

PERSONAL AND FUNCTIONAL DISTRIBUTIONS OF INCOME IN TURKEY

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INTRODUCTION

Since the last economic crisis, the questions around income distribution and inequality have been discussed more loudly and more often than ever. The aim of this note is to present the evolutions of measures of personal and functional distributions of income in Turkey within the period 2002-2016 and highlight the differences between these two approaches to measurement of income inequality. The first part of this note defines personal and functional distributions of income and makes a comparison between the two. The second and final part portrays the trends of the indicators measuring those distributions in Turkey from alternative sources and concludes.

PERSONAL VERSUS FUNCTIONAL INCOME DISTRIBUTION

Since the last economic crisis of 2008, the research focusing on personal income and wealth distributions, such as the *Capital* of Piketty (2014), found significant place in mass media. The increasing income inequality has become an important issue to be discussed using different indicators, which can be categorized as personal and functional income distribution measures.

Personal income distribution can be considered as the frequency, or more precisely, as the size distribution of income of households or individuals, regardless of their types of sources. The distribution of national income between labor and capital in a country can be referred to as *functional income distribution*.

The unit of analysis of personal income distribution is *households* or *individuals*, while that of functional income distribution is *classes*, which can be defined with respect to individuals' role in the production process and can be divided into two. Those who sell their labor force are called *labor* or *working class*, and they earn labor income, which includes wages or salaries. A more general term, *compensation of employees*, which covers social insurance and pension fund payments along with those, is used as a measure of total labor income. Those who receive surplus or capital income, which takes several forms such as profits, dividends, rents, and interests, are called *capitalists*. A

more common and mainstream definition that rather views income distribution among classes as a technical problem is “the distribution of the national income between the factors of production, usually land, labor, and capital” (Rutherford, 2002).

Personal income distribution data can be transformed into several forms in order to show income inequality among individuals or households. Among the most known measures of personal income distribution are the *Gini Index* and *income percentile ratios*. The former is an index that takes values between 0, which corresponds to perfect income equality among members of a society, and 1, which corresponds to perfect income inequality. Income percentile ratios are calculated by proportioning income share of a certain fraction of the richest population to that of a certain fraction of the poorest population. For example, the inter-quintile ratio $S80/S20$ is the ratio of the income of the richest 20% of the population to that of the poorest 20%. The percentage of total income owned by a certain percentage of a population is another way to point at personal income inequalities.

The measure of functional income distribution can either be the share of labor or that of capital within national income. The terms *labor (capital) share*, *labor (capital) income share*, *wage (profit) share*ⁱ are used interchangeably for the share of labor (capital) income in national income. The denominator for calculating the shares can either be GDP at market prices or GDP at factor cost, which excludes taxes and subsidies. While these definitions make clear separations between labor and capital income, the existence of unincorporated businesses and self-employed workers require some adjustments for the calculation of labor (capital) share of income. Measurement of labor income share, particularly in developing countries, poses some problems related to the structure of the economy and treatment of mixed income of self-employed workers. National accounts usually ignore mixed income or completely attribute it to profits. This leads to the underestimation of the labor income share in developing countries. In early-developed capitalist economies, this does not cause serious problems since the share of the self-employed do not constitute an important fraction of the total labor force.ⁱⁱ

The invariability of relative shares of labor and capital in total income was taken for granted; however, the long-run decline in labor income share invalidated this assumption. This decline is well documented by several sources and the reasons behind are analyzed.ⁱⁱⁱ Along with this discussion, recently, several studies have concentrated on the linkage between personal and functional distributions. Studies show that a decline in labor income share leads to more unequal personal income distribution.^{iv}

PERSONAL AND FUNCTIONAL INCOME DISTRIBUTION IN TURKEY

In this part we present the evolution of the Gini Index, income share of top and lowest percentiles, income percentile ratios, and the labor income share in Turkey between the 2002-2016 period using data from different sources and comment on the figures.

Figure 1 shows the evolution of the Gini Index in Turkey from different sources. *OECD 1* and *OECD 3* series are calculated by using the income definition of OECD until 2011, and *OECD 2* and *OECD 4* series are calculated by using the income definition since 2012. *OECD 1*, *OECD 2* and *SWIID 1* series are based on disposable income after taxes and transfers, while *OECD 3*, *OECD 4* and *SWIID 2* are based on market income before taxes and transfers. Hence, the estimates of the latter series systematically indicate higher inequality. *TÜİK* series are also based on disposable income while the *WB* data are estimated from unit-record consumption. The series, in general, have a decreasing trend until 2013-2014, while the decline is secular for the *SWIID 1* and *SWIID 2* series. All series available for 2016 point that the Gini Index is within the interval 0.39-0.42, while this interval is 0.41-0.45 for 2002. The series point at a general decline in personal income inequality within the period of 2002-2016, however the Gini Index is not sufficient to draw a final conclusion.

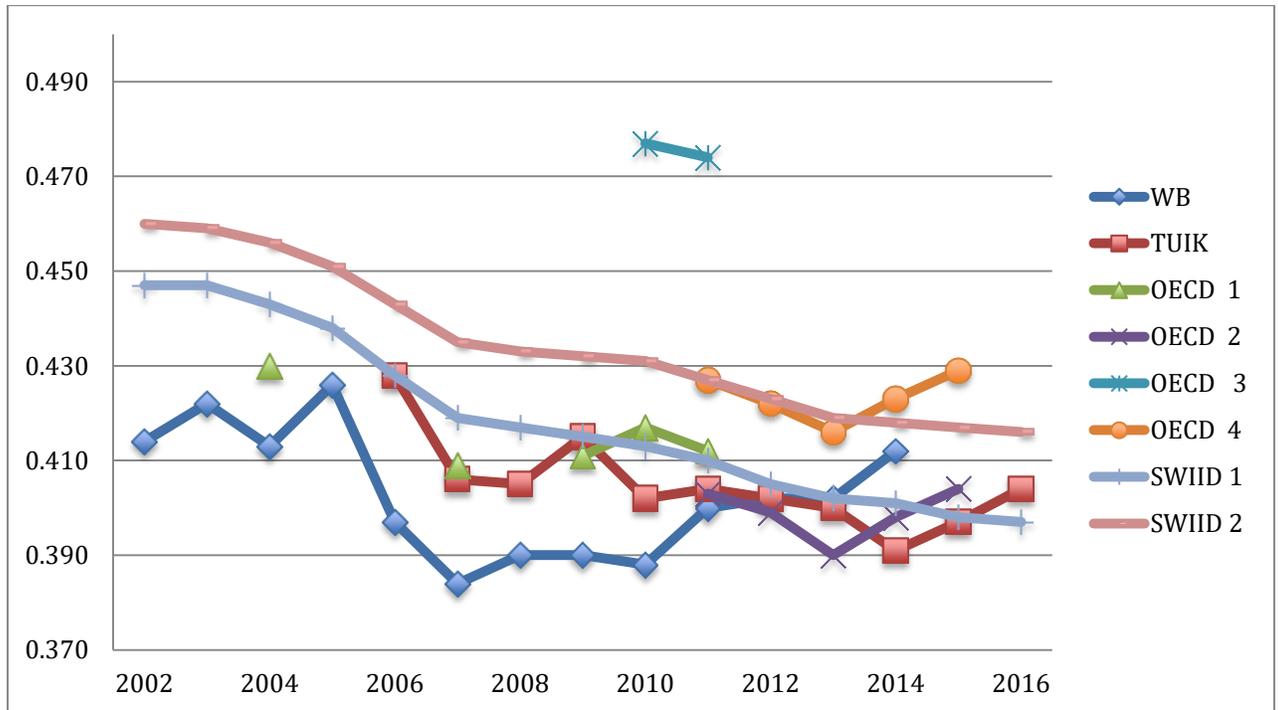


Figure 1: Gini Index in Turkey (2002-2016).

Sources: WB, OECD, SWIID and TÜİK.

Figure 2 shows the top and lowest 10% and 20% income percentile shares in Turkey between 2002 and 2014. The income data retrieved from the WB is based on unit-record consumption and shows that the income of the richest 10% and 20% of the population holds around 32% and 48% of total income in 2014, respectively. The income of the lowest 10% and 20% of the population are 2% and 6% for the same year, respectively. The data shows that the income shares of the richest 10% and 20% decreased until 2007 and became stagnant until 2010 and have been increasing since then, while the income shares of the lowest 10% and 20% have not changed considerably during the same period.

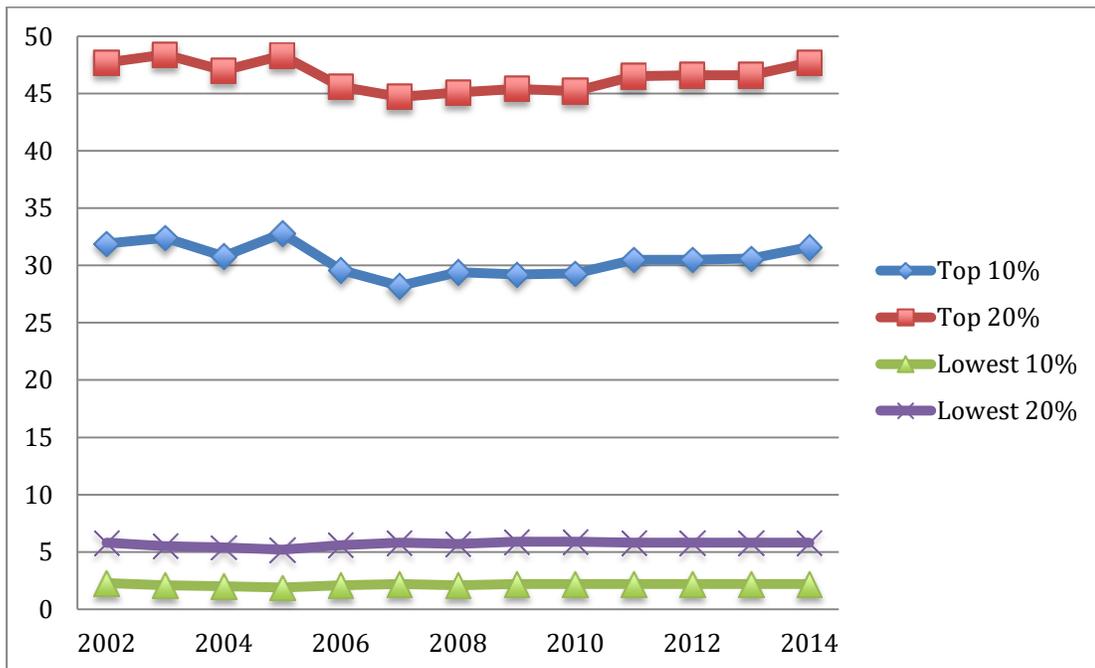


Figure 2: Top and lowest income percentile shares (2002-2014) in percentage.

Source: WB.

Figure 3 shows the trends in inter-decile (S90/S10) and inter-quintile (S80/S20) income ratios in Turkey between 2002 and 2016. The data is based on the household disposable income from TÜİK and the calculations are based on the top and lowest 10% and 20% income share data from the WB. TÜİK series show that the ratio of the (mean) income of the richest %20 to that of the poorest %20 has decreased to 7.7 from 9.6 between 2006 and 2016, however, the series also show that the ratio has been increasing since 2014. WB series also point at increasing inter-decile and inter-quintile ratios since 2010 but the data for 2014 and 2016 are not available in this source. While the inequality seems to decline since 2005, the three series from two different sources point at increasing inequality during the last years.

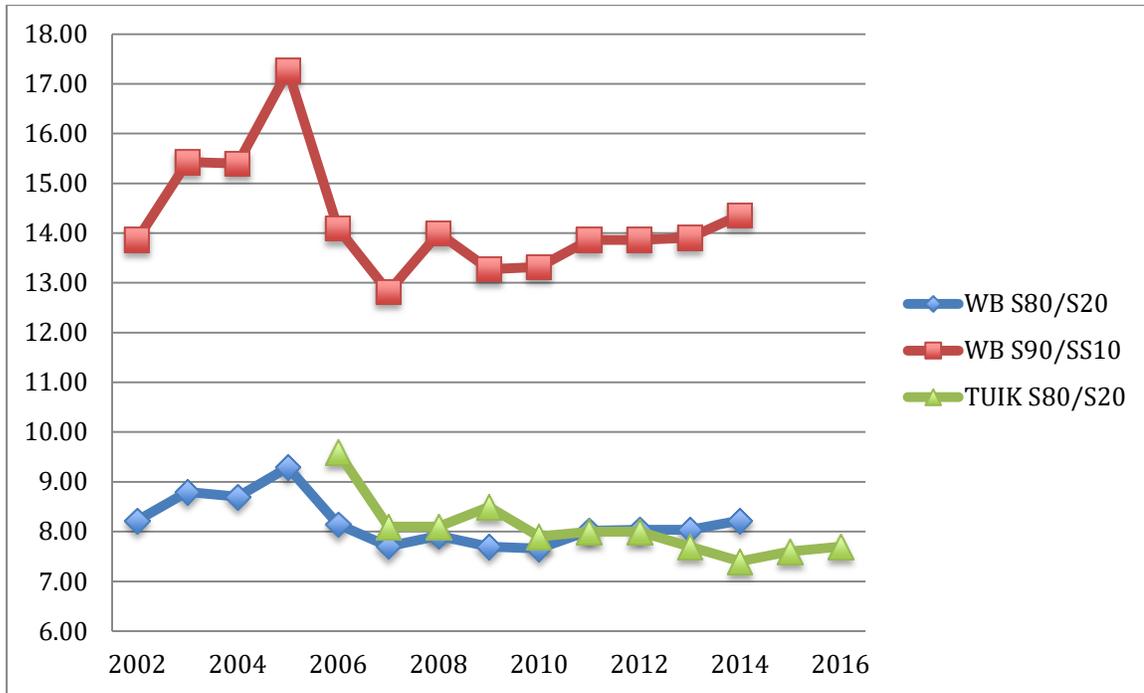


Figure 3: Income percentile ratios.

Source: TÜİK and calculations based on WB data.

Figure 4 shows the evolution of the labor income share (taking values between 0 and 1) in Turkey from different sources. *AMECO 1* series are calculated as the ratio of compensation per employee to the GDP at market prices per person employed, while *AMECO 2* series are calculated as the ratio of compensation per employee to GDP at factor cost per person employed. The series provided by the UN are identical to *AMECO 1* series except that the shares at the tails differ. The data shows that the labor income share decreased between 2002 and 2008 and has been increasing since then. As of 2016, according to *AMECO 1* and *AMECO 2* series, the share of labor within the total income is 50% and 57%, respectively.

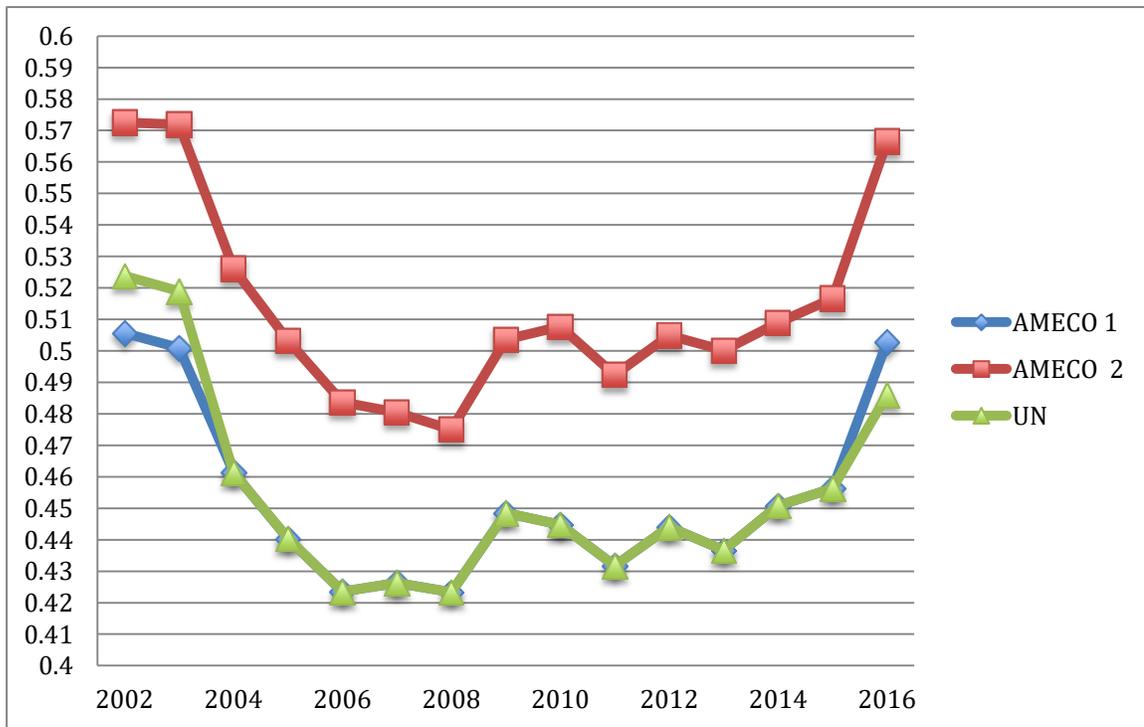


Figure 4: Labor income share in Turkey (2002-2016).

Sources: AMECO and UN.

Onaran and Oyvat (2016) state that the income has been redistributed towards the poorer since 2002, however, rather than taxing the rich, this has been achieved by the losses of the organized blue-collar and white-collar/professional working people. They notice that, within the period of 2006-2013, there were increases in the share of both bottom 40% and the top 20% of the households, while the share of the 40% between the two decreased in the same period. The data from different sources presented above support these findings, however, since 2013 the trends, at least with respect to some sources, seem to have changed. Since 2013, the labor income share has been increasing along with a worsening personal income distribution with respect to different measures and sources.

An important point to be considered in relation to income distribution is wealth distributions, which is not covered in this note. A more in-depth analysis is required in order to understand the dynamics of income distribution in Turkey by taking into account the relation between personal and functional income distributions and wealth distribution. Alternative adjustments to labor share are also necessary for a better understanding of the evolution of the functional income distribution in Turkey.

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Data Appendix

All data are retrieved in March 2018.

OECD: Organization for Economic Cooperation and Development
data.oecd.org

SWIID: Standardized World Income Inequality Database
<https://fsolt.org/swiid/>

TÜİK: Statistical Institute of Turkey
<http://www.tuik.gov.tr/>

UN: United Nations
<http://data.un.org/>

WB: World Bank
<http://databank.worldbank.org/>

ⁱ *Wage share*, usually stands for the share of compensation of employees in GDP. This term, alone, poses some problems for the developing countries since it does not include the wage income of the self-employed.

ⁱⁱ For a discussion of alternative adjustments to labor income share, see Gollin (2002) and Guerriero (2012).

ⁱⁱⁱ For a documentation of the fall in labor income share and an analysis of the reasons, see Stockhammer (2013).

^{iv} For a review of the literature linking personal and functional distributions of income, see Dafermos and Papatheodorou (2015).