AN ASSESSMENT OF PRICE ACCELERATING IN IRAN USING FRANKEL PRICE MODEL AND ARDL METHODOLOGY

Hamid Reza Izadi[*]

Abstract: As reaching to economic growth, development and stability in any economy needs and economy. This paper surveys short term and long term effects of effective variables on inflation and economy. This paper surveys short term and long term effects of effective variables on inflation and economy. This paper surveys short term and long term effects of effective variables on inflation and evaluates possibility of commodities price accelerating in Iran.

Key terms: Inflation rate, accelerator, error correction model, liquidity

INTRODUCTION

short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing variations. So, adaption of monetary policies is an important factor at generation of fluctuations on commodities price. [3]

FRANKEL PRICE AACELERATING MODEL

short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing or decreasing is greater than long term fluctuations. Frankel defines two models for specifying price accelerating model against monetary supply variation: price of base products (p_c) and manufacturing products (p_m). Based on Frankel definition, interest rate is variation in expected rate of price minus products' maintenance expenses. So that:

* Faculty Member of Department of Economy, Chabahar Maritime University, Iran, *E-mail: izadi@cmu.ac.ir*

$$i = \overset{\circ m}{p_c} - S_c$$

Public level of the prices has been specified as weighted mean of manufacturing According to Philips equation, we have:

$$\overset{\circ}{p_m} = \pi(d - \bar{y}_m) + \mu$$

Where:

d : Demand logarithm of manufacturing commodities

$\bar{y}_m$: Logarithm of potential product of each unit my

μ : Expected inflation rate?

π : Stable coefficient?

Public level of the prices has been specified as weighted mean of manufacturing of interest rate:

$$d - \bar{y}_m = \delta(p_c - p_m) - \sigma(i - \mu - \bar{r})$$

$\bar{r}$: Stable value

Extra demand is zero on long term period and $d = \bar{y}_m$ and price ofip_c and p_m products are obtained by specified criteria of $\bar{r}_c$ and $\bar{p}_m$.

$$\overset{\circ}{p_m} = \pi[\delta(p_c - p_m) - \sigma(i - \mu - \bar{r})] + \mu$$

Monetary demand simply has been assumed as following:

$$mapp \text{ or } \phi yap\lambda i$$

Where:

i : Interest rate

m : Logarithm of nominal monetary supply

p : Logarithm of public level of prices

y : Logarithm of total product

ϕ : Attraction of monetary demand in comparison to production

λ : Attraction of monetary demand in comparison to interest rate

Public level of the prices has been specified as weighted mean of manufacturing commodities and other commodities.

$$p = ap_m + (1 - a)p_c$$

By substituting above equations, monetary long term functions can be extracted:

$$mapap_m - (1 - a)p_c \text{ or } \phi y - \lambda i$$

$$\bar{m} - a\bar{p}_m - (1 - a)\bar{p}_c = \phi\bar{y} - \lambda i = \phi\bar{y} - \lambda(\bar{r} + \mu)$$

Assuming $m = \bar{m}$ and $y = \bar{y}$, difference of above equations is shown as following:

$$a(p_m - \bar{p}_m) + (1-a)(p_c - \bar{p}_c) = \lambda(i - \mu - \bar{r})$$

If $m = \bar{m}$ and $y = \bar{y}$, by using combination of relations in base commodities, we have:

$$\overset{\circ a}{p_e} = \frac{a}{\lambda}(p_m - \bar{p}_m) + \left(\frac{a}{\lambda}\right)(p_c - \bar{p}_c) + \mu + \bar{r} + s_c$$

Similarly, formula of manufacturing commodities price is obtained:

$$\overset{\circ}{p}_m = \pi\{\delta[(p_c - \bar{p}_c) - (p_m - \bar{p}_m)] - \frac{\sigma}{\lambda}[a(p_m - \bar{p}_m) + (1-a)(p_c - \bar{p}_c)]\} + \mu$$

Above equations act like a matrix:

$$
\begin{bmatrix} \overset{\circ}{p_m} \\ \overset{\circ}{p_m} \end{bmatrix}
=
\begin{bmatrix} -\pi\left(\delta + \sigma\,a/\lambda\right) & \pi(\delta - \sigma\left(1 - a/\lambda\right) \\ a/\lambda & (1 - a/\lambda) \end{bmatrix}
\cdot
\begin{bmatrix} p_m - \bar{p} \\ (p_c - \bar{p}_c) \end{bmatrix}
+
\begin{bmatrix} \mu \\ \mu + \bar{r} + S_m \end{bmatrix}
$$

Specific roots of above matrix are as following:

$$\left[-\pi\left(\delta + \sigma\,a/\lambda\right) + \theta\right]\left[\left(a/\lambda\right) + \theta\right] - \left(a/\lambda\right)\pi\left[\delta - \sigma^{(1-a)}/\lambda\right] = a$$

$$-\theta = \left[-\left(a\,a/2\lambda + \pi\left(\delta + \sigma\,a/\lambda\right)\right)a/2\right]$$

$$\pm\sqrt{\left[-(1-a)/\lambda + \pi\left((\delta + \sigma a)/\lambda\,a\right)\right]^m + \delta\pi/\lambda}$$

Solving of mentioned equation for base and industrial prices is as following:

$$p_m(T) = \bar{p}_m(T) = \exp(-\theta T)\left[p_m(0) - \bar{P}_m(0)\right]; T \to 0, \infty$$

$$p_c(T) - \bar{p}_c(T) = \exp(-\theta T)\left[P_c(0) - \bar{p}_c(0)\right]$$

Variation rate of above formulas can be found as follows:

$$\overset{\circ}{p}_m = -\theta(p_m - \bar{p}_m + \mu)$$

$$\overset{\circ}{p}_c = -\theta(p_c - \bar{p}_c) + \mu + \bar{r} + S_c$$

Note that in the conditions where manufacturing commodities price is so important, θ is indefinite. By using $\overset{\circ}{p}_m$ formula in Arbitrage conditions (efficiency rate is less than expected

short term period, such prices are confronted with accelerating so that short term increasing commodities is:

$$p_c = \overline{p}_m - \frac{1}{\theta}(i - \mu - \overline{r})$$

Public level of the prices has been specified as weighted mean of manufacturing base commodities' price is changed inversely. θ shows slow acceleration of commodities' price balancing and price accelerating phenomena is added. Therefore,

$$\overline{p}_c = \overline{p}_m = \overline{p} = \overline{m} - \phi\overline{y} + \lambda(\overline{r} + \mu)$$

Public level of the prices has been specified as weighted mean of manufacturing products

$$p_m = \overline{m} - \phi\overline{y} + \lambda(\overline{r} + \mu) - \frac{1}{\theta}(i - \mu - \overline{r})$$

Public level of the prices has been specified as weighted mean of manufacturing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing above equations, we have:

$$\Delta i = \Delta \overset{\circ m}{p_c} = -\theta\Delta(p_c - \overline{p}_c) + \Delta\mu = -\theta\Delta p_c + \theta\Delta m + (1 + \theta\lambda)\Delta\mu$$

By using assumption of sensitive i and p_c against monetary variations, we have:

$$(1 - a)\ \Delta p_c a p \Delta m \text{or} \lambda \Delta i$$

Where generally equation of price variations is calculated:

$$\Delta p_a \mp \frac{a + \lambda\theta}{a - a + \lambda\theta}\Delta + \lambda \frac{a + \lambda\theta}{a - a + \lambda\theta}\Delta p$$

Public level of the prices has been specified as weighted mean of manufacturing short term period, such prices are confronted with accelerating so that short term increasing approves prices' accelerating against monetary supply variations because Δm coefficient is greater than the unit and in limit status (where θ moves towards infinite), variations. So, adaption of monetary policies is an important factor at generation of short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing variation.

INTRODUCING VARIABLES OF THE FUNCTION

short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing of money M_2), long term interest rate are being used.

LM2: Natural logarithm of real volume of money with wide definition of money

Where:Natural logarithm of gross domestic product with stable price in 1997

p Natural logarithm of inflation rate

LLIN: Natural logarithm of long term interest rate

RPG: Growth rate of agriculture sector prices

and Growth rate of industry sector prices

Public level of the prices has been specified as weighted mean of manufacturing variations. So, adaption of monetary policies is an important factor at generation of short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing with critical values of the test (in 5% level) are shown in following table:

Table of unit root tests such as Dickey Fouler (ADF) and Philips Prone (PP)

Variable name	ADF	PP	ADF	PP
	Intercept		Trend and Intercept	
LM2	ⅲ *i)*	I (1)	I (1)	I (1)
LIN	ⅲ *i)*	ⅲ *i)*	ⅲ *i)*	I (1)
LGDP7	I (1)	I (1)	I (1)	I (1)
6 LLIN	I (1)	I (1)	I (1)	I (1)

PATTERN ESTIMATION

short term period, such prices are confronted with accelerating so that short term increasing to change monetary demand behavior of : LM_2

$$LIN = C + \sum_{i=a}^{p_1} B_{1i} LM_{2t-i} + \sum_{i=o}^{p_2} B_{2i} LGDP_{t-i} + \sum_{i=o}^{p_3} B_{6i} LLIN_{t-i}$$

Public level of the prices has been specified as weighted mean of manufacturing in following table:

Table of Function Estimation 1971-2011

Variable	Coefficient	Standard Deviation	t-test	Possibility of t-test
LIN(–4)	0.003	O	O	O
LIN(–4)	and	O	–3.29	0.003
LIN(–4)	0.003	O	O	O
LIN(–4)	and	O	–3.29	O
LGDP7	–3.29	O	–3.29	0.003
r	O	O	O	0.003
C	O	2.9	O	0.003
LM2	O	O	O	O

Public level of the prices has been specified as weighted mean of manufacturing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing

Table of Diagnostic Tests and Statistics

Serial correlation	Functional Form	Normality	Heteroscedasticity
O	O	O	O

Public level of the prices has been specified as weighted mean of manufacturing short term period, such prices are confronted with accelerating so that short term increasing with no problem.

Public level of the prices has been specified as weighted mean of manufacturing short term period, such prices are confronted with accelerating so that short term increasing acceleratory towards long term equilibrium for which following results have been yielded:

Table of Error Correction Test

Variable	Coefficient	Standard Deviation	t-test	Possibility of t-test
ι ι	−3.29	O	−3.29	0.003

As coefficient of error correction is estimated of -0.59, so annually half of imbalance of short term period, such prices are confronted with accelerating so that short term increasing is done with a relatively mild acceleratory.

Plot of Cumulative Sum of Recursive Residuals

The straight lines represent critical bounds at 5% significance level
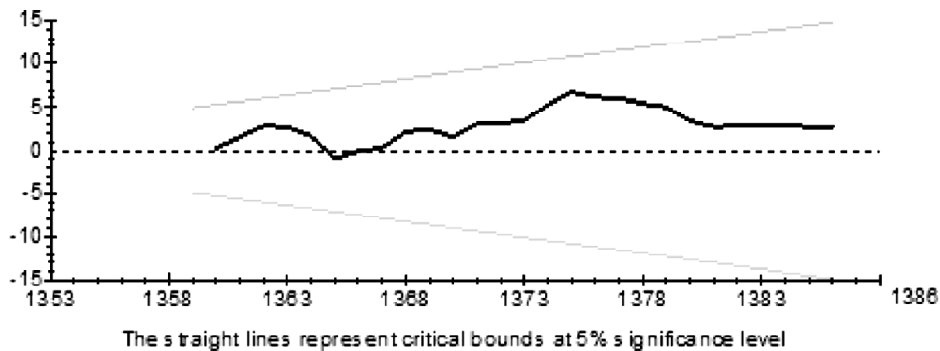
Plot of Cumulative Sum of Squares of Recursive Residuals
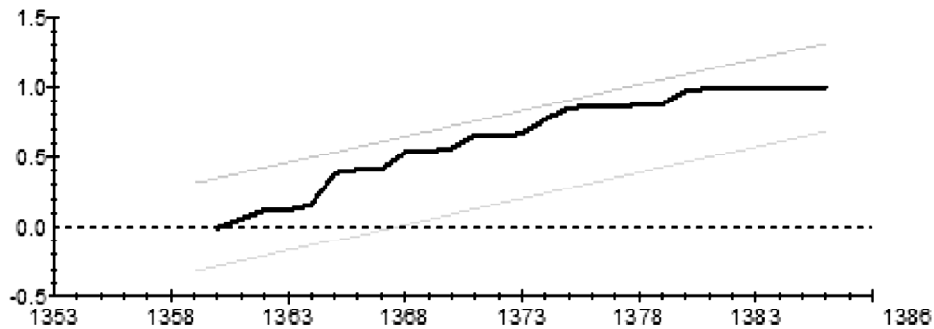
The straight lines represent critical bounds at 5% significance level

As coefficient of error correction is estimated of -0.59, so annually half of imbalance of short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing stability existing is approved.

Table of Function Estimation during a Long Term Period 1971-2011

Variable	Coefficient	Standard Deviation	t-test	Possibility of t-test
LGDP7 6	−3.29	O	−3.29	r
0.003	O	O	O	0.003
C	O	O	O	0.003
LM2	O	O	O	O

Public level of the prices has been specified as weighted mean of manufacturing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing prices is considerable.

Public level of the prices has been specified as weighted mean of manufacturing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing prices changing in a short term period.

Public level of the prices has been specified as weighted mean of manufacturing short term period, such prices are confronted with accelerating so that short term increasing

variations. So, adaption of monetary policies is an important factor at generation of short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing on inflation is sensed from monetary volume during a long term period.

Public level of the prices has been specified as weighted mean of manufacturing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing m m

Table of Function Estimation during a Long Term Period 1971-2011

| Variable	Coefficient	Standard Deviation	t-test	Possibility of t-test
RPG	0.003	0.003	O	r
RPI	r	0.003	O	O
C	−3.29	0.003	and	0.003

Public level of the prices has been specified as weighted mean of manufacturing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing

CONCLUSIONS

short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing short term period, such prices are confronted with accelerating so that short term increasing

short term period, such prices are confronted with accelerating so that short term increasing
short term period, such prices are confronted with accelerating so that short term increasing
short term period, such prices are confronted with accelerating so that short term increasing
short term period, such prices are confronted with accelerating so that short term increasing
short term period, such prices are confronted with accelerating so that short term increasing
short term period, such prices are confronted with accelerating so that short term increasing
short term period, such prices are confronted with accelerating so that short term increasing
short term period, such prices are confronted with accelerating so that short term increasing
short term period, such prices are confronted with accelerating so that short term increasing
short term period, such prices are confronted with accelerating so that short term increasing
short term period, such prices are confronted with accelerating so that short term increasing
themselves can make the market competitive and despite of governmental cross interventions
short term period, such prices are confronted with accelerating so that short term increasing
confronted with danger.

References

Nofarsati. M. (1999), "Unit Root and Collective Summation in Econometrics", Cultural Services Institution Perspectives, Tehran (1985).

Nofarsati. M. (1999), "Unit Root and Collective Summation in Econometrics", Cultural Services Institution Iran by Using ARDL Methodology. *Journal on GSTF Business Review*, **9**(2), (2012).

Izadi. H. R., Izadi, M. and Khandani, H. Review and Analysis of Stock Role in Forming and Integrating of Financial and Monetary Markets and Its Influence on Investment and Economic Development Growth, *International Research Journal of Finance and Economics*, Issue 95, (2012).

Nofarsati. M. (1999), "Unit Root and Collective Summation in Econometrics", Cultural Services Institution *Middle-East Journal of Scientific Research* **9** (5): 687-690, 2011.

Nofarsati. M. (1999), "Unit Root and Collective Summation in Econometrics", Cultural Services Institution (2005).

Tafazzoli. F. , Macro Economy, Theories and Economic Policies, 3rd Edition, 17th Publishing, Ney Publications, Tehran (1987).

Mankio. G. Macro Economy, 1C and 2nd Volumes, Translated by Baradaranshoraka. H. R. and Parsaeian. A, Allameh Tabatabaei University Publications, Tehran (1995).

Nofarsati. M. (1999), "Unit Root and Collective Summation in Econometrics", Cultural Services Institution
(1

Rotemberg J. Julio (1982), "Sticky Prices ih the United States" *Journal of Political Economy*. NO. 90.