

## Exchange Rate Regime, Inflation and Growth in Albania: An Assessment

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**Abstract** This paper examines inflation and nominal exchange rate in Albania during this economical transition period including 1995-1996 until 2010-2011 for Albanian economic system. Several channels through which inflation can affect wellness of Albanian citizen and investigate the relationship on variables of the economy. Beginning from a low base years 1996-97, Albania has quickly reached to high GDP growth and decreasing inflation, in conjunction with serious efforts thought open-market reforms. So the aim is to investigate the impact of consumer price change on exchange rate. How much does the inflation effect on the exchange rate, also we will discuss if inflation has a significant positive or negative impact of exchange stability on real growth and it will analyze costs and benefits of exchange rate stabilization in Albania during these 15 years. In this paper, an important role plays the effect of the exchange rate regime on economic growth. As a whole, this literature is inconclusive mainly because there are theoretical channels highlighting a positive effect of exchange rate stability on growth and others that stress the negative repercussions of exchange rate that has on output expansion. The paper concludes that the inflation in Albania does not have much effect on nominal exchange rate and in other part the association of exchange rate stability with higher real growth remains lousy. Exchange rate has different dependent variable in Albania. This result will be proved and estimated a linear regression model key of macroeconomic variables.

**Key Words:** Exchange rate, inflation, growth, Albania.

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### 1 Introduction

The performance of the Albanian economy during the transition years has surprised many specialist of the field. Beginning from a low base years 1995-96, Albania has quickly reached to high GDP growth and decreasing inflation, in conjunction with serious efforts thought open-market reforms. These achievements however were, precarious but not permanently rearward, by a period of civil war in years 1997-1998. During these years several fraud schemes or pyramid schemes in which much of the people have put their savings collapsed. Since then the Albania economy has again reached an increase in annual growth rate and a decrease in the inflation but the exchange rate with US\$ was increased due devaluation of ALL.

This esteem has been reached in a field where financial sector development is continuous growing but still in early age compare with informal markets that is blowing. Therefore, the role of monetary policy in influencing inflation and growth is inherently limited. Nevertheless, increasing attention is being paid in Albania to the role of monetary policy, and especially to the costs and benefits of introducing new instruments and of moving to more explicit inflation targeting.

### 2 Literature Review

The attitude toward inflation stabilization and exchange rate has changed considerably especially during this last decade. In the early 90s many economists argued that developing and transition economies must adopt hard peg regimes as a credible tool of stabilization. Fear of floating, as described in Calvo (1999), and Calvo and Reinhart (2002), provides a strong argument in favor of such regimes. However, many of successful stories of early 90s developed into currency crises later during the decade or in early 2000's, adding to the troubles of inflation and showing that this sort of stabilization might be only short lived.

Therefore, in a growing number of cases, economies have tried to address stabilization issues by adopting inflation targeting as the remaining choice (previously monetary targeting has been the model, which has been later replaced by exchange rate targeting). Moreover they have pared such regime with a free floating exchange rate regime.

This new regime puts forward important policy questions with regard to exchange rate research. Inflation targeting in its final objective does not change much from other regimes of monetary policy that seek stabilization of the economy by focusing on the price stability, since all regimes adopt price stability as the ultimate goal of their policy. In essence the difference emerges in the choice of the intermediate target, as it changes from exchange rate to money and later to inflation expectations respectively in the exchange rate, monetary and inflation targeting.

Svensson (2000) argues that the 'analysis of inflation targeting [in] a small open economy', relative to a closed-economy baseline, is principally affected by 'the additional channels for the transmission of monetary policy' arising from the exchange rate. He lists three channels: the extra aggregate-demand channel arising from the sensitivity of net trade to the exchange rate; the 'direct' exchange rate channel due to the presence of imported goods in consumer price indices; and finally, the link between the CPI and the exchange rate due to imported intermediate goods. In discussing the implications of openness for inflation targeting in the United Kingdom, we focus on the second and third channels in Svensson's list—namely, the connections between the exchange rate and consumer prices. Importance of these channels is a subject of considerable debate in both theoretical and policy discussions. Theoretical open economy macroeconomic models 'cover the waterfront' on the issue of the importance of exchange rate movements for inflation behavior. At one extreme are versions of the 'Scandinavian' or 'monetary approach' model that predicts a close and mechanical link between exchange rate changes and consumer price inflation (Laffer and Miles, 1982). At the other extreme are certain 'pricing-to-market' models in which price-setting decisions regarding all components of the CPI, including imported goods prices, are determined independently of exchange rate movements, promoting a 'disconnect' of the exchange rate from other macroeconomic variables (Devereux and Engle, 2002). In between these extremes, other models allow for some link between the exchange rate and goods prices, but vary greatly on such issues as the role of domestic factors in import price-setting, the extent and speed of pass through, the relative importance of intermediate and consumer goods imports, and the degree to which the monetary policy reaction function governs the response of the aggregate price level and inflation to an exchange rate depreciation argue that in a well specified model the effects of exchange rate are indirectly included in the policy rule (loss function as well) through its effects on output gap and inflation. Therefore, responding to exchange changes might add instability to monetary policy and undermine its performance. In general this dispute remains unresolved, since the exchange rate issue is not fully addressed in the inflation targeting literature. Most of the literature focuses in the closed economy monetary models and does not provide comparative analysis of the welfare effects or macroeconomic performance when exchange rate is incorporated in the monetary policy rule.

### 3 Exchange Rate Regime, Inflation and Growth

#### 3.1 Exchange regime, inflation and growth

The important view on the relationship between exchange rate regime and inflation is that pegged exchange rate derivate to a lower and more stable inflation. For developing and emerges countries like Albania with partially weak institutional framework ,pegget exchange rate is an important tool in controlling the inflation impact in effecting both ways exchange rate stability and strict effect on monetary growth (Crocket and Goldstein,1976). There is an important literature on the effect of the exchange rate regime on economic growth. On the whole, this literature is inconclusive, mainly because there are theoretical channels highlighting a positive effect of exchange rate stability on growth and others that stress the negative repercussions of exchange rate pegs on output expansion (IMF report, 2010). It can be two possible way to identify exchange rate stability promote higher economic growth. First, the decrease or the elimination of foreign exchange risk can stimulates Foreign Direct Investments (FDI) and thereby the international labor division. Second, credible fixed exchange rate regimes create an environment of macroeconomic stability, thereby reducing the risk premium (amount by which an assets expected rate of return exceeds the risk-free interest rate) drive in the real interest rate. The lower long term interest rate stimulate investments, consumption and growth. Indeed, the Baltic countries, Bulgaria and Bosnia & Herzegovina regard their tight exchange rate arrangements as crucial for macroeconomic stability and therefore growth in their countries (Dornbusch,2001). In the other hand, Milton Friedman( Marvin Goodfriend,2008) has declare that under flexible exchange rates, countries can adjust to real shocks more easily. Under fixed exchange rate regimes, real exchange rate adjustments must be carried out through relative price changes, which in a world of price rigidities is slow and costly. This may create an excessive burden on the economy, leading to low economic growth. As a result, flexible exchange rates would constitute a more appropriate regime to avoid crises and to achieve stable long-term growth in this case last crises is included ,even if maintaining fix exchange rate can be defended in times of crisis, the costs in terms of rising interest rates are high as experienced in Estonia during the 1998 (IMF report, 2010).

##### 3.1.1 Exchange regime, inflation and growth in a small open economy

For small, open economies, pegging the nominal exchange rate helps minimize fluctuations of the domestic price level and thereby contributes to macroeconomic stability. Due to this hypothesis that was proved by the time passing of these

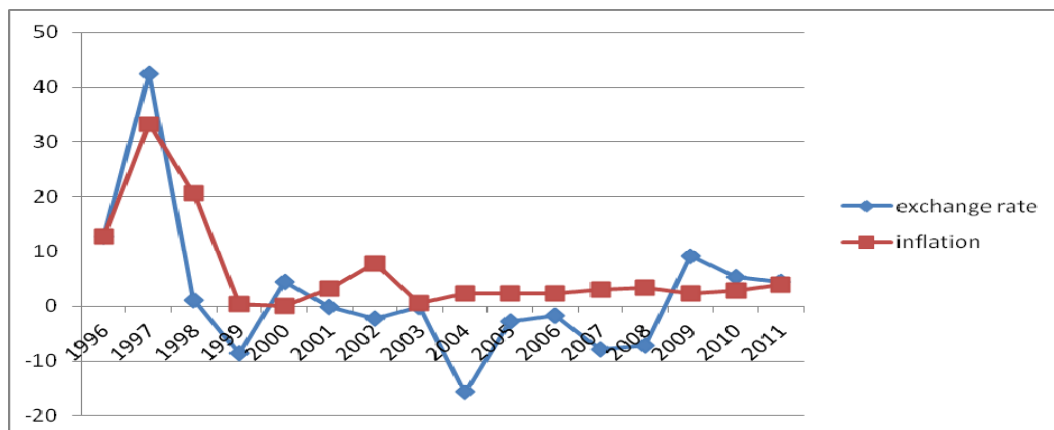
3-4 years . From the data above with a simple line chart we can observe how the inflation goes compare with the nominal exchange rate (USD currency is used for the correlation of inflation and exchange rate,US dollars has been used because the Albanian import and exports payment before 2004-2005 were made in US dollars mainly).

**Table 1 Inflation and exchange rate of US\$**

Year	Inflation rate in %	Exchange rate in %
1996	12.73	12.72
1997	33.18	42.51
1998	20.64	1.14
1999	0.39	-8.59
2000	0.05	4.37
2001	3.11	-0.16
2002	7.77	-2.32
2003	0.48	-0.13
2004	2.28	-15.65
2005	2.37	-2.83
2006	2.37	-1.77
2007	2.93	-7.8
2008	3.36	-7.23
2009	2.23	9.03
2010	2.83	5.18
2011	3.9	4.38

Source: World Bank, <http://databank.worldbank.org>, accessed (December 2011).

**Graph 1 Exchange rate and Inflation 1996-2011**



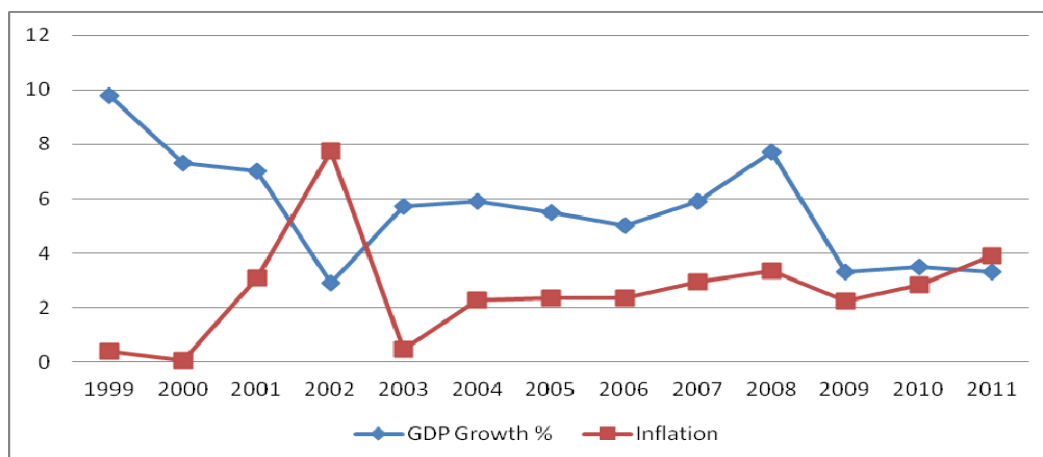
As chart shows, there is a link between exchange rate stability and inflation. This link is seen most clearly during the anarchic period of early 1997, when both the exchange rate and the inflation rate jumped sharply, only to fall rapidly once the security situation was under control. The extent of the correlation is unsurprising in a relatively open economy like Albania where foreign currency circulates widely, both because of high inflow of remittances from Albanian working abroad and from smuggling and contraband. In fact, empirical evidence showed that, for the early transition years (1994-96), the exchange rate and remittances explained much more of the variation in inflation than changes in the money supply does (Haderi and Muco, 1999).

The inflation mainly was stable but how the market and financial development react and are the investment increased during this transition period for Albanian economy?

**Table 2 Inflation and GDP growth**

Year	Inflation in %	GDP growth in %
1999	0.39	9.8
2000	0.05	7.3
2001	3.11	7
2002	7.77	2.9
2003	0.48	5.7
2004	2.28	5.9
2005	2.37	5.5
2006	2.37	5
2007	2.93	5.9
2008	3.36	7.7
2009	2.23	3.3
2010	2.83	3.5
2011	3.91	3.3

Source: World Bank, <http://databank.worldbank.org>, accessed (December 2011).

**Graph 2 Real GDP growth and inflation**

As it seems the inflation and GDP growths are indirectly proportional during 2001-2002 there were two factor that effect mainly from the financial development. Firstly, the banking system was faced with the panic of deposits in March 2002 which comprises the heaviest event for the Albanian financial system. The panic started and was extended mainly in the State Bank now days Raiffeisen Bank, which was on the eve of privatization and occupied the largest part of the banking system, and less in the National Commercial Bank (BKT) as the second bank in the country as far as the size is concerned. The deposit outflow from these banks reached to 12 billion ALL in March and 9.4 billion in ALL in April. In the context the interweaving of the two events that is the offering of the State Bank for privatization and the approval of the law on the deposit insurance at that time, interwoven even with political factor shocked the public confidence in the bank leading to large deposit withdrawal so the deposit crises had consequence even on the real economy since the deposits decreased was associated with:

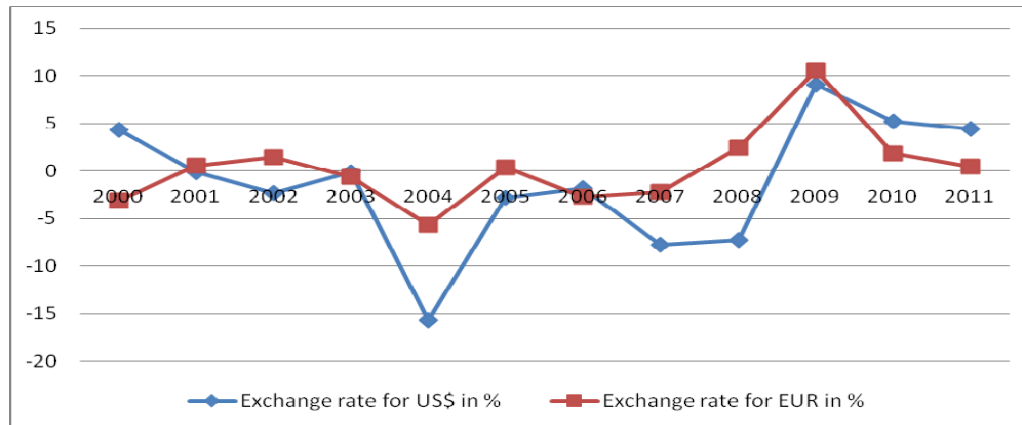
- the increase of currency off banks
- increasing inflationary pressure and creating liquidity problems for second tie banks

The intervention of Bank of Albania (BoA) was in time to prevent the second time recession after 1997 pyramid schemes crises. Under these conditions Bank of Albania having the responsibility of the monetary and supervising authority, through the available instruments intervened by effecting on extinguishing the crises and preventing its consequences as it seems from the graph in the end of 2002 the deposit level was 4.8 billion ALL more than the level foreseen in the monetary program (Cani and Haderi, 2002).

### 3.1.2 Trend in exchange rates

The Albanian economy is mostly represent from two currencies EURO and USD dollar cause the Albanian exports are mainly through Italy, Greece as same time from Turkey import mainly the textiles product and operates with USD dollar. For this reasons the graphic view is going to concentrated in these currencies. The export from years 1998-2004 was 17.3 billion of US\$ and in 2004 23.8 billion of US\$ (World Bank, 2006).

**Graph 3 Exchange rate for US\$ and EUR€ in %**



As the graph shows the exchange rates has three main levels and each of these levels is associated with an economic factor negative or positive firstly the 1997 crises or pyramid schemes. The collapse of pyramid schemes at the beginning of 1997 lead to a general crisis which started as a financial crisis. The country passed through a total anarchy and the financial system was heavily hit. The absence of liquidity in the market provide higher US\$ currency rate also due to an protection word given by US Government for the hitting of socialist system in 1992 and public confidence with US\$ and the main trades with mainly Turkey (Bank of Albania, 1999). That was the first country that Albanian business people moved without visas are done in US\$ so this reason lead to high US\$ exchange rate currency. In 1999 due to the new currency in European market EUR and the US has decrease it importance in Albanian but this was for a short time and also because the remittances of Albanian emigrants were converting in EURO but with not high percentage, 2004-2008 as it seems the USD has a negative exchange rate this event occurs because the Albania economy was attracted from this new currency that was gaining market very fast and the Albanian exports were mainly in European Country but also the US economy was fragile because of terrorist attacks fear. 2008-2011 the oil market was again an positive effect for USD but a negative factor for Albanian real economy increasing the oil price market has lead to an increase of demand from Albania that leads to an increase in exchange rate of USD because mainly the oil trade is done with US\$ in Middle-East Countries (De Paoli, 2009).

As it seems the Euro exchange rate operated robustly with Albanian economy and this can be explains also that is a new currency, in year 2003-2004 it has a decrease in percentage compare with 2002 this because the emigrants working mainly in Greece and Italy the remittances amount in Albania was for the first time increased with the highest amount to 14% of GDP. 2009-2010 the exchange rate of EURO richest the heights point 1EUR - 139.4 ALL in 2009 this is explained mainly through the increase of FDI in Albania also implicated the Albanian government through it investment policy "Albania 1 Euro" that required higher amount of money in the market to invest from Albanian in importing raw materials (IMF, World Bank, 2009 Dushku E, BoA, 2010).

### 3.1.3 Exchange regime and price-level stability as a main objective of macroeconomics policy

*"The Bank of Albania's Core Purpose is to achieve and maintain price stability. Low and steady inflation rates promote long-term efficient allocation of resources in the economy, prevent unexpected allocation of income, and support the financial stability of the economy"* (BoA, 2011).

Bank of Albania has followed the New Neoclassical Synthesis (NNS) or knows as New Keynesian Model is a natural starting point for the consideration of welfare-maximizing monetary arrangements in the international context. This part will be explained through this NNS. The case for flexible exchange rates rate regime in the NNS is the best approached till now asking how inflation should be obtained in an economy with both a monopolistically competitive fix-price sector

and flexible-price sector. For instance, food and energy prices are highly flexible. So the question will be obtained its purpose whether an inflation target should include both fixed and flexible prices. NNS reasoning is clear on this: monetary policy should target the measure of inflation that makes the economy behave as much like a flexible-price economy (Goodfriend, 2008).

For a small open economy like Albania, NNS suggests that monetary policy should target a core index of domestic currency denominated prices of goods and services produced for domestic use by monopolistically competitive firms. Export and import prices should be free to adjust relative to targeted core prices. Import prices could be included in the targeted core index to the extent that domestic value added in imports associated with assembly, transportation, and marketing is a significant part of cost. Otherwise, export and import prices should. The case for a flexible exchange rate gets support from the fact that the exchange rate must float freely to clear the foreign exchange market to enable interest rate policy to freely target domestic core inflation. From the perspective of the NNS framework, a flexible exchange rate is beneficial because it frees interest rate policy to stabilize domestic inflation be free to adjust with foreign exchange rate movements and foreign price movements relative to targeted core prices. In fact this is also the aim of European Central Bank price stability and low inflation but in the other hand is the Federal Reserve Bank (FED) that's main aim has low unemployment rate policy. The BoA has followed the European system as it aspires to enter soon in EU (Goodfriend, 2008).

The case for price stability in the NNS model is as follows. An environment in which the price level is stable must be one in which actual markups equal flexible-price profit maximizing markups. Otherwise, firms would not be content to keep their product prices constant. The fundamental NNS insight is that price level stability makes the economy behave as if firms adjusted their product prices flexibly and continuously to sustain their flexible-price profit-maximizing mark-up (BoA, 2010). Logic tells us that price stability rids the economy of monetary frictions due to price stickiness of the kind long ago identified by Keynes and other economists as a source of employment fluctuations due to fluctuations in aggregate demand. The case for price stability carries over also to a targeted trend rate of inflation. An environment in which inflation is credibly targeted by a central bank is one in which firms raise product prices at the trend rate of inflation because they expect the central bank to sustain an environment in which nominal wage growth in conjunction with productivity growth raise nominal marginal cost at the targeted rate of inflation. Then firms can be confident that raising prices at the targeted trend rate of inflation will keep actual markups stabilized at flexible-price profit-maximizing mark-ups (IMF, 2008; Gali, 2008).

### 3.2 Data and methodology

At the beginning of 1996 some licenses on private banking activity were issued to several foreign banks, paving the way for a real market in that field. It is only recently that the consolidation of the banking system has allowed indirect instruments of monetary control, including the establishment of required reserves, a refinancing window and a liquidity requirement, to replace direct instruments. New private banks have played a key role in encouraging the use of indirect instruments of monetary control and inter-bank competition. In order to measure the relationship and the effect that inflation has on exchange rate, we have used linear regression data equation obtained from the World Bank and BoA. This data gives information from year 1996 until year 2010 and it is conducted on a quarterly basis. From the data above with a simple line chart we can observe how the inflation goes compare with the exchange rate (USD currency is used for the correlation of inflation and exchange rate).

### 3.3 Regression Analysis

The exchange rate channel is perhaps the most promising route for explaining inflationary developments in Albania. Exchange rate stability has in turn been aided by the substantial inflows of remittances throughout the transition period. As chart shows, there is a clear link between exchange rate stability and inflation.

For a more specific result and comparison of inflation and the nominal exchange rate linear regression can be used with its based formula:

$$Y = \alpha + \beta X + \varepsilon$$

Y-in this case is *the exchange rate*

$\alpha$  –Is the coefficient used in the regression model

$\beta$ - Coefficient

X- In this case is *inflation*

$\varepsilon$ - Standard error

R<sup>2</sup> Evaluation

$$\begin{aligned}
 R^2 &= 1 - \text{Residual SS} / \text{Total SS} \quad (\text{general formula for } R^2) \\
 &= 1 - 487.432 / 1191.12 \quad (\text{from data in ANOVA table}) \\
 &= 0.5907 \quad (\text{which equals } R^2 \text{ given in the regression Statistics table})
 \end{aligned}$$

The column labeled F gives the overall F-test of  $H_0: \beta_2 = 0$  and  $\beta_3 = 0$  versus  $H_a$ : at least one of  $\beta_2$  and  $\beta_3$  does not equal zero. Specifically, the *F statistic* is used to test the hypothesis that the variation in the independent variables explains a significant proportion of the variation in the dependent variable. To conduct the F test or analysis of variance, it is compared the calculated or regression value of the F statistic with a critical value from the table of F distribution. The F distribution is defined in terms of 2 df. There are k-1 for the numerator and n-k for the denominator.

F-testing proof:

$$\begin{aligned}
 F &= [\text{Regression SS} / (k-1)] / [\text{Residual SS} / (n-k)] = [703.6980597 / 1] / [487.4313153 / 14] \\
 &= 20.21161244
 \end{aligned}$$

Thus, in that case, the degrees of freedom are  $k-1=2-1=1$  (the number of independent variables in the regression) for the numerator and  $n-k=15-1=14$  for the denominator. To determine the critical value of F that it is founded in the table for the 5 percent level of significance is 0.000503286.

Since the calculated value of the F statistic of 20.21161244 exceeds the critical value of 0.000503286 for the F distribution with 1 and 14 df, the null hypothesis is rejected that there is no relationship between X (exchange rate) and Y (inflation) and the alternative hypothesis is accepted that there is in fact a significant relationship between X and Y.

In order to have a regression between inflation and exchange rate of US\$ the value of "t stat" inflation coefficient must be greater than "t stat intercept". "t stat intercept" is 3.477770 and the "t stat inflation" values is 4.495732.

#### 4. Conclusion

The Albanian economy has moved over the last 14 years from almost complete isolation to relative openness, and is therefore more and more dependent on developments beyond its borders. However, the BoA can continue to play a stabilizing role in the economy through the continuation of prudent monetary policies and occasional exchange rate management to smooth out shocks. Over time, the introduction of formal inflation targeting should be feasible, and would help contribute to stability in the economy.

Albania can be said that is a place where the inflation and exchange rate have 60% of regression. Meaning that the monetary policy for the maintenance of low inflation will incurred in a positive relationship between ALL and US\$.

From using this type of method linear regression the Albania economy has perform a good way for maintaining a low inflation and the valuation price stability and valuation of its currency compare with USD\$ this leads to a direct relationship between inflation and exchange rate in Albania.

#### References

- Calvo G, 1999, -Fear of exchange rate floating, MPRA Paper No. 20338, posted 31. January 2010,  
 Calvo and Reinhart, 2002, -Exchange Rate Regime Fix and Floating Regime, England 2002, Vol.2, Nr 1, pp 16-32,  
 Cani Sh, Haderi S, 2003- "The Albanian Financial System in Transition: Progress or Fragility?" in: Bank of Albania, Bank of Albania in the Second Decade of Transition (Tirana: Bank of Albania  
 Crocket A. and Goldstein M., 1987 -Exchange rate stability, Washington DC 1987, pp 25-77,  
 De Paoli, B, 2009, 'Monetary policy and welfare in a small open economy', Journal of International Economics, Vol. 77, No. 1, pg 11-22,  
 Devereux M. and Engle R, 2002, - 'pricing-to-market' models in which price-setting decisions regarding all components of the CPI, [NBER Working Papers](#) 12215, National Bureau of Economic Research, Inc  
 Dornbusch R., 2001 – Consumption and growth in Balkan region.  
 Dushku E. 2010- Financial Development Economic Growth: The Albanian Case, BoA, pp 5-25,  
 Gali, J., 2008-Monetary Policy, Inflation and the Business Cycle: An introduction to the New Keynesian Framework, Published by Princeton University Press,  
 41 William Street, Princeton, New Jersey 08540, pg 12-15  
 IMF, 2011- Albania: 2011 Article IV Consultation—Staff Report; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for Albania, October 2011, IMF Country Report No. 11/313  
 IMF reports for Albania, 2002-2010

Inflation-World Bank data

Institute of statistics INSTAT-www.instat.al

Kota V. 2009 - Determinants of economic growth in Albania, BoA, vol 12, nr 4

Laffer A. and Miles R., 1982 - "Monetary Approach" mechanical link between exchange rate changes and consumer price inflation (CPI),

Goodfriend M. 2008 - The Case for Price Stability with a Flexible Exchange Rate in the New Neoclassical Synthesis, Cato Journal, Vol. 28, No. 2

Mishkin F. and Savastano M., 2002 - One Decade of Inflation Targeting in the World: What Do We Know and What Do We Need to Know, NBER Working Paper No. 8397, Issued in July 2001 ,NBER Program(s)

Price stability and the Bank of Albania's Core purpose of inflation Annual Report 2010-

Svensson L., 2000 - Inflation targeting in a small open economy', relative to a closed-economy, working paper 6545,

### **Annex**

#### SUMMARY OUTPUT OF REGRESSION

##### *Regression Statistics*

Multiple R	0.76862359
R Square	0.590782223
Adjusted R Square	0.561552381
Standard Error	5.90055273
Observations	16

##### ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	703.6980597	703.6980597	20.21161244	0.000503286
Residual	14	487.4313153	34.81652252		
Total	15	1191.129375			

##### T-Stat (Inflation)

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	5.19899	1.494921	3.477770	0.00369	1.992705	8.405279	1.992705	8.405279
Inflation	0.53077	0.118063	<b>4.495732</b>	0.000503	0.277559	0.784000	0.277559	0.784000