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Review

A survey on the requirements of applying the framework of inflation targeting in Iran's economy

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Harmful impacts of high chronic inflation on economy have always required the governors and monetary officials of countries to eliminate the problem and its negative economic consequences. Different methods and monetary systems have been applied to serve the purpose, namely various kinds of exchange rate targeting and monetary variables improvement rate targeting. Studies have shown that in order for achieving success in executing the framework of inflation targeting, there are prerequisites, satisfying which creates the possibility for the framework to be carried out successfully. The main aim of this article is to find the prerequisites for the successful execution of inflation targeting framework, and study the possibility of the execution of the method in Iran. Using the Agenor and Hoffmaister (1997) model and auto regressive distributed lag (ARDL) method, and with annual data of Iran for the years of 1970-2009, two more restrictions on the way of executing inflation targeting framework in Iran are studied.

Key words: Inflation targeting, ARDL, Iran, prerequisite.

INTRODUCTION

Fighting against inflation is harder in under developed and developing countries than developed countries. This is because developed countries have faced relatively short, passing periods of inflation, many of under developed and developing countries has faced long periods of inflation, or, in other words, permanent inflation. What makes the problem more severe in developing countries (including Iran) is the fact that these countries have been suffering inflation alongside with other problems such as widespread unemployment, low economic growth, etc. and this has made the task of fighting against inflation harder to them, compared to developed countries. Different methods have been used in developing and developed countries in order to control inflation and its harmful economic consequences. Monetary targeting and exchange rate targeting frameworks can be mentioned as such methods. But unsuccessful experience of most countries in applying these two systems showed that these frameworks were not of adequate efficiency in controlling inflation. Therefore, since 1990's, inflation targeting framework is used as a method in controlling inflation. Inflation Targeting is a framework for directing monetary policy, within which policies are applied based on all existing data, and by comparing predicted future inflation with the target assigned to inflation (Dargahi, 2001). Inflation Targeting can actually be introduced as "restricted expedient" in which the target imposes a restriction on Central Bank, while, in explanation and execution, it is of enough flexibility. Therefore, inflation targeting, instead of a new policy, or a formal, inflexible law, is rather a function which composes the elements of different monetary systems (Bernanke, 1999). New Zealand and Canada were the first countries to introduce inflation targeting, as a help to the process of disinflation. The successful experience of the two countries led the same framework to be accepted by England, Sweden, Poland, Australia and Spain. Other countries also have accepted inflation targeting system officially or semiofficially, namely Czech, Brazil, Israel, Chile, Mexico, Turkey, China, Malaysia, Argentina, Indonesia, India, Russia, Albania, etc.

From a general point of view, countries which have accepted Inflation targeting had two features in common: First is their unsuccessful background in overcoming inflation in previous years, and second, the low credit dedicated to their monetary policies. The experience of applying inflation targeting framework has shown that, after applying the method, inflationary rate has been reduced in these countries, and also, policies they used

have come to gain a high credit. In general, the results of the experiences of countries applying inflation targeting framework show that this framework can be an efficient guideline in reducing inflation and controlling prices, but it has complicated dimensions when being executed since applying inflation targeting framework alone does not provide a country to reach to and keep a low inflation rate, meaning that a country, in order to reach to a low stable inflation rate, cannot apply this framework alone, yet, in order for inflation targeting to be executed successfully, requirements are needed to be satisfied.

Hence, this research aims to find the requirements for the successful execution of inflation targeting framework, and study the possibility of the execution of the method in Iran. In order to that, first, through review of related literature and explaining theoretical bases on inflation targeting, requirements and prerequisites for applying inflation targeting framework and also adjustment of it in Iran were studied. Afterwards, by means of Agenor and Hoffmaister Model (Agenor, 1997) using ARDL method, and using annual data for the years of 19970 to 2009, two more restrictions on the way of executing inflation targeting framework in Iran are studied.

INFLATION TARGETING EXPERIENCE IN THE LITERATURE

International studies

Masson et al. (1998) conducted a study to find out, regarding successful experience of execution of inflation targeting framework in some industrial countries, whether this framework can be applied for developing countries suffering from several problems in designing and executing monetary policies? The authors believe that the first step in applying this framework is to establish an independent Central Bank in order to achieve some official goals. The second step is for the officials to avoid targeting any other nominal variable such as wages or official exchange rate. In the following, common features of industrial small or average countries which have applied inflation targeting are presented:

1. Inflation targeting has always been accompanied by a high degree of flexibility in exchange rate.
2. Countries applying inflation targeting have had noticeable independence dedicated to their Central Bank and a fare amount (but not complete) freedom in choosing tools for monetary policies and were the least responsible for satisfying government's budget. They also use short-term rates as an executive and major device and are dependent on largely developed markets for changing longer- term changes and transferring the effects of such changes to general request and inflation.
3. Inflation targets applied in such countries all are of a "forward look", in a way that monetary official are responsible for recompensing predictable inflationary deviations from predefined targets in the future, in a period of one or two years.
4. All these countries use inflation targeting as a tool for creating credit in monetary policies.
5. Above all, inflation targeting has always been introduced when the rate of inflation is low (less than ten percent).

The authors also state that basic prerequisites for adopting inflation targeting do not meet in some of developing countries. For example, for the countries in which annual inflation has been 30 to 40% in some years, even though monetary policy has shown an adaptive behavior, it generally has been for a short time and has had unpredictable effect on the rate of inflation.

In another research, Levin et al. (2004) study the effects of applying inflation targeting on inflationary expectation variations, the sensitivity of inflationary expectations comparing to achieved inflation, inflation inertia, production variations and inflation variations in five industrial countries applying inflation targeting (Australia, Canada, New Zealand, Sweden and England, comparing to seven industrial countries not applying inflation targeting (United States, Japan, Denmark, France, Germany, Italy and Poland) between the years 1994 to 2003, evaluated the area for which inflation targeting has had measurable effects on these variables in the studied sample. The results of their study are stated as:

1. In long term, inflationary expectations in inflation targeting countries were much less sensitive to real inflation increase, comparing to non-targeting countries. In fact, alongside with the studies of Ball and Sheridan (2003), the results of this study show that inflation targeting through revealing a long-term process for inflation rate has had the most chance of stabilizing expectations in long term.
2. Even if unconditional variation of inflation expectations is not little in targeting economies, inflation expectations may still anchor more in inflation targeting countries.
3. The results of calculations show that inflationary parameters of inflation targeting economies are of much less inertia comparing to non-targeting countries.
4. Studied economies with inflation targeting do not show more fluctuations in the field of growth real production, comparing to non-targeting countries. This study shows no low inflationary inertia to the price of more fluctuations in such countries, in inflation targeting countries.

Studies in Iran

Sa'eidy Pour (2001) studied the experience of inflationtargeting in Turkey as a developing country. Turkey has been dealing with increasing debts, high

interest rates, constant high levels of inflation (50% in 1980's and 75% in 1990's), very weak and political instability. But recent economic changes in this country showed that, even in tensioned countries, controlling inflation and alongside with that, increasing productivity and economic growth is possible. The process started by establishing Central Bank of Turkey with the goal of increasing clarity and trust - building. Presenting seasonal reports, annual reports and accounting reports, which evaluate the performance in the past and expectations for the future, the Central Bank increased the credit in monetary policies before public and investors, and decreased inflationary expectations as major factors in causing increase in inflation. The other guideline Turkey used in its monetary policies was to use monetary base. Monetary based policy, alongside with the policy of financial shrinkage and adjustments in the system of banking resulted in economy officials to adjust their inflation expectations based on predictions about general levels of prices which were done in the government's economical programs. Also, by means of applying the policy of Economic Stabilization an Floating Exchange, the transitive relationship between fluctuations in exchange rate and the general level of prices had a significant decrease, and prepared Turkey with the success in achieving inflationary goals of Turkey, which was to gain the goal of reaching a 35% inflation rate for 2002, 20% for 2003 and 12% for 2004. It should be mentioned that, in addition to the requirement for independence of Central Bank and correcting loaning rules of banks and clarifying banking processes as prerequisites of successful application of inflation targeting policy, Central Bank's ability in executing this framework is necessary. Finally, even with prerequisites for executing inflation targeting system being met, the lack of correlation between monetary policies and financial policies due to the high level of governmental debts and incomplete process of correcting banking system, there is still a long way for the Turkey to achieve its final goal that is to stabilize prices. In another study, Dargahi and Atashak (2001), presenting three models with different monetary factors studied prerequisites and clarified policy tools of inflation targeting in Iran. Based on changing monetary factors in these models, we have concluded that regarding high potential of monetary base, supposing that applying inflation targeting is possible, the appropriate tool for adjusting future inflation prediction by its targeted value, is to control monetary base and it elements. Also with evaluating the three models, the following conclusions are reached at:

1. Confirming a long-term relationship for the general level of prices.
2. The presence of not very little inflation inertia in Iran.
3. Slow adjustment of short-term imbalances in general level of prices toward its long-term process.

Total results of this study state that, for the time being, prerequisites and requirements needed for applying inflation targeting framework do not exist completely in the economics of Iran, and therefore, in order for this framework to be executed successfully, requirements and prerequisites need to be satisfied. Also, about the economics of Iran, stating that the effect of inflation on middle-term and long-term financial development is negative, or at least neutral, controlling inflation by means of applying inflation targeting framework, after preparing requirements and prerequisites and studying them in middle term and long term, not only has no negative impact on financial development, but also can prepare the context for positive economic growth.

In another research, Alavi (2003) studied the pattern of monetary transition mechanism in Iran and monetary framework based on inflation targeting in the economics of Iran. The results of this study show that a composite pattern consisting of inflation targeting and monetary targeting is the best pattern of policy-making in the economics of Iran. Alavi (2003) states that the growth of money in each period has a positive relationship with inflation that period and the real exchange rate in previous period, and negative relationship with production gap and the gap between exchange rate expectations for the future and real exchange rate in the past. In the end, the author proposes that the policy of reducing the value of money should be accompanied by the policy of monetary shrinkage, and also, monetary policy should act in an anti-cycle way, so that when facing stagnancy, tension, and in case of requirement proceeding production, it acts detractingly.

Pasha (2004) studied the impacts of applying the framework discussed on anticipated inflation, production growth and its diversity. In general, the results of this study show that introducing and declaring inflationary targets in inflation targeting countries during the period of study had been able to impose a significant decrease in the level of anticipated inflation (comparing the two control groups). The results of inspecting the effects of applying inflation targeting framework on the rate of production growth show that introducing and declaring inflationary targets in inflation targeting countries during the period of study has no significant effect on the rate of real production growth in these countries (in comparison with control group countries). Applying inflation targeting also reduces variability and fluctuation in production growth significantly.

THEORITICAL BASES OF INFLATION TARGETING

International studies

Inflation targeting can be described as a 3-phase process: First, an explicit target is considered for the future inflation. In the second phase, monetary officials make a prediction about inflation, in order to study whether inflation in the future matches the declared target

or not. In case that there is a possibility that future inflation does not match targeted inflation, the third phase becomes necessary to be executed. In this case, attempt is done using new monetary policies in order to eliminate the deviation of predicted future inflation from targeted inflation. The system of inflation targeting is generally separable into two kinds: (1) Strict inflation targeting, and (2) Flexible inflation targeting.

Under gradual monetary policies, the time needed for achieving the target of low inflation is longer than the case in which Central Bank enters only inflation into its loss function, yet it needs to be emphasized that inflation targets explicitly, and production stabilizing targets implicitly are aimed at (Svensson, 1997a, 1999a, 1999b).

Next issue is the way of defining a target, which is in a close correlation with independence of the central bank. The independence of Central bank does not mean its freedom in choosing its goals. It is better for central banks to have instrument independence, even though they are dependent in goals. On the other hand, those targeting central banks in the middle of the process of disinflation consider the independence of central bank in goals and targets as a safety measurement against excessive delays of government in relation with this process (Sterne, 2002). Indeed, in inflation targeting countries, usually the central bank and the government participated in defining the primary target and the final decision was explicitly left up to the government.

The other point is choosing the level of inflationary target. Defining appropriate level of inflation completely depends on the understanding of each country of the definition of stability of the prices. Theoretically, it may be thought that an inflation of 0% is suitable for the target of price stability, but there is an agreement that the existence of a low positive inflation is necessary for the continuity of economic development and can be defined as the state of stability of prices. The existence of low positive inflation prepares the opportunity of introducing new merchandises, new qualities and adjustment of relative prices by the consumer (Alavi, 2003).

After defining the level and the amplitude of the target of inflation, the time horizon for achieving the purposed inflation should be defined. The horizon of targeted inflation depends to some extent in the rate of inflation at the time of starting inflation targeting. Therefore, if the rate of inflation is high at the time of starting inflation targeting, a gradual movement towards the targeted inflation is acceptable. When the initial rate of inflation is different from targeted rate of inflation, with the assumption of breaks in the way of monetary policy affecting inflation, usually, before executing inflation targeting, an executive period of about two years is passed which is equal to the interval of monetary policy for working (Bidabad, 1998).

Another important issue, which should be taken into consideration when designing a system of inflation targeting, is choosing the correct price indicator for the target of inflation. This indicator should be opportune and easy to understand by the public. Choosing a price indicator which is used for calculating the rate of targeted inflation, to some extent, reveals the differences between methods of calculating the indicator on the price for the consumers between different countries and also the relative sensitivity of the rate of inflation to the elements of presentation. In general, it had been a tradition to define the target based on CPI or the indicators based on it, not based on the implied indicator of impure national production, since CPI is easy to understand by public and also spreads in a fast pace. On the other hand, it is revised within long periods of time. In the meantime, many countries which have applied inflation targeting frame, instead of using a general CPI rate of inflation they have used a central CPI rate of inflation. The main purpose of choosing central CPI indicator is to eliminate non-monetary factors from CPI indicator. In practice, this indicator eliminates the effects of the first round of elements from CPI indicator, and takes into consideration the effects of the second round of these elements.

The next important point to be mentioned is that in a system of inflation targeting, the main goal of monetary policy is to achieve an explicit inflation target, and central bank is merely responsible for the changes in the inflation target.

After all points mentioned above were defined for the inflation target, the second phase of inflation targeting is started. The main problem with the method of inflation targeting is the discussion of the amount of inflation to be controlled by the central bank. Due to long, changing intervals in the transitive mechanism of money, the lack of certainty on the transitive mechanism, current conditions of economics, political changes, probable elements in future, etc. controlling inflation inside the interval period of control is vague and imperfect. To solve this problem, Svenson (1999a, 1999b) proposes a valid functional method that is, using a conditional prediction of inflation as a mid-target.

The last important issue to be taken into consideration in a system of inflation targeting is having significant degree of illumination in executing, observation and being responsive for not achieving defined targets. In the framework of inflation targeting, central banks publish detailed seasonal inflation reports to the public regularly. These reports provide an accurate explanation of the goals of monetary policy, numeral values of inflation target and the way it is defined, the way of achieving the inflation target or the reason for any interruption with the target of inflation or significant deviation from the designed target level.

NECESSARY PREREQUISTIES FOR ACQUIRING INFLATION TARGETING FRAMWORK AND ADJUSTMENT OF IT IN IRAN

As mentioned, the mere adoption of inflation targeting does not make it achievable to keep the rate of inflation

at a low level. In order for successful execution of inflation targeting, there are some requirements to be met. This is of more importance in developing countries, since many of these requirements are not met in these countries, and if inflation targeting is applied in these countries before having these requirements, the execution of the framework will fail. In order to evaluate the possibility of the successful execution of inflation targeting in Iran, first we introduce these requirements and then adjusting these prerequisites with the economy of Iran. One of the main requirements for applying inflation targeting framework is that central bank should be independent in achieving its goal, that is, monetary officials should be able to use monetary policy instruments more freely in order to achieve their goals. In other words, instrumental independence of central bank is of importance, not just targeting independence of it. The important point is that, the central bank should act systematically in applying its policies, meaning it should follow enlightened and pre-declared policies for a period of time, and put political strategies aside. Even if the central bank of Iran is provided with instrumental independence, inefficiency of instruments used by this bank is a barrier against successful execution of inflation targeting. Most of monetary policy instruments of central bank of Iran used in recent years have been quality or selective instruments, namely defining allowed extent of credits, defining the least and the last amount of wages and the interest of the shares of banks in different contracts, defining the last amount of loans paid to individuals in any contraction and defining the least interest rate for investments of the banks. Another instrument used by the central bank of Iran is publishing commercial papers. The main reason of introducing this instrument is to provide the needed financial resources (these financial resources are in the form of individual and organizational investments in banks, money dedicated to business and money in the hand of people) and to reduce government, governmental and nongovernmental organizations referring to the banking system. Although publishing commercial papers in recent years have been one of most important instruments of central bank, merely using it cannot reduce the high level of monetary to an appropriate level. Therefore, in order to apply monetary policies, in addition to using the instrument of commercial papers, the central bank needs to use other instruments which have indirect impact and, in the meantime, are not in contrast with social-economic conditions and Islamic system, so that it can execute monetary policies more effectively. Financial discipline of government in inflation targeting means that the government should evaluate the effects of each action before taking it, and, in case these actions are in contrast with controlling inflation at targeted level, the government should abandon them. Otherwise, the economy will become vulnerable to inflation pressures with financial origin.

Another point, which should be taken into consideration in inflation targeting is the efficiency of the targeting country's financial markets. In developing countries for which these markets are very limited, these markets cannot be used by the government to rely on when facing a loss in the budget. For example, in Iran, inappropriate organizational structures, the lack of diversity of financial instruments, the lack of a competitive context, and the lack of precision are the specifications of financial markets which have faced the role and action zone of these markets with serious limitations in satisfying financial needs of economic growth. In addition to that, inefficient management, interferences of the government and bureaucratic controlling and the lack of strong observation mechanisms for observing the function of management, all together have imposed severe disorders to the function of financial markets which prevents the financial markets from improving and having an increasing role in the process of economic development.

Another area of requirement for inflation targeting, which is mostly a factor in its success rather than a prerequisite, is the issue of credit, precision, revelation of policies, and responsibility of monetary officials. Credit is gained through clarifying the function of central bank (meaning the clarification of changes in policies and giving responses and explanations on them), and is necessary for the success of inflation targeting framework. In inflation targeting, the inflationary target is the most important goal, and all people should believe it as the most important target of monetary officials.

If the central bank persuades people of its decision to achieve price stability, there will be no need to fight against inflation anticipations which result in an expensive inflation through wage contracts and the rates of interest.

A comparison of passed values and function values related to the variable of monetary is presented in Table 1, and clearly shows that the central bank of Iran is not loyal to its commitments, and this has resulted in a decrease in the credit of the policies of this bank.

THE MODEL

As can be noticed, conditions for preparing necessary prerequisites in order to execute inflation targeting framework, are not properly prepared, and existing functional and structural restrictions created barriers on the way of applying this framework. Therefore, if economy policy makers are determined to apply the method of inflation targeting, it is necessary for them to eliminate these barriers and restrictions. In the following, other restrictions and barriers against successful execution of inflation targeting framework, in the economy of Iran were studied. In order to model the relationship of general level of prices, a composite pattern based on the studies of Agenor and Hoffmaister (1997) is being used. The

Table 1. Average passed value and rate of cash growth during the Iranian development plan (percent).

Development plan	The average planned during the phase	The average observed during the phase
First development plan (1990-1994)	8.2	25.2
Second development plan (1995-1999)	12.5	25.9
Third development plan (2000-2004)	16.4	28.9
Fourth development plan (2005-2009)	20	29.32

composite pattern used, have the advantages of respecting both monetary and functional aspects of inflation at the same time. In the pattern used by Agenor and Hoffmaister (1997), which is used for the four countries, Chile, Korea, Mexico and Turkey, the relationship between money growths, national currency value decrease, nominal wage increase and inflation were studied. With regard to the fact that this study had been conducted in four countries with economical conditions close to that of Iran, the pattern used here can be used as a suitable model for the inflation in Iran. Therefore, based on the model used by Agenor and Hoffemistar (1997), a vector auto-regression model, including cash volume (based on monetary hypothesis), import commodity price indicator (as a representative of import inflation), and interior impure production indicator (based on the hypothesis of structuralism and formation of inflation in economies with imbalanced structures is used. Based on explanations, the model used in this study is as:

$$LCPI = C + \beta_1.LM2 + \beta_2.LPM + \beta_3.GAP + DUM_2 \quad (1)$$

In which the variables are defined as LCP1: Logarithm of commodity price indicator, and selling services in fixed prices of the basic year of 1997;.LM2: Logarithm of money volume; LPM: Logarithm of import commodity price indicator, based on fixed prices of the basic year of 1997, and GAP: Gap in gross domestic production; DUM2: Dummy variable, one for the years of war and zero otherwise.

Ambiguous variable is chosen based on the criterion of Shwartz-Bitzin, in order to make the evaluations more accurate.

The variables above have entered the model once in their growth amounts and once in logarithms. Since the results were more desirable using logarithms, the model is used as logarithmic.

In order to calculate internal impure production gap, first, potential internal impure production (which shows the last amount of production without inflationary pressure) is calculated by Hodrick – Prescott Filter. Then GAP is calculated using the method proposed by Leo and Adedji (2000):

$$\text{gap} = \frac{hprgdp - rgdp}{rgdp} \quad (2)$$

in which GAP: Internal Impure Production; GapHprgdp: Potential internal impure production, and RGDP: Actual internal impure production.

In order to study the possibility of applying inflation targeting framework, at first, the existence of a long-term correlation for the general level of prices in the economy of Iran was examined. Because it is required for representing a reliable accurate prediction of inflation as one of steps of inflation targeting framework, it is crucial to prove the existence of a long-term relationship between inflation and its contributing factors. In order to do that, using auto regressive distributed lag which is represented as ARDL, the existence of a long-term relationship for general level of prices is proved. The advantage of ARDL over other self-massing methods which consider short-term active interactions between the variables is that there is no need to change the variables into correlated variables of the powers of one and zero.

The data from the period of 1990 to 2009 are used in the study to estimate the model using the software of Micro fit, and using the ARDL method, and the results are presented in Table 2. Based on Table 2, all variables except production gap are statistically meaningful. From Table 2, R-squared=0.99 and F-stat.=27084.0 indicate the high explaining ability of the model. The success of recognition test also shows the validity and correctness of the model. Test A based on Lagrange coefficient does not reject the zero hypothesis of self-correlation (it is more than 0.05). Test B based on RESET test does not reject the correctness of allegiance shape of the model (it is more than 0.05). Test C, based on crookedness and elongation of leftovers, confirms their distribution to be normal, and finally, Test D based on ARCH test does not reject the zero hypothesis of the lack of existence of a inequality variance in leftovers (it is more than 0.05).

The important point here is the coefficient of the inertia of dependant variable, that is, LCPI (1). This coefficient is about 0.83 which shows high inertia of the inflation in the economy of Iran.

This coefficient shows that, for each one percent increase in general level of the prices of previous periods, the general level of prices of this period will increase for 0.83%. In other word, inflation in previous period has a critical role in defining the inflation of this period. In such condition, even if monetary officials and central bank are committed to a certain level of targeted inflation in the future, yet the inflation from previous periods will have an

Table 2. Results from estimating the progressive model.

Autoregressive distributed lag estimates ARDL (1 , 0 , 1 , 0) selected based on Schwarz Bayesian criterion			
Dependent variable is LCPI **47 observation used for estimation from 1970-2009**			
Regressor	**Coefficient**	**Standard error**	**T-Ratio (Prob)**
LCPI(-1)	0.83663	0.041473	20.1731 (0.000)
LM2	0.046275	0.010666	4.3386 (0.000)
LPM	0.48752	0.052705	9.2499 (0.000)
LPM(-1)	-0.37447	0.060611	-6.1784 (0.000)
GAP	0.045509	0.075253	0.60475 (0.549)
C	-0.21741	0.058960	-3.6874 (0.001)
DUM2	0.034722	0.019339	1.7955(0.008)
R-Squared	0.99975	R-Bar-Squared	0.99972
S.E. of Regression	0.035461	F-state F(6,40)	27084 (0.000)
Mean of dependent variable	2.3112	S.D. of dependent variable	2.1079
Residual sum of squares	0.050298	Equation log-likelihood	94.0485
Akaike Info. criterion	87.0485	Schwarz Bayesian criterion	80.5729
DW-statistic	1.8241	Durbin's h-statistics	0.62896 (0.529)

Diagnostic tests		
Test Statistics	**LM Version**	**F Version**
A: Serial correlation	CHSQ(1) = 0.30941(0.578)	F(1,39) = 0.25845 (0.614)
B: Functional form	CHSQ(1) =0.85564 (0.355)	F(1,39) = 0.72317(0.400)
C: Normality	CHSQ(2) =4.2928 (0.117)	Not applicable
D: Heteroscedasticity	CHSQ(1) =0.64044 (0.424)	F(1,45) = 0.62166 (0.435)

A: Lagrange multiplier test of residual serial correlation; B: Ramsey's RESET test using the square of the fitted values; C: Based on a test of skewness and kurtosis of residuals; D: Based on the regression of squared residuals on squared fitted values.

important role in defining future inflation. After the existence of a long-term relationship for general level of prices was confirmed, the long-term relationships between variables of the model are studied. In order to study long-term coefficients, the same model is used. In order to see if the long-term relationship gained from this model is not fake, zero hypothesis tests was done to prove the inexistence of long-term relationship. In order to do this test the difference between one and the sum of coefficients with dependant variable inertia is calculated and divided by the sum of the deviation of the criterion of those coefficients. If the absolute value of t is larger than critical amount introduced by Banerjee et al. (1992), zero hypotheses is rejected and a long-term relationship is accepted. Regarding that absolute value of

$$t = \frac{\sum_{i=1}^{p} (\alpha_i - 1)}{\sum_{i=1}^{p} s_{\alpha_i}} = \frac{0/836 - 1}{0/041} = -4$$

is greater than the amount proposed by Banerjee et al. (1992) at the level of 95% assurance (-3.82) zero hypothesis is rejected and the existence of a long-term relationship between the variables is confirmed.

The result of long-term relationship for general level of prices is presented in Table 3. As observed, all coefficients except production gap are meaningful and match with the theories in being positive or negative.

The coefficient of the variable of LM2 is 0.283, showing that if the logarithm of monetary changes for 1%, the logarithm of the indicator of consumer price in long term changes for 0.283. The coefficient of the variable of LPM is 0.691 which shows that if the logarithm of import commodity price indicator changes for 1%, the logarithm of the indicator of consumer price in long term changes for 0.691.

Ultimately, inspecting the results of the model of correcting errors in Table 4 it is seen that the coefficient of the variable of error correcting is -0.16, meaning that in each period, 16% of the imbalance in the general level of deviates from its long-term balanced process, it takes about six years to return to its balanced process, and this prices is balanced and getting close to its long-term process. It means that if the general level of prices

RESULTS AND POLICY RECOMMENDATIONS

This research had studied requirements of successful

Table 3. The results from estimating long-term model.

Estimated long run coefficients using the ARDL approach **ARDL(1,0,1,0) selected based on Schwarz Bayesian criterion**			
Dependent Variable is LCPI **47 Observations used for estimation from 1970-2009**			
Regressor	**Coefficient**	**Standard error**	**T-Ratio[Prob]**
LM2	0.28325	0.065898	4.2983 (0.000)
LPN	0.69195	0.088566	7.8129 (0.000)
GAP	0.27856	0.45504	0.61217 (0.544)
C	-1.3307	0.34485	-3.8589 (0.000)
DUN2	0.21253	0.11907	1.7849 (0.008)

Table 4.The results from estimating error correction model.

Error correction representation for the selected ARDL model **ARDL (1 , 0 , 1 , 0) selected based on Schwarz Bayesian criterion**			
Dependent Variable is dLCPI **47 observation used for estimation from 1970-2009**			
Regressor	**Coefficient**	**Standard error**	**T-Ratio(Prob)**
dLM2	0.046275	0.010666	4.3386[0.000]
dLPM	0.48752	0.052705	9.2499[0.000]
dGAP	0.045509	0.075253	0.60475[0.549]
dC	- 0.21741	0.058960	-3.6874[0.001]
dDUM2	0.034722	0.019339	1.7955[0.008]
ecm(-1)	- 0.16337	0.041473	-3.9393[0.000]
List of additional temporary variable created			
dLPM=LPM-LPM(-1)	0.99975	R-Bar-Squared	0.99972
dGAP=GAP-GAP(-1)	0.035461	F-state F(6,40)	27084[0.000]
dC=C-C(-1)	2.3112	S.D. of Dependent Variable	2.1079
dDUM2=DUM2-DUM2(-1)	0.050298	Equation Log-likelihood	94.0485
ecm=LCPI-0.28325*LM2	87.0485	Schwarz Bayesian criterion	80.5729
DW-statistic	1.8241	Durbin's h-statistics	0.62896[0.529]
Diagnostic tests			
Test Statistics	LM Version	F Version	
A: Serial correlation	CHSQ(1) = 0.30941 (0.578)	F(1,39) = 0.25845 (0.614)	
B: Functional form	CHSQ(1) =0.85564 (0.355)	F(1,39) = 0.72317 (0.400)	
C: Normality	CHSQ(2) =4.2928 (0.117)	Not applicable	
D: Heteroscedasticity	CHSQ(1) =0.64044 (0.424)	F(1,45) = 0.62166 (0.435)	

A: Lagrange multiplier test of residual serial correlation; B: Ramsey's RESET test using the square of the fitted values; C: Based on a test of skewness and kurtosis of residuals; D: Based on the regression of squared residuals on squared fitted values.

execution of inflation targeting framework and the possibility of its applicability in Iran. Through a review of literature and representing theoretical bases of inflation targeting, the requirements and prerequisites needed for applying inflation targeting framework and also its adaptability to Iran are studied. Then, using the model proposed by Agenor and Hoffmaister (1997) through the method of ARDL, and using annual data of the years of 1970 to 2009 two more restrictions on the way of acquiring inflation targeting framework on the way of the economy of Iran were studied. From among the most important requirements and prerequisites of successful

execution of inflation targeting five are listed:

1. Financial discipline of the government.
2. Avoiding any other determined commitment from central bank in the direction of targeting other variables.
3. Efficient deep financial markets in order to provide general debt.
4. High creditability of policies acquired.

Inspecting the adoptability of these prerequisites with the current economical structure of Iran, it is observed that, for the time being, these prerequisites were not met in this country.

CONCLUSION

In this article, prerequisites needed for successful implementation of inflation targeting framework in Iran was investigated. The main finding of this study is that in Iran's economy, major problems in achieving inflation targets are the dominance of the fiscal policy on the monetary policy, existence of the legal limitations on the central bank independence, use of the inflationary method for the decrease of budget deficits, absence of the enough depth in fiscal markets for financing public debts, indiscipline of the government fiscal, existence of inflation inertia, slow in inflation adjustment speed toward itself longtime processes, pursuit other diplomacy goals such as: Exchange rate targeting, low in credibility of central bank policies.

In order to achieve the prerequisites needed for success implantation of this framework, it is required government sets, with intense, financial discipline in its programs and available correction conspectuses for financial markets. Central bank also should, with respect to intensive goals for the inflation, reflects its efforts in achieving to these goals in the regular and transparence explanation to the public.

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