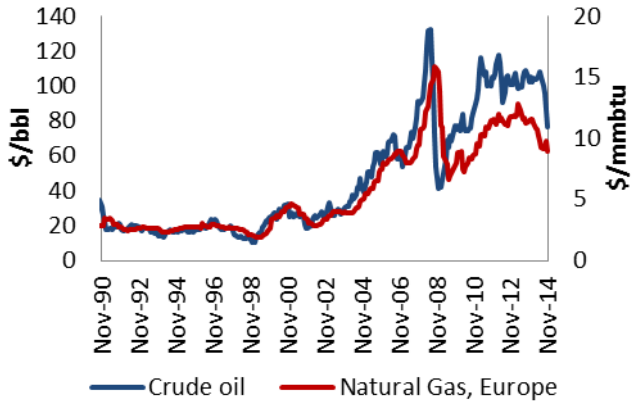
THE WORLD BANK
IBRD • IDA

- Turkey`s external energy shortfall of 6 percent of GDP accounts for 58 percent of the trade deficit.
- The sharp decline in energy import prices – if sustained - will support stronger growth, external adjustment, and disinflation in 2015.
- The impact of falling energy prices on the fiscal balance is small.

Energy prices have declined sharply since June 2014 and futures prices suggest that in the absence of policy changes by the large oil producers or additional global shocks, they will remain weak during much of 2015. Crude oil prices have declined by more than 40 percent from this year`s high of $108 per barrel (bbl) in mid-June because of large increases in supply and a weakening global oil demand. The boom in US shale oil production contributed significantly to excess supply in the market, while competition among OPEC countries to retain market share hampered the cartel's ability to curb production. Part of the decline in commodity prices also reflects the stronger US dollar. The dollar has appreciated against all major currencies since July, reflecting the more buoyant economic performance in the US and the ongoing normalization of monetary policy by the Fed. European natural gas prices are expected to ease in line with the developments in the oil market, with a lag.[1] Historically, the correlation between natural gas prices in Europe and the average crude oil price is 0.98 for the period 1990-2013 (Figure 1).

Figure 1: Energy Prices



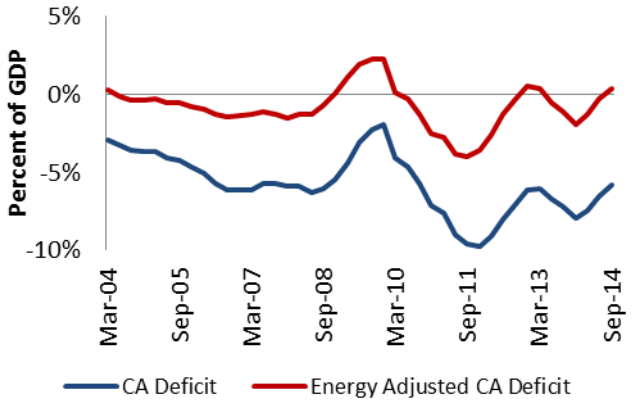
Energy prices have important consequences for macroeconomic developments in Turkey, a country highly dependent on energy imports. The change in oil prices influences the Turkish economy mainly through four channels: growth, balance of payments, inflation, and the budget. This note discusses and, to the extent possible, quantifies the macroeconomic effects of the recent fall in energy prices.

[1] The Russian gas export prices are directly linked to the oil price with a 6 month lag.

The domestic end-user energy prices depend in part on the exchange rate. The impact of oil prices on inflation and nominal tax revenues depends also on the local currency price of energy commodities. The performance of the Lira can strengthen or weaken the disinflationary pressures in Turkey. If the Lira appreciates against the US dollar, the initial shock will be larger than suggested by the dollar price change, and will be smaller otherwise.

Energy imports contribute significantly to Turkey's external imbalances. The 12-month rolling energy deficit has been fluctuating between 6 and 6.8 percent of GDP since January 2012 (Figure 2). Average annual energy imports account for about 23 percent of merchandise imports, while the annual deficit accounts for 58 percent of the merchandise trade deficit.

Figure 2: Energy Dependence of Turkish Economy



Lower energy import prices will help reduce Turkey`s large current account deficit and, therefore, lower financing needs. There are two approaches for estimating the impact of energy prices on external balances – both employ a simple regression with the current account balance as the dependent variable. The first estimates the impact using relative prices, while the second uses dollar denominated energy prices and separately controls for real exchange rate changes in the regression. The latter approach is preferable, because it allows to measure the direct impact of dollar denominated energy prices on the current account balance, other things equal. The regression result shows that a 10 percent decline in energy prices leads to a 0.39 percentage point improvement in the current account balance to GDP ratio.[2] The coefficient of energy prices captures the direct impact of energy prices on the current account balance, while the indirect effects, through growth, foreign exchange rate and inflation, are absorbed by the non-energy variables.[3] Under a hypothetical oil shock scenario that assumes oil

[2] The full specification is: Δ(CA as Percent of GDP) = 0.001 – 0.039*Δ(Energy Prices) – 0.11*Δ(Growth ^{Turkey}) – 0.44*Δ(Growth ^{G7}) + 0.03*Δ(Real Exchange Rate) – 0.95MA(1). All coefficients, except the intercept, are significant at 0.05 significance level. The sample covers the time period from 1993 to 2013. Newey-West standard errors and covariance matrix is used.

[3] Quantifying the transmission channels and their impact requires general equilibrium framework, which is beyond the scope of this focus note.

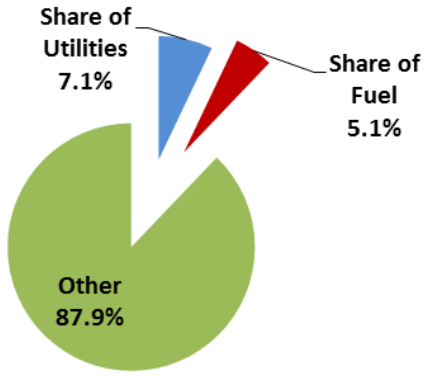
prices to average $70/bbl in 2015, the current account balance to GDP is estimated to improve by 1.1 pps in 2015, other things equal.

End-user gas prices also depend on BOTAS`s ability to adjust its prices. A cost-based pricing mechanism for electricity and natural gas went into effect in July 2008. The mechanism provides for quarterly adjustments by the energy regulator EMRA of the price of electricity and for quarterly (if needed even monthly) adjustments by BOTAS of the price of natural gas. EMRA and BOTAS make the formal notifications about electricity and gas price adjustments, respectively. EMRA has applied the electricity pricing mechanism consistently since 2008. However, BOTAS may not fully reflect the decline in gas import costs on end-user prices, in light of the lack of full pass-through to prices at times of import cost increases in the past.

Lower energy prices are likely to translate into lower inflation in 2015. The share of fuels and utilities in the consumer basket is 5.1 percent and 7.1 percent, respectively (Figure 3). The former is tightly linked to the local currency price of oil, and the latter is determined by the local currency price of natural gas. The share of the ex-refinery price contributes roughly 30 percent to the price paid at the pump, and taxes contribute for the remaining 70 percent. Thus, the impact of a change in oil prices on inflation is limited, and disproportionate to the original shares in the consumer basket, because of the tax structure. The immediate impact of a 10 percent fall in local currency oil prices is a 0.3 pps reduction in headline inflation. If the utility prices were to adjust to the fall in energy prices, this impact would be higher.

Lower energy prices have a limited impact on fiscal revenues. Energy prices influence the central government budget through two channels: the special consumption tax and the value added tax on energy imports. The special consumption tax on energy products brought about TL45.2 billion (2.9 percent of GDP) in 2013. The tax is levied per physical unit and does not depend on the value of the product. The VAT on imports of oil and natural gas amounted to about TL19 billion (1.2 percent of GDP). Our estimates suggest that if oil prices average $70/bbl in 2015, fiscal revenues will decline by less than TL3.5 billion (0.2 percent of GDP) other things being kept equal.[4]

Figure 3: Share of Energy in Consumer Basket



Lower commodity prices will help support Turkey's economic growth, while sluggish global demand will naturally weigh down on the country's prospects. The impact on growth is estimated by a simple econometric model, in which the change in the growth rate is regressed on the change in oil prices, the change in the world growth rate, and set of control variables[5]. Our estimates suggest that a 10 percent decline in oil prices lifts growth by 0.37 pps, while a 0.5 pps decline in the global growth rate leads to 0.4 pps decrease in Turkey`s growth rate. Under a scenario that assumes oil prices to average $70/bbl combined with a 0.5 pps drop in global growth in 2015, the net impact is estimated to increase Turkey's growth rate by 0.6 pps, other things equal.[6] The macroeconomic outlook and projections are discussed in detail in the December issue of the Turkey Regular Economic Note.

In summary, the impact of lower oil prices on Turkey's economy is sizable. Oil prices of $70 bbl in 2015 will ease the current account deficit by 1.1 pps, shave 0.9 pps off consumer price inflation, and boost growth by 0.6 pps. The impact on the fiscal balance is limited to less than 0.2 pps of GDP.

*This Focus Note benefited from the inputs provided by Ivailo V. Izvorski, Ulrich Bartsch, Yesim Akcollu, and comments provided by Hans Timmer and Kari J. Nyman.

[4] Over the medium term, there may be some positive effects on the budget revenues indirectly through the improved balances of SOEs.

[5] The full specification is: $\Delta(\text{Growth}^{\text{Turkey}}) = 0.004 - 0.037 * \Delta(\text{Oil Prices}) + 0.77 * \Delta(\text{Growth}^{\text{World}}) - 0.035 * \Delta(\text{Real Exchange Rate}) + 2.14 * \Delta(\text{Composite Leading Indicator}) - 1.78 * MA(1)$. All coefficients, except the intercept and $\Delta(\text{Growth}^{\text{World}})$, are significant at 0.05 significance level. The coefficient of $\Delta(\text{Growth}^{\text{World}})$ is significant at 0.1 significance level. The sample covers the time period from 1993 to 2013. Newey-West standard errors and covariance matrix is used.

[6] We are not revising 2015 growth projection, because the decline in the carry-over from 2014 growth performance, revised from 3.5 percent in October Note to 3.1 percent in December Note, offsets the estimated positive spill-over from the lower oil prices.

Contacts:
Kamer Karakurum Özdemir: kozdemir@worldbank.org
Ayberk Yılmaz: ayilmaz@worldbank.org