

The Wage Determination Process in Turkey: An Empirical Analysis in Kaleckian Perspective

Başak Gül AKTAKAS^{*}, Cemil Serhat AKIN^{**}

Abstract

Orthodox economists generally think about labor market that the price stability and low unemployment cannot be achieved at the same time. In this sense, the Orthodox argument discusses that a decline in the aggregate demand will decrease the money wages and real wages proportionally, and increase the volume of employment. Michal Kalecki denies such a wage policy which is consistently determined by this idea. Wages reflect the price-money wage relation in real terms. Prices set in regard to the degree of monopoly. In this context, it is assumed real wages is determined depending upon the degree of monopoly, labor productivity and price of import goods. According to Kalecki, Orthodoxian view which relates a decrease in real wages with an increase in production based on increasing marginal cost assumption and Kalecki does not accept this perspective. Kaleckian Post-Keynesian labor market will be theoretically discussed and the determination process of the real wage will be empirically analyzed for Turkish economy over the period 1989:1 to 2012:4.

Keywords: Post-Keynesian Labor Market, Wage Determination, Michal Kalecki.

JEL Code Classification: E12, E24, J01, J23, J3

^{*} Assistant Professor, Cukurova University, Turkey. E-mail: bgaktakas@cu.edu.tr.

^{**} Assistant Professor, Mustafa Kemal University, Turkey. E-mail: csakin@mku.edu.tr.

1. Introduction

Michal Kalecki (1899-1970), who is considered that he is not at a place where he deserves, is one of the most important economists in the 20th century. The economist, who contributed greatly to macroeconomics in the 1930s, has undoubtedly a significant role in terms of the Post-Keynesian economics. The principle of effective demand constitutes the core of Kalecki analyses. In the Kalecki and Post-Keynesian analyses, effective demand indicates the deficiency of demand rather than the scarcity of the resources. Kalecki suggests that this situation has a tendency for identifying capitalist economies instead of socialist economies (King, 1996:1; Arestis, 1996:11-12).

There is a capitalist mode of production in the economy Kalecki takes into account. Social relations are of great importance for the production. Indeed, social classes are clearly examined within the context of this analysis. In this regard, a pro-Kalecki economy has an intention of revealing that the markets distribute the income according to their relative power. The basis of this situation is to be based on a condition in which the output produced by a certain class of the society is to be planned, managed and administered by another class within the same society. The class under management represents those who earn money whereas, the dominant class symbolizes the group having no physical contribution to the production as well as those getting more of the income or profit. In this power relation, the objectives of the capital are in conflict with those of the labor force. Such a situation makes the conflict in the class a center point of Kalecki's analyses (Arestis, 1996:12).

The distribution between wages and profits are to a large extent determined by the real wage demand of the labor as well as the companies' profit motive. Indeed, labors bargain regarding the wages. The acceptable level is determined through the expectations about future inflation; moreover, it is also determined by the inflation rate of the previous period as well as the target of the real wage. Labors are prevented in this process since obtained real wages can solely be evident following the capitalist pricing decisions. Therefore, unless the degree of monopoly or the power of the big businesses are lowered, the distribution will be effectively determined not with the wage bargaining but after the pricing decisions. (Lavoie, 1996-97:275; Levine, 1986:463).

2. Theoretical Explanations

A typical Keynesian entrepreneur is an oligopolistic firm which determines the price. According to Kalecki, price is determined by a profit margin (mark-up) which is added to the average cost. Hence, the size of the profit margin depends on the degree of monopoly. Following Kalecki, the share of profit margin is assumed to have been stable in a short term. In recent times, with the aim of providing adequate financing for their planned investments, it has even been presumed that firms have the power to change their profit margins. The reflection in the unit labor

cost may become an increase in a higher price set by the firm's profit is nonthreatening. Thus, financial constraint is not taken into account during the accumulating process. Accordingly, an attempt to increase the accumulation rate at the level of full employment led to rise in the profit margin, whereas it causes a decline in the real wage rate as an equalizer (Sen & Vaidya, 1995:31; Crotty, 1980:24).

At this point, it is considered that Keynes and Kalecki have a common assumption as to the real wage of labors which are determined by the firms' pricing decisions. While the pricing decisions of firms can be considered to determine the real wage in a short-term, the determination of the money wage also takes the expected price changes into account. Meanwhile, the proposition in which the level of employment is determined with the total demand can be made in the long term. However, considering a positive relationship between the requests of the workers along with the skills to succeed them and employment, it can be concluded that the real wage may be affected by such other variables as trading, profitability and bargaining power (Arestis & Sawyer, 1994:475). Nevertheless, during the process of wage determination, it is seen that relating to the average productivity, the trade unions could only affect the real wage only if they have an impact on the degree of monopoly. The degree of monopoly affects the level of profits. Therefore, higher profit margins occurring due to the high degree of monopoly lead powerful trade unions to demanding higher wages. In the case of the acceptance of the high wage demands, the degree of monopoly remains unchanged. As a result, prices in sectors with high profit margin increase depending on those with low profit margin. Such a situation will likely to have an impact on the demand for the goods in these sectors. Kalecki tries to reveal the fact that it can affect the unions' monopoly degree via this mechanism. In this context, the trade unions may increase the real wages and shares on condition that they change the degree of monopoly (Sawyer, 1985:108-114, Arestis, 1992:89; Levine, 1986:476).

Such a factor making it significant in this process is the consideration of these factors. Therefore, considering an industry in which the determination of wages will occur when it is dominated by oligopolistic structure in mind, and with all the handling of heterogeneous groups of workers will take place. The necessity for assessing the groups one by one is due to the fact that not all of the labors are unionized. A target level of real wages is formed in accordance with the aspirations and expectations of all the working groups which are embedded in the formation of trade unions (Arestis, 1992:108-165; Annable, 1980:406).

Companies adapt the prices to the new situation in terms of the changes in the costs or in the degree of monopoly prices. This means that the determination of the rate of price and thus distribution is completely determined by the firms. The determination of the profit margin refers to the determination of real wages at the same time. Under these circumstances, the real wage is determined by the product market rather than the labor market. This view which Kalecki was an advocate is

considered as one of the most important features of Post Keynesian economics (Reynolds, 1996:82, Sawyer, 1985:108).

Kalecki aims to put forward a meaningful and consistent theory which is based upon how the firms have determined the prices and thus how the labor share of output has been determined. The essence of this analysis is as follows:

The firms determine the profit margin over the main cost unit. Additionally, the main cost elements are the labors' wages as well as the cost of raw materials. The data means lower rate profit margin for the proportion of the cost of raw materials and price, lower rate of profit as well as higher labor share. In this case, the critical point is related to the determination of the profit margin. The short-term assumption of the profit maximization is not made; instead, it is indicated that the firms will add a profit margin and thus, this proportion will be affected by the institutional/environmental factors. These kinds of factors are dealt with exogenously for the firm. Therefore, there is an assumption of exogeneity for both the price and the theory of income distribution (Reynolds, 1983: 494-95).

Kalecki reveals the firm's price equality as follows (Arestis, 1996:13)

$$p = mh + n\eta \quad (1)$$

According to the equation (1); p = the price of the firm, h = average variable costs, η = the weighted average price of the other companies producing similar products in the industry, m and n are parameters indicating the degree of the firm's monopoly. These parameters are affected by such factors as the degree of industrial concentration, the effect of trade unions as well as the importance of fixed costs in relation to variable costs (as cited in Kalecki's study Arestis, 1996:13). It is possible to conclude that m or n may increase in such cases as concentration, tacit agreements, institutional factors such as advertising and the weakness of the trade unions (Reynolds, 1983:496).

According to a situation in which all of the firms fix the prices in the industry along with the assumption that they are in balance, it seems obligatory to take into consideration all of these institutional pressures on the firms. The average price / main cost per unit rate will be equal to (η/h) , $(\bar{m}/1 - \bar{n})$ ratio for the industry as a whole. The main costs of the firm's pricing and output parameters, obtained using the \bar{m} and \bar{n} are weighted averages of the firm's pricing parameters which is obtained by using the main costs as well as output.

In this case, the following equation is obtained:

$$p = mh(1-n) \quad (2)$$

$$k = m/1-n \quad ; \text{ to indicate the rate}$$

$$p = kh \quad (3)$$

as if the h is extended as average direct costs

$$h = [wL + p_m Q_m] / Q \quad (4)$$

w : Nominal wages

L : Labor input

p_m : Imported raw material prices

Q_m : The amount of imported raw materials

Q : Output

Combining the equations of 3 and 4, we reach the following equation:

$$p = k [wL + p_m Q_m] / Q \quad (5)$$

When the equation of 5 is re-edited, it becomes possible to obtain the determinants of the real wage (Arestis, 1996:14-21):

$$w/p = (Q/kL) - [p_m Q_m / pL] \quad (6)$$

W refers to the rate of money wages and p is the final output price (price of the final output); moreover, L shows the labor input. The price of output includes not only consumption but also investment goods. Kalecki states that both the prices of consumption and investment goods have a tendency for moving together (Sawyer, 1985:109).

The 6th equation deals with three factors which determine the relationship between the money wages and output prices. These factors are the degree of monopoly which is indicated by k as well as production techniques and labor-intensive shown as Q / L and Q_m / L ratios, finally, it is the relationship between the imported input costs (p_m) and domestic output prices. In addition, the speed of the adjustment of prices to the costs can be shown as a fourth factor. Thus, for instance, in the case of the rapid increase in money wages (that is, it takes time for the prices catch up wage increases), there will be a temporary increase in real wages (Sawyer, 1985:109-10).

The 6th equation has two significant indicators. The first one verifies the assumption that the real wage is slightly affected by the conditions of labor market; moreover, it is determined by the product market. The second one is the fact that the relationship between real wages and output level cannot be directly predicted (Arestis, 1996:14-21, Sawyer, 1985:110).

The main aim of the current study is to make an econometric analysis of real wage determination in the manufacturing industry for Turkey on the basis of the number 6 equation. In this regard, it is obvious that since k comprises monopoly degree, an increase in this ratio will decrease the real costs; whereas, an increase in productivity seems to enhance the real costs. On the other hand, in the second part of the equation, it is noteworthy to pay attention to the negative impact of the imports of raw materials on the real wage.

3. Related Literature

The main finding obtained from the study in which Arestis (1986) examined the costs and prices for England is that the decrease in the rate of inflation since 1980 is due to the reduction of prices of raw materials. These prices have a direct impact on domestic prices. This effect is much more effective on inflationary expectations. At the same time, it has been concluded that this effect helps to reduce the difference between the target real wage and actual real wage. It was found that the rate of wage is correlated positively with the expected price changes; furthermore, it was also found to have a negative relationship with the real earnings. Besides, the findings obtained support the idea that unemployment is not affected by wages (Arestis, 1986:351-52).

In the studies including standard Post-Keynesian wage equality, as Atesoglu (1997) took it as an example, Arestis & Milberg (1993-94) analyzed relationship of wages with the prices as well as unemployment. Accordingly, the labors will negotiate for their nominal wages regardless of being unionized or non-unionized. Nominal wages are affected by the real wage having prevailed at the end of the last term in a relation to the desired level. On the other hand, the expected inflationary pressures are considered to be important during the determination of the real wage, which is desired by unions. The unemployment rate is accepted as a good representative of the unemployed (Arestis & Milberg, 1993-94:180-181).

In the article regarding the inflation, Atesoglu (1997) states the significance of the determination of wage, price as well as unemployment. In his current study, Atesoglu seeks to clarify the issue of inflation in the United States through the Post-Keynesian perspective. The results indicate that the rates of unemployment and inflation are significant determinants of wage inflation (Atesoglu, 1997:643).

According to the study in which Destefanis (1999) stated that there was a case in Italy related to the determination of the wages; when the rate of consumer price inflation is compared with such other wage determinants as sectoral labor productivity and unemployment rate, the significance of the bargaining power in the determination of wages as well as the standard of wage is determined by estimating the empirical relationship of the wage comparisons among the sectors. In addition, it is also evident that in the determination of the wages, the role of the sectoral productivity rate, unemployment rate and the rate of consumer price inflation has increased.

According to the studies of Metin & Ucdogruk (1998) in which they examined the long-term wage-price-employed relationship as econometric in the Turkish manufacturing sector, it was found a causal relationship viewed as studies; besides there is a relationship from the employment towards real wages. Moreover, it was suggested that the nominal wages are adjusted indirectly according to the change of the price as well as employment. Accordingly, prices and employment increases enhance nominal wages.

In the article in which he examines the relationship between the labor market and employment rates the Turkish manufacturing industry Adas (2003); it is evident that the data related to the capital stock cannot explain the level of employment, and in this sense it is hardly possible to reach a conclusion as to whether there is a positive correlation between these variables. However, the existence of a negative relationship between employment and real wages could not be revealed. In this sense, it is concluded that the neo-classical labor market conditions do not apply to the Turkish manufacturing sector.

According to the study, which is on the differences in wages and productivity in public and private manufacturing industry for Turkey, carried out by Özmucur (2003), it was found that there was positive and significant labor productivity coefficients in the private sector and sub-sectors of the manufacturing industry for the application, except for food, basic metal sectors. As for the results obtained for the public sector, in most sectors labor productivity and significance level of the coefficients of the variables seems to be quite low or even insignificant.

Akyildiz (2005), in a study in which he examines the productivity of the private sector of manufacturing industry the relationship between wages, found a positive relationship between wage growth and productivity growth, whereas he could not find the same relationship between productivity and unit wage costs. It was concluded that real wages were especially influenced by two elements in a positive manner; the productivity and unit wages. In addition, the capacity utilization rate and the cumulative real gross fixed capital formation are the other variables having a positive impact on real wages.

According to the study, in which Saracoglu & Suicmez (2008) investigated the Turkish manufacturing industry growth, employment and productivity issues, although there was a negative correlation between the employment and productivity, there was a positive relationship between the real wages and productivity, but it is evident that the rate is not a so high levels.

In the study conducted by Bayyurt and Duzu (2008) in which performance measurement has been tested for the manufacturing firms in Turkey and China, the relationship between wages and many factors were investigated and thus significant results have been achieved. However, due to the method followed in the study (Data Envelopment Analysis), more than one dependent variable could be used in the analysis; as a result their priority to one another could be put forward. Accordingly, all of explanatory variables (number of employees, inventory turnover, receivable turnover, total assets / total debt, cash flow, current ratio, and property plant & equipment / total assets (PLTS) have been achieved to be effective in terms of explaining the performance of the firm for both countries. It is clear that ebit margin in Turkey has the highest correlation. Therefore, it is defined as the most important variable in terms of net income per employee. On the other hand, in China, the most important variable emerges as the net income per share, which is followed by net income per employee and growth in sales. When the analysis was

applied to all participants from Turkish and Chinese firms, the importance of the dependent variables which are significant is as follows: net income per employee > net income per share > ebit margin > growth in sales. As it can be seen, when the two countries are considered together, net income per employee variable has a priority among others. Thus, it is obvious that the effects of the estimators determine the level of wages in Turkey and China. In this regard, the impact of the number of workers on income is undeniable.

If this result is associated with the supply of labor, the perspective will change its direction toward causality. Accordingly, in their study, Berulav and Chikav (2012) analyzed wages in terms of labor supply; furthermore, Bayyurt ve Duzu (2008) clarified that even though the number of workers, in other words the supply of labor, is considered as the determinant of wage, wage is a factor for the supply of labor.

Türedi & Terzi (2009), investigated labor productivity and wage relationship for Turkish private and public manufacturing sector. The obtained results show that while in the public sector, there is one way causality from wages towards productivity, in the private sector, it emerges a two-way causality between wages and labor productivity. Whereas productivity has no effect on the determination in the public manufacturing industry, in the private manufacturing sector it appears that productivity seems to play an important role in the determination of wages.

Günay, et al. (2005) investigated real wages in the manufacturing industry, profit margin and the issue of inflation for Turkey after 1980, by means of increasing the profit margin the manufacturing industry reacted the situation in which they encountered the real wages increased costs and inflation shocks. It was concluded that there was a positive relationship between the inflation rate and the profit margin; on the other; in addition, there is a relationship between profit margin and the cost of real wages in the same direction.

4. Data and Empirical Methodology

The real wage equality, which was derived from Kalecki's price equality, was used as a model in the study. In the application conducted on the determiners of the real wages, the parameter k , which includes the monopoly level, generates a constraint for the econometric analysis. Due to the lack of data including the period handled and representing the time series for Turkey in accordance with the degree of monopoly, k is taken as a fixed variable.

In the study based upon the 6th equation, the real wage refers to dependent variable; whereas the productivity rate and the ratio of raw material imports to the output price index as well as the employment index multiplication represent independent variables. In the equality, the ratio of the prices of imported product to the domestic output prices and the ratio of the number of imported product to the input of labor were regarded as separately. However, as the number of

intermediate goods, which were imported in such a way that included the current period for Turkey, and the data of price could not be obtained, the import of intermediate goods was denominated as the national currency of the country. The related variable known as the model was obtained by the ratio of the producer price index of the import of intermediate goods to the employment index. In order to simplify the expression, the related independent variable is defined as the cost of raw materials. Productivity variable shows the output which refers to per labor input. Nevertheless, since the employment data consist of six-month ones until 2000, it poses a problem in the use of time-series method. Therefore, for the period of 1989Q1-1999Q4, as it is known that six-month data were collected in April and October, the first six-month data were re-derived as a result of accepting the first three-month data as well as considering growth rates. In the current study, since Kalecki dealt with the prices as a manufacturer and assessed the impact of the price level set by the company owners on the real wage, producer price index was preferred as a representative of domestic output prices. However, a dummy variable was used within the period considering the negative effects of the 2001 crisis on Turkey's economy. The series, which were given 1 in the first quarter of the year and 0 for the rest of the year, were included in the model as an explanatory variable.

The sample period covers quarterly data from 1989 to 2012. The raw data have been collected from TUIK (Turkish Statistical Institute) data set. Real wages, gross domestic product and producer price index variables are based upon 1998 prices. In the present study, such variables as real wages, cost of imported raw materials, productivity are consistent with Kalecki's approach. Accordingly, it is expected that there is a positive relationship between real wages and production; whereas, raw material import affects real wages negatively.

The method which is to be followed for the model in the present study consists of the stability test, which will be held in order to measure the short and long-term relationships of the series, and co-integration tests which will be done according to the results obtained from the series. In addition to these tests, error correction model will be included in case of a long-term relationship. In this regard, the econometric method is based upon the effectiveness of the results obtained with the implementation of the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests and Vector Auto Regression (VAR) model as well as Johansen - Juselius (JJ) co-integration analysis and thus it concentrates on the error correction model depending on the results obtained from the analysis. The aim of the study is to find out which variable and/or variables determine the real wages through the empirical application which will be held for the Turkey's economy. In this context, the method of time series was preferred and all the predictions were made via E-views 6-Beta program. All series were seasonally adjusted and thus they were included in the model by taking their logarithms.

Accordingly, the model used in the study can be expressed by the equation below:

$$\ln rw = \beta_0 + \beta_1 \ln prod + \beta_2 \ln mpl + \beta_3 dum + e_t \quad (1)$$

Dependent variable (rw): Real wages

Prod : The rate of productivity

mpl : The ratio of the import of raw materials to multiplication of the producer price index and employment index (M/pL)

M : Multiplication of imported raw material prices and the amount of imported raw materials ($P_m Q_m$)

dum: Dummy variable used as a representative of 2001 crisis

e_t : It represents the error term.

In the empirical application, which is to be performed for the model, the values of the coefficients are expected to be as follows: $\beta_1 > 0$, $\beta_2 < 0$.

5. Empirical Results

The results from unit root tests are given in Table 1 and suggest that all the variables are integrated of the same order, i.e. I(1).

Table 1: ADF Unit Root Results

Variables	Level		First difference	
	ADF values	Probability Values	ADF values	Probability Values
Ln_{rw}	-2.023517 [0]	0.5808	-4.251468 [1]*	0.0000
Ln_{prod}	-2.405828 [0]	0.3743	-10.05547 [0]*	0.0000
Ln_{mpl}	-2.979692 [0]	0.1434	-8.791165 [0]*	0.0000

Critical values for the ADF test are obtained from Davidson & MacKinnon (1993). The symbol as [] shows, the length of the delay, the asterisk indicates the significance at the level of (*) 5%

Table 2: PP Unit Root Results

Variables	Level		First difference	
	PP values	Probability Values	PP values	Probability Values
Ln_{rw}	-2.183849 [3]	0.4927	-8.341351 [5]*	0.0000
Ln_{prod}	-2.530729 [3]	0.3130	-10.05081 [3]*	0.0000
Ln_{mpl}	-3.290859 [3]	0.0740	-8.784751 [2]*	0.0000

Critical values for the PP test are obtained from Phillips & Perron (1988).

The symbol as [] shows, the length of the delay, the asterisk indicates the significance at the level of (*) 5%

According to the Akaike, Schwarz and Hannan Quinn information criterions, lag length is 1. Using this lag length, Johansen-Juselius test results follow. Both trace test and max-eigenvalue test indicate 1 co-integrating equation at the 0.05 level as

seen in Table 3. Our finding of at least one co-integrating vector indicates that there is a long run relationship among the given variables.

Table 3: Johansen & Juselius (1990) Cointegration Test

Eigenvalue	Trace Test(TT)	0.05 Critical Value	Prob.**	Hypothesized No. of CE(s)
0.429322	81.41741	63.87610	(0.000)	None *
0.143585	28.69000	42.91525	(0.5806)	At most 1
0.110611	14.12000	25.87211	(0.6477)	At most 2
Eigenvalue	Max – Eigen Statistics	0.05 Critical Value	Prob.**	Hypothesized No. of CE(s)
0.429322	52.72740	32.11832	(0.000)	None *
0.143585	14.57000	25.82321	(0.672)	At most 1
0.110611	11.01869	19.38704	(0.511)	At most 2

* Denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Table 4 presents the weak exogeneity of the variables. That is, whether they are exogenous or endogenous.

Table 4: Weak Exogeneity Test

	RW	PROD	MPL
LR	4.024918	2.286662	0.637871
Prob.	(0.044833)	(0.130490)	(0.424483)

According to the LR test statistic, RW is endogenous. For the remaining variables, the zero hypothesis (i.e. variable is weakly exogenous) can not be rejected so both PROD and MPL are accepted as weakly exogenous.

Vector error correction (VEC) estimates are presented in Table 5. The column that is in bold is the expected equation:

$$D(\text{LNRW})=0.04+0.02D(\text{LNRW}(-1))+0.007D(\text{LNPROD}(-1))-0.001192D(\text{LN MPL}(-1))-0.02D(\text{DUM}(-1))-0.005 \mathcal{E}$$

Normalized Cointegrating Coefficients and Error Correction Term are presented in Table 6. The resulted normalized cointegrating equation is the following:

$$\text{RW}=1.240491\text{PROD}-0.893390\text{MPL}+4.764857\text{DUM}$$

Since all variables are in natural logarithm and the coefficients are defined as elasticities. So, productivity elasticity and raw materials import elasticity are 1.24 and -0.89, respectively. That is, 1 % rise in productivity causes 1.24% increase in real wages. In spite of that, 1 % rise in raw materials import causes 0.89 % decrease in real wages.

On the other hand, error correction term is found as -0.005839 (between zero & minus one and negative as expected) and it is statistically significant (t value is

2.24178 in absolute value). This means that it will be caught the long-term balance after a very long time.

It is evident that the productivity positively affects the real wages. On the other hand, raw materials import has a negative effect on real wages.

Table 5: Vector Error Correction Estimates

Error Correction:	D(LNRW)	D(LNPROD)	D(LNMPL)	D(DUM)
CointEq1	-0.005839 (0.00260) [-2.24178]	0.015186 (0.01143) [1.32805]	-0.023517 (0.02358) [-0.99742]	0.215097 (0.03263) [6.59282]
D(LNRW(-1))	0.021895 (0.10593) [0.20669]	-0.018843 (0.46502) [-0.04052]	-0.960369 (0.95884) [-1.00160]	-1.224529 (1.32683) [-0.92290]
D(LNPROD(-1))	0.007673 (0.02910) [0.26371]	-0.146730 (0.12773) [-1.14877]	0.171573 (0.26336) [0.65147]	-0.143195 (0.36444) [-0.39292]
D(LNMPL(-1))	-0.001192 (0.01393) [-0.08553]	0.039370 (0.06116) [0.64374]	0.013304 (0.12610) [0.10550]	0.024618 (0.17450) [0.14108]
D(DUM(-1))	-0.028275 (0.00858) [-3.29565]	0.011803 (0.03766) [0.31339]	-0.110593 (0.07765) [-1.42417]	0.028534 (0.10746) [0.26554]
C	0.004006 (0.00100) [4.00219]	0.007450 (0.00439) [1.69558]	0.018215 (0.00906) [2.01065]	0.005565 (0.01254) [0.44392]

Table 6: Normalized Cointegrating Coefficients and Error Correction Term

Normalized Equation:	RW	PROD	MPL	DUM
Equation.1	1	-1.240491 [-1.74585]	0.893390 [2.14918]	-4.764857 [-8.03822]
Error Correction Term	-0.005839 [-2.24178]			

6. Conclusion

The price of labor and the worker's wage determination process, which is the primary source of income, is of great importance due to its role on the distribution of income. Furthermore, the distribution of income between employees and employers resulted in favor of those who determine the wages hence causing a conflict between them. Kalecki took into account the struggle considering the distribution of income; moreover, he aimed to put forward a theory which was based upon how firms set prices and hence how the share of labor in output was determined. Here is a price based on costs and as a result there is a wage

determination. Thus, at the time when the wages and import of raw materials are referred to as the elements of cost, while the real wages are expected to be affected in a positive way, it is expected that real wages which are an important elements of cost are to be affected in a negative way.

In the current study, an empirical application was performed for Turkish economy by means of real wage equality which was derived from Kalecki's price equation. The obtained results reveal that there is a positive and significant long-term relationship between productivity and real wages. In this regard, the same long-term relationship was obtained between the cost of raw materials and real wages; nonetheless, the direction of the relationship was reversed. Accordingly, there is a negative relationship between the cost of the imported raw materials and real wages. It is evident that the obtained results for Turkey favor Kalecki's argument.

References

- Adas, C.G. (2003). "Türk imalat sanayi işgücü piyasasında ücretler ile istihdam arasındaki ilişki". *İstanbul Üniversitesi İktisat Fakültesi Mecmuası*, 53 (2), 145-187.
- Akyıldız, H. (2005). "Türkiye'de özel sektör imalat sanayii'nde verimlilik, ücret ve istihdam ilişkisi". *Süleyman Demirel İktisadi ve İdari Bilimler Fakültesi Dergisi*, 10 (2): 39-58.
- Annable, J.E. (1980). Money wage determination in Post Keynesian economics. *Journal Of Post-Keynesian Economics*, 2 (3): 405-419.
- Arestis, P. (1986). Wages and prices in The UK: The Post Keynesian view. *Journal Of Post-Keynesian Economics*, 8 (3), 339-358.
- Arestis, P., (1992). *The Post-Keynesian Approach To Economics*. England: Edward Elgar.
- Arestis, P. (1996). "Kalecki's Role in Post-Keynesians Economics: An overview" in J.E.King (Ed.), *An Alternative Macroeconomic Theory: The Kaleckian Model and Post-Keynesian Economics*. USA:Kluwer Academic Publishers.
- Arestis, P., Milberg, W. (1993-94). "Degree of monopoly, pricing, and flexible exchange rates". *Journal Of Post-Keynesian Economics*, 16 (2): 167-188.
- Arestis, P., Sawyer, M. (1994). *The Elgar Companion to Radical Political Economy*, UK:Edward Elgar.
- Atesoglu, H.S. (1997). A Post-Keynesian explanation of U.S. inflation. *Journal of Post-Keynesian Economics*, 19 (4), 639-649.
- Bayyurt, N., Duzu, G.(2008). "Performance measurement of Turkish and Chinese manufacturing firms: A comparative analysis", *Eurasian Journal of Business and Economics*, 1(2): 71-83.
- Berulava, G., Chikava, G. (2012). "The determinants of household labor supply in Georgia, France and Romania: A comparative study", *Eurasian Journal of Business and Economics*, 5(9): 141-164.
- Crotty, J.R. (1980). "Post-Keynesian economic theory: An overview and evaluation", *The American Economic Review*, 70 (2): 20-28.
- Davidson, R., MacKinnon, J.G. (1993). *Estimation and inference in econometrics*. New York:Oxford University Press.

- Destefanis, S. (1999), "The Wage-wage spiral and wage determination", In S. Claudio And P. Kriesler (Eds), Keynes, Post-Keynesianism And Political Economy, Routledge, pp. 485-508
- Günay, A., Metin-Özcan, K., Yeldan, E. (2005). "Real wages, profit margins and inflation in Turkish manufacturing under post-liberalization". *Applied Economics*, 37:17, 1899-1905.
- King, J.E. (1996). An Alternative Macroeconomic Theory: The Kaleckian Model and Post-Keynesian Economics. USA:Kluwer Academic Publishers
- Lavoie, M. (1996-97), " Real wages, employment structure, and aggregate demand curve in a Kaleckian short-run model", *Journal Of Post-Keynesian Economics*, 19(2): 275-288.
- Levine, D.P, (1986), " A note on wage determination and capital accumulation", *Journal Of Post-Keynesian Economics*, 8(3): 463-477.
- MacKinnon, J.G., Haug, A.A., Michelis, L. (1999). "Numerical distribution functions of likelihood ratio tests for cointegration. *Journal of Applied Econometrics*, 14 (5): 563-77.
- Metin, K., Ucdogruk, S. (1998). " Türk imalat sanayinde uzun dönem ücret-fiyat-istihdam ilişkilerinin ekonometrik olarak incelenmesi". *Çukurova Üniversitesi İ.İ.B.F. Dergisi*, 8 (1), 279-287.
- Özmucur, S. (2003). "Wage and productivity differentials in private and public manufacturing: The case of Turkey". Econ WPA Series, No:0303002, "128.118.178.162/eps/io/papers/0303/0303002.pdf", E.T.18/12/2012
- Phillips, P.C.B., Peron, P.(1988). Testing for a unit root in time series regression. *Biometrika*, 75 (2): 335-346.
- Reynolds, P.J. (1983). "Kalecki's degree of monopoly". *Journal of Post-Keynesian Economics*, 5 (3): 493-503.
- Reynolds, P.J. (1996). " Kalecki's Theory of Prices and Distribution", in J.E.King (Ed.), An Alternative Macroeconomic Theory: The Kaleckian Model and Post-Keynesian Economics. USA:Kluwer Academic Publishers.
- Saracoglu, B. Suicmez, H. (2008). "Türkiye imalat sanayinde büyüme, istihdam ve verimlilik sorunları". TİSK Akademi, 2008/II, 89-126.
- Sawyer, M.C. (1985). *The Economics of Michal Kalecki*, New York:M.E.Sharpe Armonk.
- Sen, K., Vaidya, R.R. (1995). "The determination of industrial prices in India:a post-keynesian approach", *Journal of Post-Keynesian Economics*, 18 (1): 29-52
- Türedi, S., Terzi, H. (2009). "Türkiye'de Kamu-Özel İmalat Sanayinde Ücret ve İşgücü Verimliliği İlişkisi". *Eskişehir Osmangazi Üniversitesi Sosyal Bilimler Dergisi*, 10 (1):144-162.