The Nature of Money in Post-Keynesian Institutionalists:

Turkey Case

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ABSTRACT

It is evident that the views of Post Keynesian and Institutionalist Economics regarding the money and credit are hard to be separated from one another; moreover, considering their similarities, it is observed that they are good examples of the topic. The fact that the studies on money and credit are performed within the framework of the institutions leads them to be one of the most striking features of combining the two approaches. The financial institutions, which launch the basic features of money, change as well as reflecting it, form one of the main parts of Post-Keynesian theory of money and finance. In the present study, Post-Keynesian Institutional approach and their perspectives on money emerging as the combination of Post-Keynesian and Institutional economics along with performing an opposing view to the orthodox economic analyses are discussed both theoretically and empirically. The empirical study based on the VEC model is conducted on the determinants of the amount of money throughout Turkey. Accordingly, taking 1987: Q1 2011: Q1 period into account, the endogeneity of money supply in Turkey was investigated. The findings obtained as a result of the study is consistent with the the Post-Keynesian Institutionalist approach.

Key words: Post-Keynesian Economics, Institutional Economics, Monetary Theory of Production, Money, Credit, Investment

1. INTRODUCTION

It is essential to define Post-Keynesian Institutionalists as economists basing their ideas on reality, trying to favor not the abstract but the concrete theories, studying on the causes of the problems as well as considering on the solutions of these problems. The fact that it emerged in the early 1980s as a branch of the evolutionary economies also favors this idea. Post-Keynesian-Institutionalist approach is considered as a synthesis of Post-Keynesian and Institutional economics. The fact that the social issues are processed under the strength of organizations and institutional perspective is included in economics is one of the key elements combining these two approaches. This common perspective makes Post-Keynesians and Institutionalists become together in terms of their approach to the solution of economic problems. One of these issues has been related to monetary theory.

The main theme of this approach is inevitably The Monetary Theory of Production. Accordingly, it is observed that the money supply is provided through monetary authorities as a requirement for the need of production by the institutions which dominated economy (as the large enterprises which have higher market share). The starting point of the monetary theory is not the demand for money but the loan demand. In this regard, that money is credit and demand-based and results of this emerges as one of the characteristics of Post-Keynesian Institutionalists differing them from main economic flows.

As can be seen in Table 1, studies on these issues confirm the endogeneity of the money supply. Accordingly, in econometric studies conducted in several countries including Turkey, the results have been obtained in terms of the fact that bank loans affect money supply.

Table 1: Empirical Studies for Endogenous Money

Authors	Countries & Period	Econometric Methodology	Results
Howells and Hussein (1998)	G7-Countires 1957Q1-1993Q4	Granger Causality Co-integration	Bank lending causes money supply in the G7.Money supply is endogenous.
Vera (2001)	Spain 1987:01-1998:10	Granger Causality	Bank lending causes money supply and money is endogenous in Spain.
Shanmugam, Nair and Wee Li (2003)	Malaysia 1985Q1-2000Q4	Granger Causality, Co-integration	Bi-directional causality is found between bank loans and money supply.Money supply is endogenous in Malaysia.
Cin and Demirel (2007)	Turkey 1980-2003	Granger Causality, Cointegration, VAR	There is bi-directional causality between autonomous spending and money supply. Investment expenditure leads monetary expansion. Money supply is endogenous in Turkey.

Badarrudin, Khalid and Ariff (2009)	Selected Emerging Countries 1999:06-2007:07	Granger Causality Cointegration, VAR	Money is endogenous in China, Malaysia, the Czech Republic, India and Turkey, while it is exogenous in Mexico.
Gedeon (2009)	Bosnia and Herzegovina 2005-2007	Descriptive Analysis	It has been concluded that money supply is endogenously determined.
Işık and Kahyaoğlu (2011)	Turkey 1987Q1-2007Q3	VAR, Cointegration, Granger Causality,	Monetary base is affected by credit stock, likely enough if credits increased, money supply would rise.

2. POST-KEYNESIAN INSTITUTIONALISM UNDER THE LIGHT OF POST-KEYNESIAN AND INSTITUTIONAL ECONOMICS

Post-Keynesianism has become a concept which is supported by the ideas and opinions of non-Orthodox Cambridge economists whose importance initially increased with the emergence of Keynesian revolution1. The main purpose of Post-Keynesian economics is to clearly demonstrate how the economy works and hence completing the unfinished Keynesian transformation, which forms the General Theory. According to Robinson, with its short description, the Post-Keynesian Economics (PKI) is to put the method of analyses, which signifies the difference between the past and the future, or an economic theory into practice (Robinson, 1978:12).

Considering the topics PKI deals with, the distinctive themes are listed as follows:

i) In PKI, the "uncertainty" phenomenon is emphasized related to the endogeneity of the events during the historical period. Because the future is unknown, and the past is not static. The expectations may be in vain due to the uncertainty and thus causing a change in economic behavior. In addition, uncertainty is how it works in various societies and institutions, as well as issues associated with organized (Jespersen, 2009:38).

ii) Investment demand is considered as the driving force of the economy and investment expenditure accelerates through expectations. Thus, the striking emphasis is done on the role of the failure of effective demand with the investment demand (Lavoie, 2006:20).

iii) Social relationships form the basis of the analysis. There is a unifying perspective of the Post-Keynesian and Institutional economics.

With the adoption of the institutionalist or social perspective, which is based upon individual preferences, Post-Keynesians are to analyze how the predictions of economic agents are formed by institutions and habits. This perspective enables Post-Keynesian to include the social phenomena, which are disregarded by Neo-classical theory, in their economic analyzes (Pressman, 2003:196-197). The incorporation of social issues into the economic analyses through institutions provides an opportunity for establishing a link between Institutionalists and Post-Keynesians (Brazelton, 1981:538-539).

It is possible to form a general framework of Post-Keynesian Institutional Approach with all of its similarities.

Post-Keynesian Institutionalism, which is a synthesis of Post-Keynesian and Institutional economics, emerged as a branch of evolutionary economy in the early 1980s, and thus having a strong influence on how institutional economists, most of whom are American origin, perceive the world through Keynesian economy (Peterson, 1977:201).

The Post-Keynesian aspect of Institutional tradition can be emphasized in shaping economic behavior by pointing out the dominant roles of culture and institutions (Arestis, 1996:113-114). Meanwhile, benefit has an impact on cultural structure in an economic sense. Such that, all the institutions are considered as economic institutions at a certain degree.

Evolutionary economics, determined by economic interests, is to be a theory of the process of cultural development (Veblen, 1898:392-393). This explanation has significance as it conveys heterodox perspectives of not only Institutionalist but also Post-Keynesian economics.

Post-Keynesian Institutionalism has consistent assessment in terms of its emphasis on economic life related to the conflict regarding the economic life as well as the centrality of power (Whalen, 2008:46-53). However, the institutions have power for explaining not only such processes as production, employment and wages but also the events in terms of money.

However, at this point, it is not possible to limit institutions only in terms of their roles in such processes as production, employment and wages. As these mentioned institutions also has the power to explain the events within the context of money.

The similarity between the views of the Post-Keynesian and Institutional economics regarding money and credit plays a significant role in the emergence of a common approach.

3. THE MONEY MATTER AS A VIEW OF POST-KEYNESIAN INSTITUTIONALISTS

The matter of money is a significant issue which Post-Keynesians and Institutionalists converge. Money is not literally a means of exchange and as a whole, it is closely linked to the economy and the movements of entrepreneurial sector for both of the approaches. Therefore, the views on money can inevitably be seen as united in Monetary Theory of Production (Arestis and Eichner, 1988:1004). The theory at issue brings Keynes and Veblen together.

According to Dillard, the main ideas of Keynes and Veblen concerning economy are basically similar. The striking similarity can be explained as Monetary Theory of Production; that is, both economists evaluate modern economic institutions realistically, and thus laying a common emphasis related to the role of money in these institutions. Hence, it is meant that money is a strategic institution of modern capitalism; besides, it is the main obstacle to full employment and production in the developed industrial societies. In these societies, proving that monetary and financial institutions overcome the obstacles, excessive production will be achieved. Dillard, who emphasized the role of the capitalist system, expressed that as an institution, money differs from other economic systems which are under capitalism. Since holding of the money capital under capitalism characteristically causes direct unemployment as well as fluctuations in output (Dillard, 1980:255; Dillard, 1987:1623).

Davidson reveals this situation from a different perspective. According to Davidson, money is of two special flexibility features leading to unemployment throughout the world in which there is an unknown and unpredictable future. These features clarify such questions as to why money does not grow in trees- the production flexibility of money is zero- and why the producible goods do not have proper liquidity- elasticity of substitution between liquid assets such as money and producible goods is zero. On condition that money has this special rate of flexibility, unemployment increases (Davidson, 1994:18).

The first feature refers to the fact that at the time when people want money rather than goods, no one could be employed in order to make money. The second feature is that people's need for money

will continue even if the return of the money, which is held, declines zero. In other words, it is mentioned that there is not the substitution of money so as to compensate for debt. When people are concerned about the future, they wish to save money; nevertheless, as nobody is hired for making money, the employees are made redundant and the enterprises cannot sell goods; moreover, everybody will be even more worried about the future (Pressman, 2003:198). These results verify not only the theme, which Keynes underlies with the Monetary Theory of Production, but also the issue Veblen emphasized the theory regarding the entrepreneurial class. According to both theories, production and employment are restricted as making money for both production and employment depends on the planned individual decisions and actions (Dillard, 1980:271). That's to say, money and production are dependent on each other.

The main model of Monetary Theory of Production consists of three macro-agent - banks, companies and employees. This economic process can be expressed by five stages respectively (Davanzati and Realfonzo, 2009:119-120):

In the first stage, production begins with bargain in credit market between banks and companies. Firms need money for both hiring labor and starting production. Banks initially provide financing which is required in the beginning. At the second stage, firms use the initial funding provided by the banks in order to purchase labor as well as giving the previously determined wage to employees. In the following phase, when the firms achieve workforce, production begins and they form their production plans. After production, there is a circulation stage, and thus firms offer selling goods their employees. If the consumption propensity of employees is equal to one, firms receive the whole money back; furthermore, they plan to pay wages and debts. If the consumption propensity of employees is less than one, firms struggle for gaining unspent money by means of selling properties in the financial markets. Thus, firms get the last financing provided via goods and asset markets. At the end of the process, the monetary cycle is closed with the repayment of funding to the banks along with the extinction of the original money. Entrepreneurs are required to re-produce goods periodically in each term. Therefore, in financing the resources to be used, the system ends up with the loan (Işık, 2010:17).

The money determined with the demand for credit is one of the features which strictly separates the money theory of the Post-Keynesian and Institutional approaches from Orthodox paradigm. Accordingly, debts are the basis of money. Therefore, the determinants of debts should be the ultimate determinants of the money stock. Money does not exist as a result of an intervention done by the monetary authorities, accordingly. Money is created through the production of debts provided by the banking system. The basis of Post-Keynesian monetary analysis is the theory of endogenous money. Thus, the money supply may not be determined according to the request of the central bank; instead, it is determined according to the demand for bank loans as well as public preferences. According to Post-Keynesians, the money supply is not independent of the needs of the economy-loans; rather, it creates deposits. The starting point of the theory of money is not the demand for money but the request for credit. (Arestis and Eichner, 1988:1017; Lavoie, 2006:57; Lavoie, 2010:156).

As firms should take into account the banking system which is to adapt to the credit demand, money occurs endogenously in the private sector in order to meet the requirements of the trade.

Kalecki draws attention to the significance of effective demand during the process of inherent creation of money.

Investment expenditures have a significant role in determining the level of effective demand. An increase in effective demand requires credit expansion, which usually involves the process of money creation. (Kalecki's study as cited in Arestis, Dunn and Sawyer, 1999, s.539; Toporowski, 2003, p.228). Therefore, during the current process of money creation, basically, the financial needs of the firms make money endogenous. Given that this requirement stems from the desire for investment, in an environment where the amount of money affects the demand for money, the role of the investment in this interaction is inevitable.

Thus, in the present study, the interaction between the amount of money, the private sector credit demand and investment has been analyzed practically and the validity of the results obtained

theoretically has been tested for Turkey. Before the opinions of Post-Keynesian Institutional economics related to the determination of the amount of money are analyzed for Turkey, it would be appropriate to make a brief explanation regarding the country's monetary policy.

4. DATA AND EMPIRICAL METHODOLOGY

4.1. Data

The sample period covers quarterly data from 1987:1 to 2011:1. The raw data have been collected from CBRT (Central Bank of the Republic of Turkey) and TSI (Turkish Statistical Institute) data set. All three variables are in natural logarithm and seasonally adjusted through X-12. In this paper the variables used are; money supply (M2), private sector credits (PRICRD) and private sector investment (PRIINV), which is consistent with Post-Keynesian Instutionalist approach. According to this, private sector credits and private sector investment determine the money supply; that is why, the money supply is endogenous. In the current study, broad money supply (M2) which is used in Turkish banking system has been preferred.

4.2. Empirical Methodology

A prerequisite for cointegration among three variables is that these variables are stationary in first differences I(1). We, therefore, first test for a unit root by means of one of the conventional unit root tests called ADF.

Having verified that the series are stationary and the same order integration I(1), we will test to find out whether there exists any long run equilibrium relationship between the variables using conventional cointegration test or not. We apply the cointegration test developed by Johansen-Juselius (1990). Moreover, a lag length must be chosen for the vector autoregressive (VAR) in order to implement the Johansen procedure and it must also be determined what the order of integration of the series entering the VAR will be. Accordingly, lag length is determined by Schwarz Information Criteria (SIC). The residuals from the chosen VAR is also checked for whiteness.

Next, we apply Likelihood Ratio (LR) test to examine the variables whether they are endogenous or exogenous. Therefore, we can get the normalized cointegrating equation in the right manner.

Finally, we apply the Vector Error Correction Mechanism (VECM) to get a dynamical system with the characteristics, which also reveals that the deviation of the current state from its long-run relationship will be fed into its short-run dynamics.

4.3. Empirical Results

In this part empirical results are given respectively. In the first section, unit root test results are given while the second section presents the cointegration test results, and in the last one the vector error correction results are discussed.

4.4. Unit Root Test Results

The results from unit root tests are given in Table 2 and hence suggesting that all the variables are integrated in the same order, I(1).

Table 2: Unit Root Test Results

Variables	Level		First Difference	
	ADF	Prob.	ADF	Prob.
M2	-1.369[0]	(1.000)	-8.417[0]*	(0.000)
PRICRD	-0.964[5]	(0.943)	-5.912[4]*	(0.003)
PRIINV	-0.219[1]	(0.991)	-6.308[0]*	(0.000)

The critical values (CV) for the ADF are from Davidson and MacKinnon (1993). (with constant and trend)

Lag length in [ ] , Asterisk (*) shows significance at 5% level.

4.5. Cointegration Test Results

According to the SIC, lag length is found as 2. Using this lag length, Johansen-Juselius test results follow. Both trace test and max-eigenvalue test refer to 1 cointegrating equation at the 0.05 level as seen in Table 3. Our finding of at least one cointegrating vector indicates that there is a long run relationship among the given variables.

Table 3: Johansen and Juselius(1990) test of cointegration between export and import.

Eigenvalue	Trace Test(TT)	0.05 Critical Value	Prob.**	Hypothesized No. of CE(s)
0.324	52.314	29.797	(0.000)	None *
0.108	15.425	15.494	(0.051)	At most 1
0.048	4.674	3.841	(0.030)	At most 2 *
Eigenvalue	Max – Eigen Statistics	0.05 Critical Value	Prob.**	Hypothesized No. of CE(s)
0.324	36.889	21.131	(0.000)	None *
0.108	10.750	14.264	(0.167)	At most 1
0.048	4.674	3.841	(0.030)	At most 2 *

* Denotes rejection of the hypothesis at the 0.05 level

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

The results of the weak exogeneity of the variables, which is exogenous or endogenous, are shown in Table 4.

Table 4: Weak Exogeneity Test

	M2	PRICRD	PRIINV
LR	25.897	1.268	0.014
Prob.	(0.000)	(0.259)	(0.902)

According to the LR test statistic, M2 is endogenous. For the remaining variables, the zero hypothesis (i.e. variable is weakly exogenous) can not be rejected so both PRICRD and PRIINV are considered as weakly exogenous.

4.6. Vector Error Correction (VEC) Results

Vector error correction estimates are presented in Table 5. The columns in bold is the expected equation:

$$D(M2) = 0.15 + 0.05D(M2(-1)) + 0.06D(M2(-2)) + 0.44D(PRICRD(-1))$$
$$-0.70D(PRICRD(-2)) - 0.15D(PRIINV(-1)) - 0.04D(PRIINV(-2)) - 0.23\varepsilon$$

Table 5: Vector Error Correction Estimates

Error Correction:	D(M2)	D(PRICRD)	D(PRIINV)
CointEq1	-0.230231	0.022122	-0.005418
	(0.03860)	(0.01933)	(0.04010)
	[-5.96420]	[1.14449]	[-0.13511]
D(M2(-1))	0.050039	0.004343	0.035301
	(0.09008)	(0.04511)	(0.09358)
	[0.55548]	[0.09629]	[0.37722]
D(M2(-2))	0.067848	0.153899	0.059461
	(0.08893)	(0.04453)	(0.09238)
	[0.76296]	[3.45618]	[0.64363]
D(PRICRD(-1))	0.445869	0.515934	0.367699
	(0.19983)	(0.10006)	(0.20760)
	[2.23121]	[5.15615]	[1.77121]
D(PRICRD(-2))	-0.705332	0.220581	-0.143197
	(0.20837)	(0.10434)	(0.21647)
	[-3.38498]	[2.11412]	[-0.66151]
D(PRIINV(-1))	-0.156690	0.155936	0.404700
	(0.10430)	(0.05223)	(0.10835)
	[-1.50230]	[2.98580]	[3.73502]

D(PRIINV(-2))	-0.048977 (0.11384) [-0.43023]	0.000776 (0.05700) [0.01362]	0.096841 (0.11826) [0.81887]
C	0.150193 (0.02410) [6.23194]	-0.004570 (0.01207) [-0.37867]	0.014986 (0.02504) [0.59855]
Determinant resid covariance (dof adj.)	2.03E-08		
Determinant resid covariance	1.56E-08		
Log likelihood	444.8377		
Akaike information criterion	-8.890164		
Schwarz criterion	-8.159643		

Note: ( ) &[ ] indicate standart errors and t-statistics respectively.

Normalized Cointegrating Coefficients and Error Correction Term are presented in Table 6.

The results of the normalized cointegrating equation are as follows:

$$M2 = 0.75\,PRICRD + 0.253\,PRIINV$$

Table 6: Normalized Cointegrating Coefficients and Error Correction Term

Normalized Equation:	M2	PRICRD	PRIINV
Equation.1	1	-0.750 [-6.851]	-0.253 [-2.174]
Error Correction Term	-0.230 [-5.964]		

Since all variables are in natural logarithm, the coefficients are defined as elasticities. Therefore, private credits elasticity and private investment elasticity are 0.75 and 0.25, respectively; that is, 1 % rise in private credits leads to 0.75 % increase in money supply while 1 % rise in private investment results in 0.25 % increase in money supply, as well.

On the other hand, error correction term is found as -0.23 (between zero & minus one and negative as expected), which is statistically significant (t value is 5.96 in absolute value).

It means that 23 % of deviations in the short term will disappear in every quarter. In other words, long term equilibrium will be met approximately within a year.

It is evident that both private credits and private investment have a positive effect on money supply; therefore, money supply is endogenous in Turkey.

5. CONCLUSION

The emphasis, which has been recently made, regarding the role and use of money (especially after the crises) confirms the perspective of Post-Keynesian Institutionalism. During the process of endogenous money creation, money supply has been provided by the monetary authorities as a requirement of production. This requirement stems from the requests of the institutions, which have a significant important role in the economy. In this regard, money is based on demand for money and credit, and the results deriving from that is one of the features of Post-Keynesian Institutionalists. The results obtained also prove that the process of determination of the money supply in Turkey is consistent with Post-Keynesian Institutionalist literature. The private sector loans and investment are among the most important determinants of the amount of money in Turkey.

Notes

1. Herein, not only the compliance of theories in which Keynes is not sufficient on explaining but also describing the running of economy without being independent on any Classical or Neo-classical view against the Orthodox view are meant.

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