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Ayrumyan Artur Karapet

Aspirant of the Chair of "Theory of Economics"

Armenian State University of Economics

INFLATION TARGETING IN THE LONG RUN AS THE MOTIVATOR OF ECONOMIC DEVELOPMENT

***Summary.** The aim of this study was to test the relationship between inflation and GDP in the RA. Before we estimated this relationship we checked the order of integration of the variables. Finally, we can see that there is a negative relationship between inflation and GDP in the RA, at least in the short run, which is consistent with most of the theories that have been developed throughout the years.*

***Key words:** monetary policy, inflation targeting, economic growth, benefit, regression analysis.*

The aim of inflation targeting in the long run of economic development is the state's ability of solving simultaneously such crucial problems as promoting production and employment, decreasing unemployment and the increase of competitiveness of domestic products in foreign markets.

Since sheer numerical target of inflation increases the accountability of central bank, it can decrease the probability that central bank may experience so called time inconsistency trap. Moreover, time inconsistency trap may often be disclosed (confidentially or not) when realizing political pressures on central bank, but inflation targeting has priority to be avert from political debates and the changes of the power. Therefore, the aim of inflation targeting in the long run of economic development is the state's ability of solving simultaneously

such crucial problems as promoting production and employment, decreasing unemployment and the increase of competitiveness of domestic products in foreign markets.

Table 1

The features of inflation targeting regimes

Figure of inflation targeting	full-fledged inflation targeting	Eclectic inflation targeting	inflation targeting lite
Credibility of central bank	Average and high	high	low
Specification of inflation targeting	high	Too low	low
Other aim flexibility	low	high	high

According to table 1 the following three regimes of inflation targeting are implemented internationally:

1. full-fledged inflation targeting
2. eclectic inflation targeting
3. inflation targeting lite

Full-fledged inflation targeting is experienced in developed countries which define objectives for inflation targeting aimed at the interaction between average and high level credibility of society and the inventory of monetary policy.

Eclectic inflation targeting is implemented in developed countries such as the USA, Federal Reserve System ensures low and stable level of inflation in the country aimed at sustainable economic growth and the increase of credibility of the population towards monetary policy. It is worth mentioning that the aims of inflation are not specified but the monetary objectives of inflation are rather flexible.

Inflation targeting lite regime is implemented in such countries which have not clearly defined inflation targeting strategy while the accepted approaches are constantly changing which results in low credibility of monetary policy among the population.

Any choice of inflation targeting is conditioned by the inflation management targets defined by the following central bank of contain country. For example the amount of money can be observed both in narrow and broad contexts (management of CPI etc.).

The assessment of inflation targeting regime has been realized taking into consideration the consumption of food products and their average retail price. The aim of the latter is to find out if there is any relevance between the food product CPI and population living standard, which enables us to clarify the interconnection between inflation targeting and economic development. Accordingly we have identified consumer goods which are consumed by high, average and low income level of population. Particularly,

1. bread
2. sugar
3. beef
4. butter
5. vegetable oil
6. fish

So it can be concluded that there is an interconnection between GDP and above mentioned food products in RA, which can be proved by the following formula:

$$\text{GDP} = c_0 + c_1 \times \text{BrC} + c_2 \times \text{SC} + c_3 \times \text{BC} + c_4 \times \text{ButC} + c_5 \times \text{VoC} + c_6 \times \text{FC} + \varepsilon_t$$

(1)

GDP - GDP per capita,

BrC - bread consumption per capita (AMD),

SC - sugar consumption per capita (AMD),

BC - beef consumption per capita (AMD),

ButC - butter consumption per capita (AMD),

VoC - vegetable oil consumption per capita (AMD),

FC - fish consumption per capita (AMD),

$c_0, c_1, c_2, c_3, c_4, c_5, c_6$ - flexibility coefficient of independent variables

ε_t - random error value.

For the analysis the volume of consumption of annual statistical data of 2010-2017 GDP and food products such as bread, sugar, beef, butter, vegetable oil and fish are observed. As a result of which correlation analysis of least squared method has been realized via Eviews 9 computer program.

Besides, before model assessment it is necessary to smooth the data so all the data become logarithms to avoid getting fake multifactor linear regression.

In the presented econometric model statistical rows are seven, which means that the derived values are almost realistic.

Table 2

The correlation values of among the selected factors¹

	GDP	BRC	SC	BC	BUTC	VOC	FC
GDP	1.000000						
BRC	0.190207	1.000000					
SC	-0.621293	0.156327	1.000000				
BC	0.904562	0.540638	-0.439144	1.000000			
BUTC	0.006799	0.557846	0.127284	0.258479	1.000000		
VOC	0.919107	0.309068	-0.589405	0.908414	-0.148826	1.000000	
FC	0.716395	0.009882	-0.581874	0.725745	0.206425	0.685397	1.000000

¹ Calculated by the author.

Correlation analysis is carried according to which the selected factors and GDP precision level are revealed. Moreover, significant positive and negative interconnection has been revealed among those factors (Table 2).

- 1 percentage point change in bread consumption results in 0.19 percentage point increase in GDP;
- 1 percentage point change in bread consumption results in 0.90 percentage point increase in GDP ;
- 1 percentage point change in butter consumption results in 0.01 percentage point increase in GDP;
- 1 percentage point change in vegetable oil consumption results in 0.91 percentage point increase in GDP;
- 1 percentage point change in fish consumption results in 0.71 percentage point increase in GDP;
- 1 percentage point change in sugar consumption results in 0.62 percentage point increase in GDP.

It is worth to mention that there is a significant positive correlation among the other observed factors as well. Therefore, the results of the correlation analysis confirm that there is a significant interconnection between observed factors and GDP.

We may conduct there is a significant interconnection between CPI and above mentioned food products in RA, which has been confirmed by the following formula:

$$\text{CPI} = c_0 + c_1 \times \text{BrC} + c_2 \times \text{SC} + c_3 \times \text{BC} + c_4 \times \text{ButC} + c_5 \times \text{VoC} + c_6 \times \text{FC} + \varepsilon_t$$

(2)

where,

CPI – consumer price index (coefficient),

BrC –bread consumption per capita (AMD),

SC –sugar consumption per capita (AMD),

BC – ũ` beef consumption per capita (AMD),

ButC – ũ` butter consumption per capita (AMD),

VoC – ũ` vegetable oil consumption per capita (AMD),

FC – ũ` fish consumption per capita (AMD),

$c_0, c_1, c_2, c_3, c_4, c_5, c_6$ – ũ` flexibility coefficient of independent variables

ε_t – ũ` random error value.

For the analysis the volume of consumption of annual statistical data of 2010-2017 CPI and food products such as bread, sugar, beef, butter, vegetable oil and fish are observed. As a result of which correlation analysis of least squared method has been realized via Eviews 9 computer program.

Besides, before model assessment it is necessary to smooth the data so all the data become logarithms to avoid getting fake multifactor linear regression.

In the presented econometric model statistical rows are seven, which means that the derived values are almost realistic.

Table 3

The correlation values of among the selected factors²

	CPI	BRC	SC	BC	BUTC	VOC	FC
CPI	1.000000						
BRC	-0.147022	1.000000					
SC	0.220321	0.156327	1.000000				
BC	-0.794309	0.540638	-0.439144	1.000000			
BUTC	0.134090	0.557846	0.127284	0.258479	1.000000		
VOC	-0.825510	0.309068	-0.589405	0.908414	-0.148826	1.000000	
FC	-0.713696	0.009882	-0.581874	0.725745	0.206425	0.685397	1.000000

² Calculated by the author

Correlation analysis is carried according to which the selected factors and CPI precision level are revealed. Moreover, significant positive and negative interconnection has been revealed among those factors (Table 3).

- 1 percentage point change in bread consumption results in 0.14 percentage point decrease in CPI;
- 1 percentage point change in sugar consumption results in 0.22 percentage point increase in CPI;
- 1 percentage point change in beef consumption results in 0.79 percentage point decrease in CPI;
- 1 percentage point change in butter consumption results in 0.13 percentage point increase in CPI;
- 1 percentage point change in vegetable oil consumption results in 0.82 percentage point decrease in CPI;
- 1 percentage point change in fish consumption results in 0.71 percentage point decrease in CPI;

It is worth to mention that there is a significant positive correlation among the other observed factors as well. Therefore, the results of the correlation analysis confirm that there is a significant interconnection between observed factors and CPI.

There is a significant interconnection between GDP and above mentioned food products in RA, which has been confirmed by the following formula:

$$\text{GDP} = c_0 + c_1 \times \text{BrP} + c_2 \times \text{SP} + c_3 \times \text{BP} + c_4 \times \text{ButP} + c_5 \times \text{VoP} + c_6 \times \text{FP} + \varepsilon t$$

where,

GDP -GDP (AMD),

BrP - average retail price of bread (AMD),

SP - average retail price of sugar (AMD),

BP - average retail price of beef (AMD),

ButP - average retail price of butter (AMD),

VoP - average retail price of vegetable oil(AMD),

FP - average retail price of fish (AMD),

$c_0, c_1, c_2, c_3, c_4, c_5, c_6$ - flexibility coefficient of independent variables

ε_t - random error value.

For the analysis the volume of consumption of annual statistical data of 2010-2017 GDP and food products such as bread, sugar, beef, butter, vegetable oil and fish are observed. As a result of which correlation analysis of least squared method has been realized via Eviews 9 computer program.

Besides, before model assessment it is necessary to smooth the data so all the data become logarithms to avoid getting fake multifactor linear regression.

In the presented econometric model statistical rows are seven, which means that the derived values are almost realistic.

Table 4

The correlation values of among the selected factors³

	GDP	BRP	SP	BP	BUTP	VOP	FP
GDP	1.000000						
BRP	0.725077	1.000000					
	-	-					
SP	0.037843	0.020480	1.000000				
BP	0.620885	0.571339	0.714233	1.000000			
BUTP	0.890383	0.664491	0.226425	0.789960	1.000000		
		-	-				
VOP	0.216214	0.188661	0.053076	0.070977	0.441158	1.000000	
	-					-	
FP	0.074080	0.350759	0.645249	0.625252	0.217967	0.195585	1.000000

³ Calculated by the author.

Correlation analysis is carried according to which the selected factors and CPI precision level are revealed. Moreover, significant positive and negative interconnection has been revealed among those factors (Table 4).

- 1 percentage point change in average retail price of bread results in 0.72 percentage point increase in GDP;
- 1 percentage point change in average retail price of sugar results in 0.03 percentage point decrease in GDP;
- 1 percentage point change in average retail price of beef results in 0.62 percentage point increase in GDP;
- 1 percentage point change in average retail price of butter results in 0.89 percentage point increase in GDP;
- 1 percentage point change in average retail price of vegetable oil results in 0.21 percentage point increase in GDP;
- 1 percentage point change in average retail price of fish results in 0.62 percentage point decrease in GDP.

It is worth to mention that there is a significant positive correlation among the other observed factors as well. Therefore, the results of the correlation analysis confirm that there is a significant interconnection between observed factors and GDP.

There is a significant interconnection between GDP and above mentioned food products in RA, which has been confirmed by the following formula:

$$\text{CPI} = c_0 + c_1 \times \text{BrP} + c_2 \times \text{SP} + c_3 \times \text{BP} + c_4 \times \text{ButP} + c_5 \times \text{VoP} + c_6 \times \text{FP} + \varepsilon \quad (4)$$

where,

CPI - CPI (coefficient),

BrP - average retail price of bread (AMD),

SP - average retail price of sugar (AMD),

BP - average retail price of beef (AMD),

ButP - average retail price of butter (AMD),

VoP - average retail price of vegetable oil (AMD),

FP - average retail price of fish (AMD),

$c_0, c_1, c_2, c_3, c_4, c_5, c_6$ - flexibility coefficient of independent variables,

ε_t - random error value.

For the analysis the volume of consumption of annual statistical data of 2010-2017 CPI and food products such as bread, sugar, beef, butter, vegetable oil and fish are observed. As a result of which correlation analysis of least squared method has been realized via Eviews 9 computer program.

Besides, before model assessment it is necessary to smooth the data so all the data become logarithms to avoid getting fake multifactor linear regression.

In the presented econometric model statistical rows are seven, which means that the derived values are almost realistic.

Table 4

The correlation values of among the selected factors⁴

	CPI	BRP	SP	BP	BUTP	VOP	FP
CPI	1.000000						
BRP	-0.565931	1.000000					
SP	-0.045179	-0.020480	1.000000				
BP	-0.447478	0.571339	0.714233	1.000000			
BUTP	-0.550953	0.664491	0.226425	0.789960	1.000000		
VOP	0.180505	-0.188661	-0.053076	0.070977	0.441158	1.000000	
FP	0.195575	0.350759	0.645249	0.625252	0.217967	-0.195585	1.000000

Correlation analysis is carried according to which the selected factors and CPI precision level are revealed. Moreover, significant positive and negative interconnection has been revealed among those factors (Table 4).

⁴ Calculated by the author.

- 1 percentage point change in average retail price of bread results in 0.56 percentage point decrease in CPI;
- 1 percentage point change in average retail price of sugar results in 0.04 percentage point decrease in CPI;
- 1 percentage point change in average retail price of sugar results in 0.04 percentage point decrease in CPI;
- 1 percentage point change in average retail price of beef results in 0.44 percentage point decrease in CPI;
- 1 percentage point change in average retail price of butter results in 0.55 percentage point decrease in CPI;
- 1 percentage point change in average retail price of vegetable oil results in 0.18 percentage point increase in CPI;
- 1 percentage point change in average retail price of fish results in 0.19 percentage point increase in CPI;

It is worth to mention that there is a significant positive correlation among the other observed factors as well. Therefore, the results of the correlation analysis confirm that there is a significant interconnection between observed factors and CPI.

References

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