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Income Distribution Is Not Neutral In Terms of Inflation or Inflation Is A Function of the Distribution Of Income: The Case of Turkey Between 2009-2017

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Abstract

Economics resemble physics. Like in physics, there are constants and positive negative forces in economics. In the short term, the most important factor in economics is the yield of the fixed capital, the maximum profit rate. The opposing forces are workers and capitalists. While the maximum profit rate is data, workers and capitalists fight to income distribution. External or political interventions can increase share of workers (the government) that they get from maximum profit. But since the capitalists can price according to their profit targets, the Income are distributed according to the profit targets of capitalists. Inflation and income distribution are determined by capitalists. Articles, price dynamics (inflation) in Turkey during the period 2009-2017 are analyzed according to income distribution.

Key Words: *Income Distribution, Wages and Maximum Profit Rate, Inflation, Price Dynamics*

JEL Codes: *E11, E25, E31*

Gelir Dağılımı Enflasyon Açısından Nötr Değildir ya da Enflasyon Gelir Dağılımının Bir Fonksiyonudur: Türkiye Örneği 2009-2017

Özet

Ekonomi fiziğe benzer. Fizikte olduğu gibi ekonomide de sabit ve pozitif negatif, baskın kuvvetler var. Kısa vadede, ekonomideki en önemli sabit sermaye hasıla oranı veya azami kâr oranıdır. Ekonomideki en temel zıt güçler işçi ve kapitalistlerdir. Maksimum kar oranı veri iken, işçiler ve kapitalistler gelir dağılımını kendi yönlerine değiştirmek için mücadele ederler. Buradaki bakış açısı fizik gibi gözükse de Sraffacı bir modelden başka bir şey değildir. Dış veya politik müdahaleler, işçilerin (devletin) azami kardan elde ettikleri payları artırabilir. Fakat kapitalistler kar hedeflerine göre fiyatı belirleyebildiklerinden (baskın güç), gelir (fiyatlar) kapitalistlerin kar hedeflerine göre dağıtılır (belirlenir). Kısacası enflasyon ve gelir dağılımı kapitalistler tarafından belirlenir. 2009-2017 döneminde Türkiye'de makaleler, fiyat dinamikleri (enflasyon) gelir dağılımına göre analiz edilir.

Anahtar Kelimeler: *Income Distribution, Wages and Maximum Profit Rate, Inflation, Price Dynamics*

JEL Kodları: *E11, E25, E31*

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1. Introduction

Economy is a mostly political issue. In same respect, it is similar to physics. Political preferences in the short term cannot exceed basic economic constraints and structures. The article tackles with the issue of inflation in Turkey through the examination of the relations governing capitalist production and distribution as physical constraints.

The changes in prices act similar to the particles in the physics of energy. Different energy levels create different particles and substances. In this regard, it can be said that different levels of price and inflation are the different energy levels of capitalists and workers that struggle to get greater portion out of distribution. The capitalists or firms are the main decision makers in the markets. Price and price increases are very important for capitalists/firms. Resource creation for investments or accumulation depend on price and rising prices. From this point of view, prices are not just a resource distribution vehicle but also the prices are the energy particles that carry the profits for capitalists. The prices should create cash flows in the economy so that it can verify (confirm) the firm or the capitalist. According to Sraffa (1960), prices are determined simultaneously with the distribution of income. Thus, the general level of prices cannot be determined without knowing the wages and profits. More precisely, the general level of prices cannot be determined without knowing the profit level. Capitalists or firms have the power to make prices to confirm their own accumulation and investment expectations.

From a micro-economic perspective, income or profits obtained by firms or capitalists can be seen as a result of competition among themselves. From a macroeconomic point of view, the investment level determines the total cash flow in the economy, profitability and distribution. Firm/capitalist profits are determined under macro conditions. The size of the investment determined by the capitalists'/firms' profit expectations has the power to influence the total demand, production and prices in a chained manner. Even the investment level relative prices can change (Minsky, 2008).

It is necessary to look at the accumulation and distribution processes in order to understand the inflation process in Turkey. Different profit targets of the capitalist or firm in the economy will determine different price levels. The income distribution process is not only between the capitalist (domestic / foreign) and the workers, but also the politics involve in the process. Different interests and targets will create different prices (exchange rates) or inflation. The exchange rate and inflation level should be regarded as the prices determined according to income distribution or profit targets. In this study, we will analyze the dynamics of prices in Turkey in terms of income distribution during 2009-2017. Our basic hypothesis is that inflation is a function of income distribution/distribution: Inflation and income distribution depend on profit targets.

2. A Sraffa's Price Model

Sraffa is an economist who looks at the fundamental problems of the economic theory such as distribution, capital and price from a classical point of view. In the Sraffa's analysis, an economy where goods are produced by goods and labor, describes prices in terms of technology and distribution relations. When production technology is given, distribution plays an important role in determining the prices. An economic system with the same technology gives different prices when the distribution changes the relationship. It is not possible to know how much added value an economy has created, how much net national income it produces, what the profit and wage levels are, so what the prices are, without knowing the profits and wages. Although Sraffa (1960) identifies the wage and profit rate simultaneously in a capitalist production system, the relationship between distributional and prices is a joint. With the standard system developed by Sraffa (1960), it was able to define prices independently. However, in the Sraffa's standard system, the profit rate is the only independent variable from prices. Based on Sraffa (1960), when the profit rate is given, it can be demonstrable that wages and prices are determined. We denote the national income (Q), the net national income (Y), the workers' total wage income (W), the capital (K), the actual profitability ratio (r), and the economy's maximum profitability ratio (R), general level of prices (P), exchange rate ex. For an economy with n sectors, the distribution of national income between workers and capitalists can be written as below:

$$\begin{aligned} K_1(1+r) + wL_1 &= Q_1 \\ \cdots\cdots\cdots\cdots\cdots\cdots & \\ K_n(1+r) + wL_n &= Q_n \end{aligned} \qquad (1)$$

In terms of macroeconomic analysis, we have rewritten the first (1) equation which is the net national income equals the aggregation of the variables in the equation. We assume that wages and profits are the same in all sectors. In particular, we assume that the actual rate of profit in all sectors is equal to the expected rate of profit ($\boldsymbol{r} = \boldsymbol{r}^e$). If this assumption is not present, we cannot put the sectors together as a macro.

$$rK + W = (Q\text{-}K = Y) \quad (2)$$

Equation 2 is gathered by dividing both sides by Y, so we get equation 3 of macro distribution.

$$\frac{rK}{Y} + \frac{W}{Y} = 1$$

$R = \frac{Y}{K}$ and $\frac{W}{Y} = w$, w is the worker's share of the income 0<w<1

$$\frac{r}{R} + w = 1 \quad (3)$$

The maximum profit rate (R) in the equation (3) is a constraint determined by the technology. It shows the efficiency of the capital. In order to facilitate the calculations, it is assumed that the average and marginal yields of the capital are equal to each other:

$$\frac{Y}{K} = \frac{\Delta Y}{\Delta K}$$

We will assume that our basic hypothesis is that if the actual profits of the capitalists are equal to the expected/target profits ($\boldsymbol{r^e}$), the general level of prices , wages and exchange rates in equation (3) will be balanced or unchanged.

$$r = r^e \quad \rightarrow P = \bar{P}, w = \overline{w}\ and\ ex = \overline{ex} \quad (4)$$

If it is $r \neq r^e$, the general level of prices and exchange rates will change the income share of workers. Thus, price changes will provide the (3) equation. R is given, the following equation shows how the share of wages (and hence the exchange rates and prices) will change according to the profit rate the capitalists target. Derivative $\frac{dw}{dr^e} < 0$ workers show distributional relations (inverse) between capitalists. According to Sraffa (1960), the capitalists have the power to reach the targeted profits. In Sraffa (1960), the profit rate is external. If r < $\boldsymbol{r^e}$, then w will decrease. For this, exchange rates and prices will increase: $\Delta ex > \Delta P > \Delta W$. This increase is called as inflation. Inflation is a problem of distribution.

Inflation and Distribution in Turkey Between 2009-2017

In the light of the theoretical framework developed above, in the Table 1, the maximum profit rate is given in the last row. The maximum profit rate is calculated by using the following formula: $R = \frac{Y}{K} = \frac{\Delta Y}{\Delta K} = \frac{\Delta Y}{I} = \frac{\Delta Y/Y}{I/Y}$ (Araujo, 2015). In 2010 maximum profit rate in Turkey is $\boldsymbol{R_{2010}}$ **= 0,31**. Then it decreased until 2016 to $\boldsymbol{R_{2016}}$ **= 0,11**. In 2017, it increased to 0.26. Briefly, the maximum profit is in decline in Turkey between 2010-2017 and is unstable throughout the time. The unstable structure of the maximum profit

rate shows the problems of the accumulation process of the Turkish economy which is mainly dependent upon the low capital productivity. Turkish capital accumulation and the interests of the business world are generally shaped by politics. The common feature of different political processes in Turkey were able neither to increase the capital efficiency nor to create a corporate structure that would lead to a sustainable long-term growth. Political economic preferences changing by different governments and shaping highly by political priorities can be seen as the main reason for low productivity (Buğra and Savaşkan, 2014; Acemoğlu and Ucer, 2015). As the maximum profit rate / total efficiency decreases, the actual profit rate also decreases. By taking advantage of the equation (3), the actual profit rates are calculated on the 9th line of Table 1.2. In order to calculate the actual profit rates, two data are required, the first is the maximum profit rate (calculated), and the second is the income share of the workers. However, it is really difficult to reach reliable and accurate wage data in Turkey.

The data for the average wage income of the working group is best reflected in the Household Earnings Survey which is collected every 4 years. Therefore, for the 2009-2017 period that we have examined, there are two relevant data for the average wage. In order to calculate the average wage incomes excepting 2010 and 2014, the following path was taken into account. 2010 and 2014 household average earnings data and 2010, 2014 minimum wages are divided into each other. Thus, the average wage/minimum wage ratio for the other years is calculated. The average rate is 2 for Turkey. The average wage gain for these years is calculated by multiplying the minimum wage rate of the other years by the average rate of 2. Given the calculated average annual wage and employment level, the share of wages in the national income was found. This calculation (W/Y) is shown on the eighth line of Table 1.2. Looking at the line, we see that the weight of employees' income rose by 41% in 2016 from an average of 33%. While the maximum profit rate is decreasing, the increase in the share of the wage income is realized with a political arrangement rather than the dynamics of the Turkish economy's own productivity. The minimum wage, which is 1000 TL (Turkish Lira) in 2013, reached 1600 TL after the June / November elections of 2015, and the share in national income of the workers reached 41%. Looking at the actual profitability of capitalists and firms, the actual profitability ratio fell to $\boldsymbol{r_{2016} = 0{,}06}$ while it was around 16% on average between 2010 and 2015. If firms' (capitalists') expected profit ratio is equal to the average rate this ratio can be 15% or 16% in Turkey[14]. If $\boldsymbol{r^e = \%15}$ and R is taken constant, according to the equation (5), the share of workers' income should decrease in order to increase the actual profit ratio from 6% to 15%. For this, prices and exchange rates need to increase. Looking at the deflator figures in Table 1.2, inflation in single digits till 2015 rose to 12.4% in 2016 and to 18.60% in 2017. In 2017 the average wage in Turkey has increased by 7.8%.

14 See Company Accounts, Central Bank of The Republic of Turkey.

Table 1.1: Inflation and Distribution in Turkey.

	Fixed Investment (x1000 TL (Turkish Lira)	Stock (x1000 TL)	Total Investment (x1000 TL)	Gross domestic product GSYH (x(1000 TL)	I/Y	ΔY/Y	**R: Maximum Profit Rate**
2009	223.566.234	6.432.113	229.998.348	999.191.848	0,230184371		
2010	288.473.760	24.414.075	312.887.835	1.160.013.978	0,269727642	0,085	**0,315132699**
2011	391.383.400	44.651.396	436.034.796	1.394.477.166	0,312686939	0,11	**0,351789558**
2012	428.831.788	15.450.556	444.282.344	1.569.672.115	0,283041496	0,048	**0,169586441**
2013	516.209.715	22.599.973	538.809.688	1.809.713.087	0,297732106	0,085	**0,285491549**
2014	590.742.457	2.835.013	593.577.469	2.044.465.876	0,290333762	0,052	**0,179104213**
2015	694.786.860	-31.499.083	663.287.777	2.338.647.494	0,283620246	0,061	**0,215076324**
2016	764.661.719	-28.362.562	736.299.157	2.608.525.749	0,282266394	0,032	**0,113368083**
2017	820482024,7	32687129	853.169.154	3 104 906 706	0,27478093	0,073	**0,26566618**

Table 1.2: Inflation and Distribution in Turkey (Continued)

	Annual Average Wage Earnings (TL)	Monthly Average Wage Earnings (TL)	Monthly minimum wage (TL)	Monthly Average Wage Earnings / Monthly minimum wage	Estimated Average Monthly Wage Earnings (TL)	Employment Level (x1000 person)	Total Annual Wage Earnings(W) (x1000 TL)	W/Y=w	**Actual Profit Rate = (1-w) R max.**	Deflator (2009=100)	**Inflation by Deflator**	CPI (2003=100)
2009			679		1.358	20.615	335.942.040	**0,336**		100		6,53
2010	19646	1641	744	2,2	1.488	21858	**390.296.448**	**0,336**	**0,209103655**	**107,0126579**	**7,01**	6,40
2011			816		1.632	23266	**455.641.344**	**0,327**	**0,236843347**	**115,7754626**	**8,76**	**10,45**
2012			893		1.786	23937	**513.017.784**	**0,327**	**0,114160305**	**124,3639387**	**8.59**	6,16
2013			999		1.998	24601,0	**589.833.576**	**0,326**	**0,192442268**	**132,2**	**7,80**	**7,40**
2014	27830	2136	1102	1,9	2.204	25933,0	**685.875.984**	**0,335**	**0,119018457**	**142,0**	**9,81**	**8,17**
2015			1231		2.462	26621	**786.490.824**	**0,336**	**0,142745819**	**153,0803763**	**11,11**	**8,81**
2016			1647		3.294	27205	**1.075.359.240**	**0,412**	**0,06663233**	**165,4772266**	**12,40**	**8,53**
2017			1777		3.554	28 189	**1.202.204.472**	**0,387**	**0,162801553**	**184**	**18,60**	11,92

Table 1/3: Inflation and Distribution in Turkey (Continued)

	Net international investment position (million dollars)	Primary investment revenue (million dollars)	Primary investment expenditure (million dollars)	**Net profit outflow (million dollars)**	**Change in exchange rate**
2009	-275.908	5.833	-13.490	**-7.657**	**19,66**
2010	-361.258	5.197	-11.712	**-6.515**	**-3,02**
2011	-316.199	4.625	-11.874	**-7.249**	**11,31**
2012	-426.115	5.762	-12.350	**-6.588**	**7,33**
2013	-397.609	5.289	-13.909	**-8.620**	**5,79**
2014	-446.360	4.874	-13.113	**-8.239**	**15,03**
2015	-386.951	4.471	-14.122	**-9.651**	**24,32**
2016	-366.906	5.311	-14.492	**-9.181**	**11,07**
2017	-455.415	4.937	-16.015	**-11.078**	**20,73**

Resource: Central Bank of The Republic of Turkey and TURKSTAT.

The rate of domestic savings in the Turkish economy is insufficient (Süslü, Yılmaz 2015). Therefore, the Turkish economy is an economy that uses significant foreign savings. Foreign savings is an investment in foreigners. The net international investment position in Turkey has reached 450 billion dollars in 2017. Profit transfers of foreign investors in Turkey have changed because of the actual rate of profit decline and instability, besides from changes in the investment environment in global markets. The average net profit transfer by 2015 was $7.7 billion, while it is $11 billion in 2017. In addition to this, the growing external deficit accelerated TL depreciation. In 2017 the depreciation of TL is above 20%. In the first six months of 2018, the loss of TL is 21.6%. Depreciation of TL raises prices or inflation in Turkey. As long as the TL depreciates, (domestic/foreign) companies can only invest in the increase of the actual profitability. For this, the rate of national income of wages should be reduced. In order for the wages to decrease the national income rate and to continue the increasing profit transfers, the prices must increase according to the wages and the exchange rates have to increase more according to the prices and wages: $\Delta W < \Delta P < \Delta e$.

In 2017, wages increased by 10% and prices increased by 18%, while the TL depreciated by 20%. While the minimum wage increased by 14% in 2018, the depreciation of TL by 21.6% in the first six months is not a coincidence. Inflation is the redistribution of income according to the profit target of the capitalists (firms).

3. Conclusion

In the capitalist system every investment and accumulation process require an income distribution (a price structure) that would guarantee its own reproduction cycle. It is not possible to maintain a distribution process that is incompatible with capitals or companies' profit targets. When capital efficiency unchanged in Turkey, wages can get a better income share in short-term with the political support. But in the long run, from rising prices and exchange rates, economic positions of workers and politicians is impossible to continue. Even governments cannot sustain their economic policies without increasing total capital efficiency in the long run. Given the accumulation process and the structural characteristics of the Turkish economy, populist policies bring about high rates of inflation, which reduces the share of wages. In Turkey, money, fiscal and exchange rate policies are inapplicable, unless they are compatible with the target levels of profitability of the capitalists (companies). In particular, if economic policies are conflict with accumulation process/profit targets, and if these policies not balanced by inflation, then the Turkey's economy is in crisis.

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