

SM/13/290  
Correction 2

November 26, 2013

To: Members of the Executive Board  
From: The Acting Secretary  
Subject: **Turkey—Selected Issues**

The attached corrections to SM/13/290 (11/6/13) have been provided by the staff:

**Typographical Errors**

**Page 20, para. 5, line 7:** for "(IMF, 2012b)" read "(IMF, 2012)"

**Page 25:** last two references added

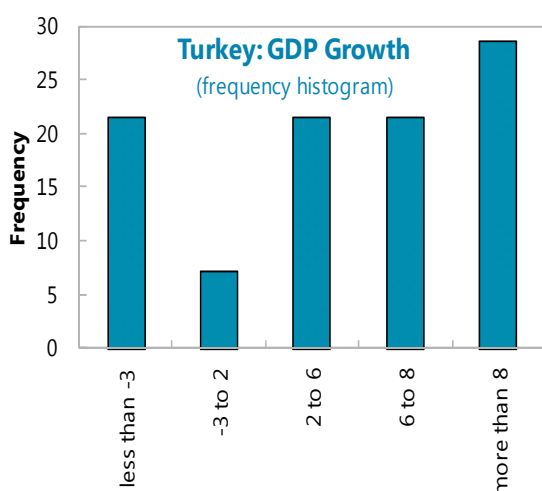
Questions may be referred to Mr. Miniane, EUR (ext. 38791), Mr. Tchaidze (ext. 36603) and Ms. Tambunlertchai (ext. 34033) in SPR.

This document will shortly be posted on the extranet, a secure website for Executive Directors and member country authorities.

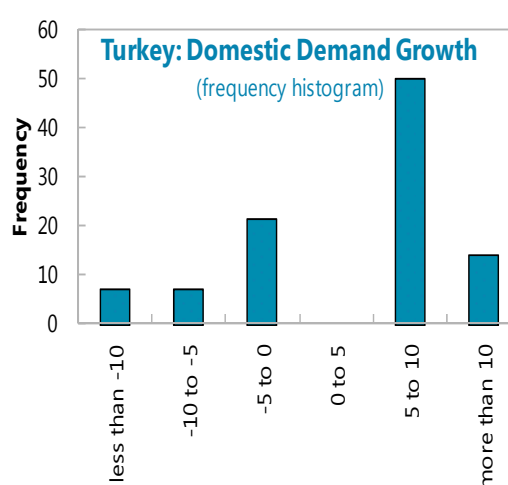
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Source: Haver; WEO; IMF staff calculations.



Source: Haver; WEO; IMF staff calculations.

**3. Given these numbers, it should come as no surprise that Turkey has one of the most volatile growth patterns of any large country.<sup>3</sup>** The standard deviation of output or domestic demand growth in Turkey has been about twice the average in the G-20+Poland space, and this is true whether one looks at all the countries in that group or solely at Turkey's emerging market peers.<sup>4</sup> In fact, only Argentina has shown itself to be more volatile than Turkey over this period.

Standard Deviation of Output

Turkey	5.27
Peers - Average	2.78
Peers - Highest	6.55
Peers - Lowest	1.49

Source: Haver; WEO; IMF staff calculations.

**4. An important reason behind Turkey's high volatility is its dependence on capital inflows for growth.** In a study on Turkey's low savings problem, IMF (2012a) argued at length that Turkey's low national savings meant that, at the margin, investment is financed via foreign savings. When capital inflows are ample, investment expands rapidly, and when capital inflows dry up investment goes into reverse, dragging the economy down with it. Several things seem to confirm this view: (i) on average over the period under study, Turkey has had the second lowest savings rate of any large emerging country, some 10 percentage points of GDP lower than the peer average; (ii) Turkey has suffered the largest decline in its savings rate of any country in the G-20+Poland

<sup>3</sup> We focus on the G-20+Poland group as it is well known that small countries are by nature more volatile, and hence do not provide a valid reference point for the purposes of this discussion.

<sup>4</sup> The peer group is comprised of Argentina, Brazil, China, India, Indonesia, Korea, Mexico, Poland, Russia, and South Africa.

space over this period; (iii) the correlation between economic growth and capital flows is higher in Turkey than in any other country in this group, by far. This correlation is 80 percent.

Correlation - Capital Flows and Growth<sup>1</sup>

Turkey	0.79
Peers - Average	0.18
Peers - Highest	0.61
Peers - Lowest	-0.29

Source: Haver; WEO; IMF staff calculations.

<sup>1</sup> Correlation between the change in net capital plus financial account flows (including changes in foreign reserves) measured as a share of GDP, and GDP growth.

**5. Not only is Turkey dependent on foreign savings, but in addition capital flows to Turkey have been more volatile than to other countries.** The year-to-year absolute change in net capital inflows has averaged close to 3 percent of GDP over the last fifteen years. This compares with a G-20+Poland average of 1.7 percent, and a peer average of 2 percent. Only Russia and Argentina have experienced more volatile net inflows. This begs the question why. One possible explanation is that Turkey has traditionally relied on less stable sources of foreign funding. For example, inward FDI has been below that in peer countries (IMF, 2012<sup>b</sup>), and in recent years the bulk of the current account deficit has been financed via short-term external debt and portfolio inflows, what is traditionally called “hot money.” Another explanation can be found in IMF (2013), which shows that countries which are “more resilient” to capital flows tend to show high co-movement between gross inflows and gross outflows; in periods of large inflows (outflows) by non-residents, outflows (inflows) by residents are large enough to offset their impact, resulting in small net inflows (outflows). This is not the case in Turkey: in fact, Turkey has one of the lowest co-variances between the current account and gross inflows of any country in the forty four country sample in the study, and the lowest among all large emerging countries.

**6. However, the low savings-volatile inflows nexus, although key, is not the only factor behind high output volatility in Turkey.** To start, some countries with saving rates similar to Turkey’s such as Brazil, Poland, and South Africa, have suffered significantly less output volatility—though here one should note that capital inflows to these countries have been significantly less volatile than flows into Turkey.<sup>5</sup> Moreover, there have been years that do not fit the lower inflows-lower growth pattern: to give but one example, GDP growth slowed sharply between 2011 and 2012, from 8.8 percent to 2.2 percent (domestic demand growth went from 9.5 percent to -1.8 percent) yet net inflows increased in 2012 relative to 2011, albeit slightly. Finally, there is the non-trivial issue of causality: in 2001 capital outflows coincided with a growth collapse in Turkey, but only a fraction of the decline in net capital inflows was truly exogenous (driven by the burst in the United States of the IT bubble); in good part, capital flew out of the country as a reaction to

<sup>5</sup> This is partly due to the composition of the flows, for example a much higher share of FDI in total inflows in Poland.

## References

Alberola, E., A. Estrada, and D. Santabábara, 2013, "Growth Beyond Imbalances. Sustainable Growth Rates and Output Gap Reassessment," mimeo.

Borio, C., P. Disyatat, and M. Juselius, 2013, Rethinking Potential Output: Embedding Information About the Financial Cycle," BIS Working Papers No. 404.

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International Monetary Fund, 2012, Turkey: 2012 Article IV Consultation Staff Report, IMF Country Report No. 12/338.

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## Annex I. Econometric Specifications

The goal of the regressions is not to estimate the medium-term “structural” level of the current account as in the Fund’s External Balance Assessment. Rather, it is to understand short-run current account dynamics, specifically the short-run relation between economic growth and changes in the current account. As such, we regress the change in the current account/GDP ratio on various relevant explanatory variables, namely:

- growth, be it GDP growth or domestic demand growth (the latter being more directly linked to import dynamics)
- the dollar change in oil prices (specifically, the WEO oil price index), given that the energy import bill represents a large share of the current account deficit in Turkey
- the percent change in the real effective exchange rate (with a positive change denoting appreciation)
- trading partner growth (measured, alternatively, by domestic demand growth in the European Union—traditionally Turkey’s main trading partner,—the output gap in the European Union, and global growth)

One can think of other variables that affect the current account in the short term such as credit growth or fiscal policy, but they are not included in the main specification because they operate via variables already in the regression, such as economic growth or the real exchange rate. Slow-moving variables such as demographics are not part of these “short-run” regressions. Estimations are done on the 1998–2012 period (the full period for which complete national accounts data exist in Turkey), using both annual and quarterly data. In the latter case, regressions are estimated on the basis of two or three-quarter moving averages to smooth volatility in the data and account for serial correlation at the quarterly frequency.

Results using quarterly data are shown below. In simple, univariate regressions, growth (either GDP or domestic demand), oil prices, and the REER all have the right sign, are highly statistically significant, and explain by themselves a non-trivial share of the dependent variable’s variance (in univariate regressions, trading partner growth is either insignificant or has the wrong sign). Without a doubt, the most important variable is growth, notably domestic demand growth which by itself explains 66 percent of current account dynamics. When the regression is estimated with all explanatory variables, oil prices, the real exchange rate, and trading partner growth “cease to matter” (i.e. their coefficients are no longer significant), but growth remains highly significant.

From these regressions, one can set the left hand side to zero and obtain the level of growth associated with no change in the current account using the ratio  $-c(0)/c(1)$ , where  $c(0)$  is the estimated constant and  $c(1)$  is the estimated coefficient on growth. This assumes no changes in the other variables, but an alternative way to rationalize this is to note that the coefficients on the other variables are not statistically significant. As can be seen, this measure of growth, called here the “speed limit”, is consistently around 3 percent when expressed in annualized terms.