

## MIDDLE INCOME TRAP PROBLEM IS STILL ON THE AGENDA

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### Executive Summary

Increase in labor productivity showed by far the greatest contribution to Turkey's high economic growth rates before the global economic crisis (2002-2008). When high growth rates combined with the appreciation of Turkish Lira against US Dollar on a vast scale, the increase in dollar denominated GDP per capita recorded a great jump. Leaving the global economics crisis aside during which GDP decreased, employment rate and labor productivity almost equally contributed to GDP per capita increases during the years of strong exit from crisis (2010-2011). On the other hand, we know that Turkish Economy grew since 2012 between 2-4 percent after having implemented "balanced growth" policies in order to cope with deepening macroeconomic imbalances. This low GDP growth slowed sizably the increase of GDP per capita. During this period, we observe that labor productivity followed a fluctuating course in terms of GDP per capita contribution (first negative then slightly positive). Finally we would like to underline that, due to very limited increase in total labor productivity, the increase in GDP per capita remained very low in the last four years.

### Introduction

Recently, "the Middle Income Trap" has become one of the mostly debated topics in Turkish Economy. The dollar denominated GDP per capita stuck at 10.000\$ level since 2010, formed the primary source of this debate. Limited growth in annual GDP per capita in constant prices stuck between 0.7-2.7 percent and the significant depreciation of Turkish Lira during the period of 2012-2015 caused GDP per capita not to make any distinct progress after a period of rapid increase.

Even though government is optimistic about reaching 25.000\$ in 2023, international institutions are keeping their medium term growth expectations below 4 percent. These low expectations mainly caused by the stagnancy in productivity and the existence of bottlenecks in this field (OECD, Economic Surveys: Turkey, 2016). The existing concerns on Middle Income Trap will persist if the growth contribution of labor productivity remains low in the following periods.

In the third update<sup>12</sup> of this research, we are trying to contribute to Middle Income Trap debate by investigating the fluctuating share of labor productivity in GDP per capita growth between the period 2005(4) and 2016(2). In order to determine the progress of fore mentioned share, we are decomposing

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<sup>1</sup> Seyfettin Gürsel and Barış Soybilgen, 2013. " Turkey is on the brink of middle income trap" Betam Research Brief 13/154

<sup>2</sup> Seyfettin Gürsel ve Barış Soybilgen, 2014. "Turkey May Not Escape From The Middle Income Trap For a Long Time" Betam Research Brief 14/169

GDP per capita growth into labor productivity, employment rate and working age population. (See “The decomposition of per capita income into its components”).

#### **Four different periods in labor productivity - growth performance**

Per capita income change can be decomposed into three components: 1) The change in the ratio of working age population to entire population, 2) The change in the ratio of employed population to working age population, or the change in the employment rate, 3) The change in the ratio of GDP to employed population or the change in the labor productivity (For mathematical definition. See Box 1. The decomposition per capita income into its components”).

The contribution of working age population to GDP per capita growth is steadily positive but pretty limited. (See

1) High growth period between 2002 and 2008 led by increases in labor productivity, 2) Low quality (in terms of labor productivity contribution) but still high growth period between the second half of 2009 and the second half of 2011, 3) Low growth period between the second half of 2011 and the first quarter of 2013 in which the contribution of labor productivity has drained away. 4) Slight acceleration in growth between 2013 and now with a fluctuating labor productivity whose overall contribution being close to zero.

, Figure 2 and Additional Table 1). Considering the current demographic dynamics, this structural characteristic of Turkish economy is expected to continue but decelerate during the next 20 years. Increase in employment ratio, meaning an increase in the number of people employed in households thanks to rapid increase of female employment ratio, can be considered as a positive but insufficient development for achieving a rapid per capita increase. Indeed, increases of labor productivity is the main factor for to free Turkey from the Middle Income Trap. In order to increase the level of labor productivity, Turkey needs to make investments containing technological progress, improve its human capital and increase the efficiency of economic administration and institutions.

Figure 1 and Figure 2 show quarterly changes in per capita income and its decomposition into above-mentioned components between the period of 2005(4) and 2016(2). Figure 1 and Figure 2 are constituted by first annualizing and then calculating the moving averages of four indicators (GDP per capita, labor productivity, employment rate and working age population) in order to make sub periods more explicit.<sup>3</sup>

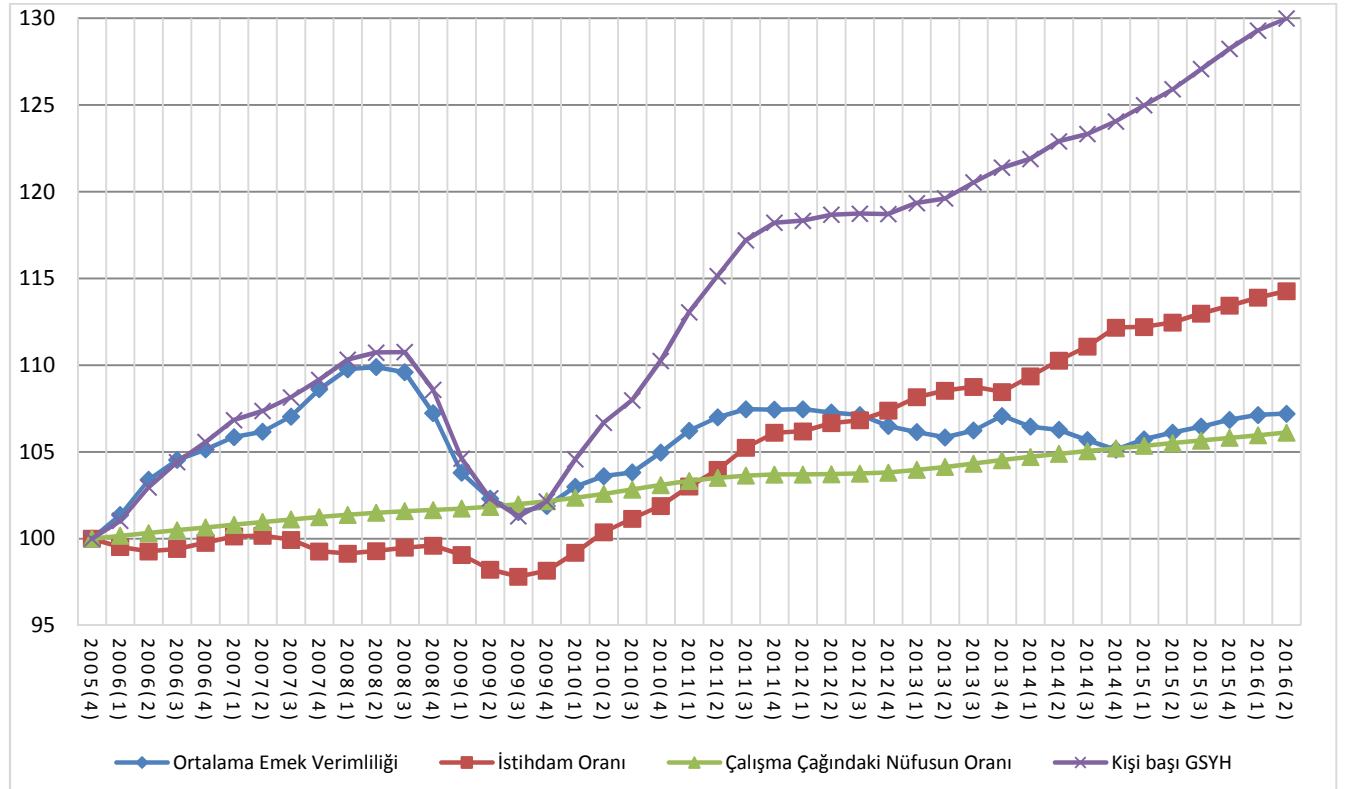
As can be seen from figures, the changes in GDP per capita show high fluctuations as well as changes in its components. Leaving the global economic crisis period aside (great contraction of GDP but very limited decrease in employment thanks to female added worker effect), we observe four distinct periods in regards of GDP per capita speed and the speeds of its components.

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<sup>3</sup> After real GDP, population, working age population and employment are seasonally adjusted, we annualize series by using 4-Quarter moving averages (for real GDP, we sum 4-Quarters), and then we calculate QoQ changes.

1) High growth period between 2002 and 2008 led by increases in labor productivity, 2) Low quality (in terms of labor productivity contribution) but still high growth period between the second half of 2009 and the second half of 2011, 3) Low growth period between the second half of 2011 and the first quarter of 2013 in which the contribution of labor productivity has drained away. 4) Slight acceleration in growth between 2013 and now with a fluctuating labor productivity whose overall contribution being close to zero.

**Figure 1. Per capita GDP index and its components (Seasonally Adjusted, 2005(4) = 100)<sup>4</sup>**



Source: Turkstat, Betam.

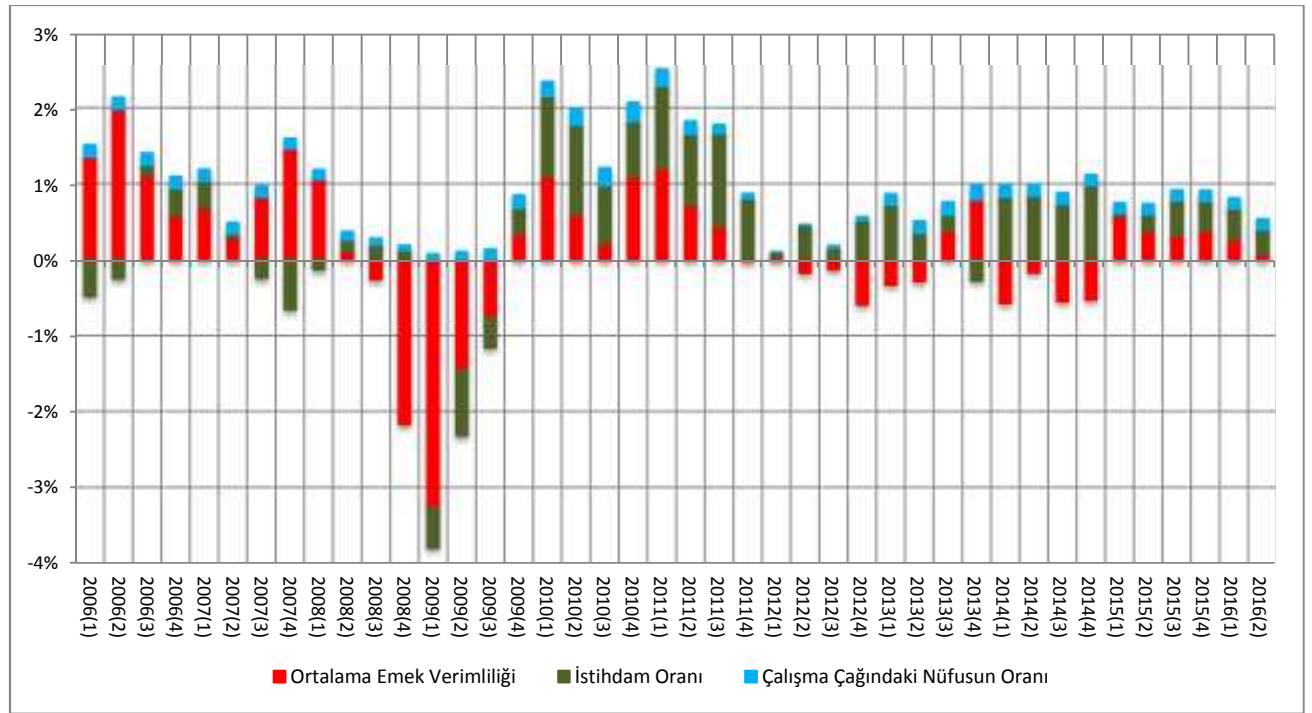
### High growth – Strong increase in labor productivity (2005(1)-2008(1))

As one observes in Figures 1 and 2, most of the per capita income growth is caused by labor productivity gains in the first period. In this period, the contribution of the increase in employment ratio is either very low or negative (Figure 2). This can be clearly seen in Figure 1 in which labor productivity and GDP per Capita figures go hand in hand. There are two factors behind this development: Slump in agricultural employment and labor productivity gains in non-agricultural sectors during this period. One of the most hotly debated topics at that time was “jobless growth”, and that was caused by the rapid decline in agricultural employment. Outside the agriculture sector, the increase in employment was accompanied by productivity gains (roughly 0.5 percent increase in employment for 1 percent growth). The decline in agricultural employment accompanied by just enough increases in non-agricultural employment caused total employment to stagnate.

<sup>4</sup> Because we don't have non-institutional population for February and March 2014, we assume 0.1 percent monthly growth in line with the long term growth trend.

This development which was mostly interpreted as a negative outcome regarding unemployment drove per capita income higher through productivity gains. Both productivity gains in non-agricultural sectors, especially in manufacturing, and the rapid decline in agricultural employment shifted employment from low productivity sectors to high productivity sectors and increased labor productivity significantly. It is clear in Figure 2 that the increase in per capita income is mostly driven by labor productivity gains. Between 2005(1) and 2008(1), labor productivity index rose from 100 to almost 110, and per capita income index reached nearly 111 (Figure 1).

**Figure 2. Year on year GDP per capita component contributions (Seasonally adjusted, 2006(1)-2016(2))**



Source: Turkstat, Betam.

### **Strong exit from crisis – Reduction in labor productivity (2009(1)-2011(3))**

The crisis period is not very meaningful for our analysis. As predicted, GDP declined more than employment. As a result, labor productivity declined sharply and employment ratio fell, but less than labor productivity. Turkish economy recovered quickly and experienced high growth rates from the second quarter of 2009 until the second quarter of 2011. However, dynamics of this growth period is different than the pre-crisis period.

In this period labor productivity gains contributed positively to per capita income growth, but the contribution remained weak compared to the pre-crisis period. Between 2009(1) and 2011(2), labor productivity index rose from 103 to 106 (Figure 1). Employment ratio increased at a similar pace, from 100 to 103. Growth was balanced in terms of its sources. In other words, contributions of the increase in employment ratio and productivity gains were nearly equal. However, the current account deficit

increased sharply, due to increases in domestic demand. Moreover, strong capital inflows and high inflation caused Turkish Lira to appreciate significantly.

### **Transition to balanced growth – Decreasing labor productivity (2011(4) - 2013(2))**

Starting from the second quarter of 2011, economic policy makers who recognized that the domestic demand led growth was unsustainable aimed a more balanced growth (in terms of demand composition and current account deficit) by cooling domestic demand and reducing real exchange rate through a controlled depreciation of Turkish Lira. As it is known, domestic demand suppressed more than expected in 2012. In return, there has been an increase in exports and decline in imports. In this period GDP growth has been completely relied on net exports and it fell below the expectations (4 percent), reaching painfully 2 percent. On the other hand, domestic demand has been rebounded limitedly in 2013. As a result, growth rate reached 4 percent and but the contribution of net exports became negative.

The most striking development considering our topic in this low growth period is the negative contribution of labor productivity to per capita income which has increased only by 2 percent during the whole period. In total. In this period, labor productivity index decreased from 107.4 to 105.8 (Additional Table 1). Per capita income growth has been mainly driven by the increase in employment rate (Figure 2).

### **Mediocre growth - Fluctuation in labor productivity (2013(3)-2016(2))**

Following to decreasing labor productivity and high contribution of employment rate, the average labor productivity showed limited but positive contribution to per capita income during the second half of 2013. However in 2014, labor productivity contributed negatively to GDP per capita. Later on (2015 1st quarter), it has mildly rebounded and continued to record positive but limited contribution until the second quarter of 2016. Despite of the fluctuations happened in last three years, the index of labor productivity increased finally by 1 percentage points, from 106.2 to 107.2 (Figure 2 and Additional Table 1). On the other hand, employment rate has been the main source of the increase in per capita income during this period. Within these 3 years, GDP per capita index increased from 120.5 to 130.3 whilst employment rate rose from 108.8 to 114.3 (Figure 2 and Additional Table 1).

Even though our aggregate analysis reveals sizable fluctuations in the economic growth - productivity relation and its main components, it hides the developments happened in the main sectors. Indeed, we consider the basic four sectors (agriculture, manufacturing, construction and services) using the same decomposition methodology we observe striking divergences. We are planning to study these sectoral divergences in a future research brief.

## Dilemma in Economic Growth: Employment vs. Productivity

In the last two years, Turkish economy did not just grow slowly, but followed a relatively poor-quality growth path (weak labor productivity vs. strong increase in employment). As a result, per capita income growth decelerated significantly (Figure 1). The increase in the employment ratio which implies an increase in the average number of workers (the increase in women employment plays a key role) in households is certainly a positive development. Therefore, unemployment didn't increase in spite of low growth.

In addition to that, for reaching higher per capita growth rates and closing the gap with developed economies, productivity gains should start to make positive contributions to growth again as it was the case in the pre-crisis period. We want to stress once again that labor productivity stems from structural reforms in the education system, the labor market, taxation system, the energy market and in general strong structural reforms that will allow the economy to function more efficiently. Otherwise, Turkey can get stuck still in the middle income group for many years ahead.

### Box 1. The decomposition per capita income into its components

#### According to number of people employed

$$\frac{GDP_t}{P_t} = \frac{GDP_t}{E_t} \cdot \frac{E_t}{WP_t} \cdot \frac{WP_t}{P_t}$$

$$\frac{GDP_t}{P_t} = \mathbf{gdp}_t : \text{GDP per capita}$$

$$\frac{GDP_t}{E_t} = \mathbf{alp}_t : \text{Average labor productivity according to employed population/employment (E}_t\text{)}$$

$$\frac{E_t}{WP_t} = \mathbf{er}_t : \text{The ratio of employed population to working age population (WP}_t\text{)}$$

$$\frac{WP_t}{P_t} = \mathbf{wapr}_t : \text{The ratio of working age population to entire population}$$

$$\frac{\mathbf{gdp}_t}{\mathbf{gdp}_{t-1}} = \frac{\mathbf{alp}_t}{\mathbf{alp}_{t-1}} * \frac{\mathbf{er}_t}{\mathbf{er}_{t-1}} * \frac{\mathbf{wapr}_t}{\mathbf{wapr}_{t-1}} : \text{In order to observe the contribution of each factor, we decompose the quarterly changes in GDP per capita into quarterly change in average labor productivity, quarterly change in employment rate and quarterly change in the working age population ratio}$$

**Additional Table 1. Per capita GDP index and its components (2005(4) = 100)**

	Average Labor Productivity	Employment Rate	Working Age Population Ratio	GDP per capita
2005(4)	100.0	100.0	100.0	100.0
2006(1)	101.4	99.5	100.2	101.0
2006(2)	103.4	99.3	100.3	103.0
2006(3)	104.5	99.4	100.5	104.4
2006(4)	105.1	99.8	100.6	105.6
2007(1)	105.9	100.1	100.8	106.8
2007(2)	106.2	100.2	101.0	107.4
2007(3)	107.0	99.9	101.1	108.1
2007(4)	108.6	99.3	101.2	109.2
2008(1)	109.8	99.1	101.4	110.3
2008(2)	109.9	99.3	101.5	110.7
2008(3)	109.6	99.5	101.6	110.8
2008(4)	107.2	99.6	101.7	108.6
2009(1)	103.8	99.1	101.7	104.6
2009(2)	102.3	98.2	101.8	102.3
2009(3)	101.5	97.8	102.0	101.3
2009(4)	101.9	98.1	102.2	102.2
2010(1)	103.0	99.2	102.4	104.6
2010(2)	103.6	100.4	102.6	106.7
2010(3)	103.8	101.2	102.8	108.0
2010(4)	105.0	101.9	103.1	110.2
2011(1)	106.2	103.0	103.3	113.1
2011(2)	107.0	104.0	103.5	115.1
2011(3)	107.5	105.3	103.6	117.2
2011(4)	107.4	106.1	103.7	118.2
2012(1)	107.5	106.2	103.7	118.3
2012(2)	107.3	106.7	103.7	118.7
2012(3)	107.1	106.8	103.8	118.7
2012(4)	106.5	107.4	103.8	118.7
2013(1)	106.1	108.2	104.0	119.4
2013(2)	105.8	108.5	104.1	119.6
2013(3)	106.2	108.8	104.3	120.5
2013(4)	107.1	108.5	104.5	121.4
2014(1)	106.5	109.4	104.7	121.9
2014(2)	106.3	110.3	104.9	122.9
2014(3)	105.7	111.1	105.0	123.3
2014(4)	105.1	112.2	105.2	124.1
2015(1)	105.7	112.2	105.4	125.0
2015(2)	106.1	112.5	105.5	125.9
2015(3)	106.5	113.0	105.7	127.1
2015(4)	106.9	113.4	105.8	128.2
2016(1)	107.1	113.9	106.0	129.3
2016(2)	107.2	114.3	106.1	130.0

Source: Turkstat, Betam.