evident for the services sector (Chart 2). It is believed that differences arising from the above-mentioned aggregation are most prominent in the services sector due to higher number of sub-items in this sector.

Another data for monitoring average wage developments are found in the Insured Person Statistics Bulletin published by the SSI. These data are calculated by the reported daily earnings applicable to employer-sponsored insurance premiums. Although, the availability of these data on monthly frequency and sectoral basis is an advantage, the irregular publication of SSI bulletins and the high volatility of daily average earnings limit the use of the data. Due to this volatility, converting the data to a quarterly series by taking 3-month averages enhances the informative value. The graphical representation of this series with labor earnings and average wage per hours worked indices displays a similar pattern, notwithstanding the absence of a one-to-one relation (Charts 2-4). Moreover, SSI earnings data are also parallel with minimum wage, which sets a lower bound to wages (Chart 5).

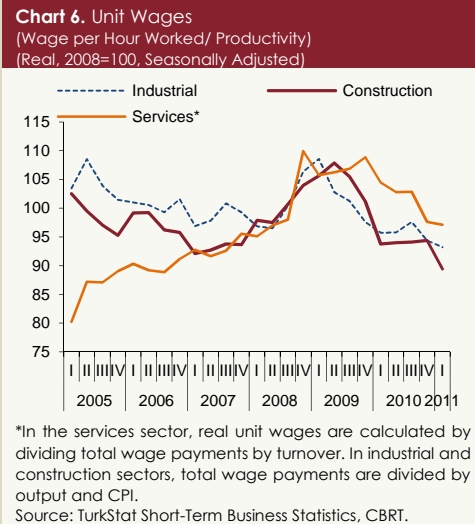


An analysis of general trends in wage indicators demonstrates that average real wages in industrial and construction sectors decreased over 2009 following the crisis, before increasing again in 2010. In the services sector, which was relatively less affected by global problems as it is less sensitive to external conditions, real wages kept increasing at a limited rate in the crisis period and at a faster pace since the second half of 2010.

Driven by domestic demand, the robust trend of growth in Turkey since the second quarter of 2009 highlights concerns over “overheating”. Real earnings and labor cost indices show no evidence of an overheating economy. What is more, wage developments should be examined together with the productivity developments in this perspective.

When productivity outpaces/lags behind wages, unit wage costs may decrease/increase. In an economy with high productivity gains, rapid growth can be sustained without leading to inflationary pressures. An analysis of unit wages calculated by Short-Term Business Statistics indicates that productivity increased across all main types of business activity and contributed to disinflation in the post-

crisis period. The ongoing downtrend in unit wages as of the first quarter of 2011 indicates that wage developments do not imply overheating (Chart 6).



Box
4.3

What the Economic Clock Says About Current Economic Activity

Identifying the current state of the economy and estimating its future course is crucial for decision-making process of the economic agents. Leading indicators constructed by macroeconomic data are among the most influential tools in the economic literature in order to determine the turning points in the economy.

This Box integrates the economic clock approach to coincident and leading indicators index for the Turkish economy constructed by using the OECD-CACIS method⁷, and thereby provides information about current economic activity and its possible future course.

Economic clock is used in order to analyze the state and the course of the economy, where the horizontal axis shows the standardized level⁸ of the index while the vertical axis denotes its month-on-month change (Figure 1). Different states of the economy correspond to different quadrants in the economic clock. In the first quadrant, the standardized level is below zero, indicating a month-on-month increase. This may imply that the economy is coming out of the bottom. In the second quadrant, the level is above the value implied by its long-term trend and continues to rise month-on-month, pointing to an economic growth. In the third quadrant, the level is above zero, but shows a monthly decline, indicating a slowdown (below-average growth) in economic activity. Lastly, in the fourth quadrant, both the level and the monthly growth rate are below zero, which denotes that economic activity remains below the potential implied by its long-term trend and grows less than the average. As illustrated by the figure, the economic clock is supposed to move clockwise.

⁷ Leading indicators are constructed by using the "Cyclical Analysis and Composite Indicators System (CACIS)" program that facilitates the development of cyclical analysis and leading indicators by the OECD. For more information on the method used by the OECD, please refer to <http://www.oecd.org/dataoecd/37/42/42495745.pdf>.

⁸ Standardized level x_t^s is obtained by dividing the long-term average of x minus $x(\bar{x})$ to its standard deviation: $x_t^s = (x - \bar{x})/\sigma_x$.



Table 1. Classification of Indicators

Lagging Indicators	Coincident indicators	Leading Indicators
(PMI) Input inventory	CPI	(CNBC-e) Consumer Expectation, Tendency and Confidence Indices
(PMI) Delivery times	CPI-based real effective exchange rate (2003=100)	(PMI) Work backlogs
(PMI) Output Inventory	CPI Emerging Economies-based real effective exchange rate (2003=100)	(PMI) Export orders
Use of credit cards	CPI Advanced economies-based real effective exchange rate (2003=100)	(PMI) Employment
Total exports	(PMI) Input prices	(PMI) Quantity of purchases
Consumer loans	(PMI) Output prices	(PMI) Production
Consumption index (credit/debit card transactions index, real, excluding food)	SCA-H	(PMI) New orders
Consumption index (credit/debit card transactions index, real, total)	SCA-I	(CBRT) Expectations Survey Questions
Domestic loan utilization	Foreign exchange basket	(CBRT) Business Tendency Survey Questions
	Electricity production	(CBRT) Real Sector Confidence Index
	Raw steel production	(CBRT) Consumer Confidence Index
	Services prices	PMI Index
	Total number of liquidated firms	Export quantity index
	Capacity utilization rate	Import quantity index
	Automobile production	Imports of intermediate goods
	Imports of capital goods	Import quantity index for intermediate goods
	Production of commercial vehicles	Import quantity index for capital goods
	TEA Export figures	Import quantity index for consumption goods
	Number of TIR transit permits	Domestic tax on goods and services (Nominal and Real)
	Number of TIR carnets	VAT on imports (Nominal and Real)
	Total imports	GDBS rate (Simple and compound)
	(CNBC-e) Consumption Index	Global industrial production index
		ISE National Services Index
		ISE National Industrial Index
		ISE National 100 Index
		ISE National Financial index
		ISE National Technology Index
		OECD Composite Leading Indicators
		US Composite Leading Indicators
		Balance of Payments, total commercial loans
		Balance of Payments, commercial loans to banks
		Domestic sales of white goods, exports and production
		Domestic sales and exports of automobiles
		Domestic sales and exports of commercial vehicles
		Number of new firms
		PPI
		PPI Energy
		PPI Manufacturing
		PPI Oil

Chart 1. Cyclical Components of Coincident and Leading Indicators

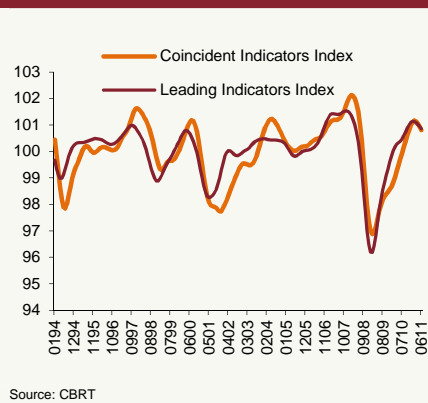
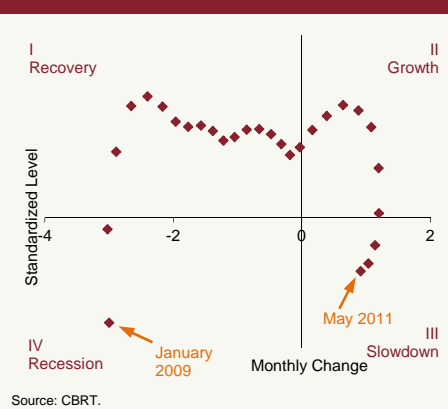
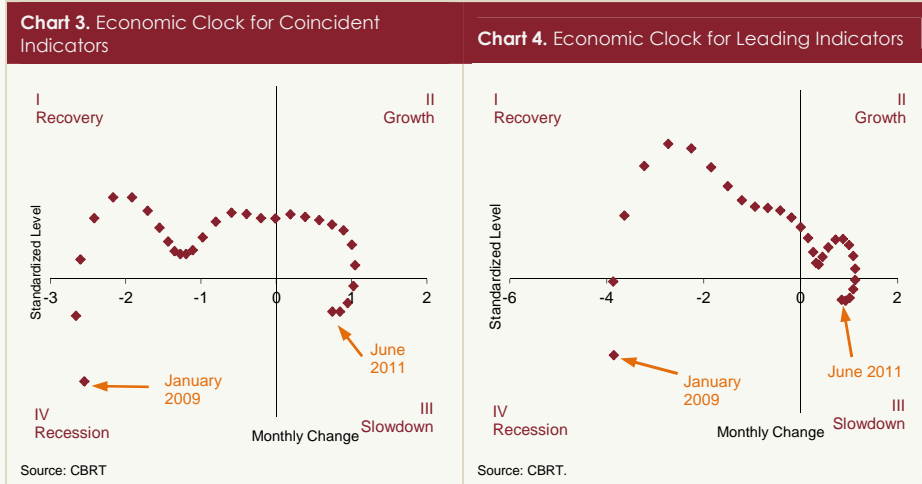


Chart 2. Economic Clock for Economic Activity



The economic clock for the economic activity constructed by using industrial production index cycle is shown in Chart 2. According to the economic clock, the growth pace that started in June 2010 lost momentum in March 2011.



Economic clocks for coincident and leading indicators are shown in Charts 3 and 4, respectively. The economic clock constructed for leading indicators signals signs of economic growth in February 2010, while the economic clock constructed for coincident indicators points to August 2010 as the start of the economic growth cycle, as expected by the methodology. Similarly, the economic clock for leading indicators points to January 2011, whereas the economic clock for coincident indicators indicates March 2011 as the start of the slowdown in economic activity. The coincident indicators index, as expected, monitors the changes in the economy contemporaneously, while leading indicators index helps to foresee the developments in the economy.

Recent observations as of June 2011 reveal that the economic clock for the coincident indicators index points to a more pronounced deceleration in economic activity in the second quarter. The economic clock constructed for the leading indicators index exhibits a pattern of converging points in the third quadrant in the recent months, which indicates that economic growth will remain below average for a while.

Box
4.4Fixed Capital Growth Loss during the Recent Crises and Its
Impact on the Potential GDP

The question of overheating in the economy has recently been a top agenda item. "Overheating" of an economy occurs when aggregate demand remarkably exceeds the productive capacity and upward pressures on inflation become more pronounced. For a sound analysis, a careful analysis of supply and demand dynamics of the economy is required. In this context, a close scrutiny of the dynamics regarding fixed capital investments (machinery and equipment investments and construction investments), which are major contributors to productive capacity, is significant in elucidating these discussions.

Past international experiences show that deep financial crises may bring about persistent negative impacts on productive capacity.⁹ If a crisis leads to a significant loss in productive capacity, the post-crisis recovery in demand would pose risks to price stability by stretching the limits of the productive capacity and require central banks to tighten their monetary policies. In this context, the impact of the last global crisis on productive capacity is an agenda item of the CBRT as well as many central banks around the world.

One of the significant impacts of crises on productive capacity is through slowing down the capital growth.¹⁰ In economic crises, workplaces and manufacturing facilities become idle, leading to a slowdown in existing or planned investments, which has an adverse effect on the future productive capacity of the national economy. For instance, vacant hotels in the crisis period cause existing or planned hotel investments to lose pace, which in turn would reduce future lodging capacity. This loss in capacity would not be significant during the crisis as the operating hotels are also less occupied. However, as the economy rebounds, occupancy rates may surge more rapidly due to the said capacity loss. Therefore, this capacity loss may give way to upward pressures on accommodation prices during economic recovery.

⁹ Furceri and Mourougne (2009), Cerra and Saxena (2008).

¹⁰ "Recessions typically have little effect on potential output beyond the direct effect of lower investment on capital accumulation, and that effect tends to diminish in the long run when investment recovers to normal levels." U.S. Congressional Budget Office, *The Budget And Economic Outlook: Fiscal Years 2010 To 2020*, p.38. In addition to the capital effect, the global crisis may have slowed down the potential growth by creating adverse and lasting effect on the financial system and the labor markets in some countries (e.g. in the U.S.). However, these effects are believed to be relatively limited in the Turkish case.

Slowdown of investment during 2001 and 2009 crises in Turkey are illustrated in Chart 1. Although investments fell drastically both during the 2001 crisis and the recent one, the fall in the latter crisis is more limited and short-lived than in the former one. The capital growth is shown in Chart 2. The annual average capital growth, which was 5 percent in the 1987-2010 period, went remarkably below this average during both crises; however, the fall in the 2001 crisis was more acute and long-lasting. The amount of cumulative capital loss due to these below-average growth rates is illustrated separately for both crises in Chart 3 as a function of the time passed since the onset of the crisis. Capital loss reached nearly 11 percent in the 2001 crisis, but remained around 4 percent in the last crisis.

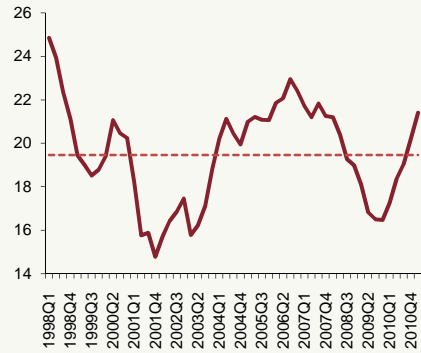
By multiplying the capital losses in Chart 3 by 0.5, the estimated value for the capital income share for Turkey, potential GDP effects for these losses can be roughly estimated. This estimation shows that potential GDP loss reached 5.5 percent in the 2001 crisis ($11\% \times 0.5 = 5.5\%$), and hovered around 2 percent in the last crisis ($4\% \times 0.5 = 2\%$).

How large and long-lasting the capital loss (and the resulting potential GDP loss) can be is shown in Chart 3 for the 2001 crisis. The capital loss, which led to a GDP loss of 5.5 percent in the 2001 crisis, was recovered only roughly by 2008. In contrast, the potential GDP loss incurred by the capital loss in the last crisis led to a potential GDP loss of only 2 percent and has already been recovered by around 40 percent so far on the back of the rapid recovery in investments. In other words, the remaining potential GDP loss is around 1 percent as of mid-2011.

In short, the capital loss that occurred in the last crisis (and the resulting potential GDP loss) remained more limited than in the 2001 crisis and this loss was largely compensated thanks to the rapid recovery in investments. This caused the capacity loss in the economy to remain fairly limited in the last crisis, and played an important role in preventing capacity utilization rates from reaching levels that would create inflationary pressures (i.e. "overheating"), despite the robust economic recovery following the crisis.

Chart 1. Fixed Investments

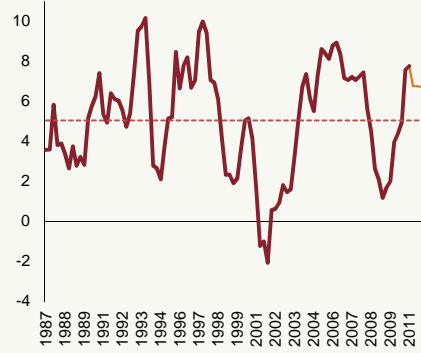
(Percent of GDP, Seasonally-Adjusted)



Source: TurkStat, CBRT.

Chart 2. Fixed Capital Index Growth*

(Annual Percent Change, Seasonally-Adjusted)

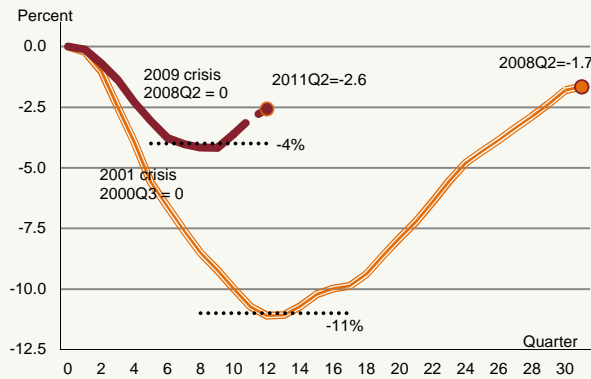


* Figures for after 2011Q1 are CBRT estimates. The dashed line shows the sampling average.

Source: Demiroğlu (2011), TurkStat, CBRT.

Chart 3. Effects of 2001 and 2009 Crises on Capital Index*

(Deviation of Index Level from Average Growth Trend in Percent)



* The horizontal axis shows the quarter following the crisis.
2011 figures are estimates. Capital share is assumed to be 50 percent.
Source: Demiroğlu (2011), TurkStat, CBRT.

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