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C O N T E N T S

T B L E S

C H A R T S

Monetary Policy Report for the Third Quarter of 2008

Papers

Exchange rate pass-through in Albania

MONETARY POLICY REPORT FOR THE THIRD QUARTER OF 2008

1. GOVERNOR'S SPEECH

Economic activity during the third quarter the present year has been carried out amidst strained settings in the developed countries' financial markets and economies. The turmoil the financial markets went through is being translated into the deceleration of consumption and investments, which in turn generate the slowdown in economic growth and the upsurge in unemployment in many developed countries. Despite the financial markets' strains and the first signs of global economic slowdown, the Albanian economy has been relatively resilient during the third quarter. According to the available data, economic growth at home has progressed in line with the projections and inflation remains at contained rates and within the Bank of Albania target. In addition, the Albanian banking system is presented sound and stable and adequately capable of carrying out its financial intermediation function. Taking note of the increasing public interest in the stability of the Albanian financial system, the Bank of Albania notes that the economic agents' confidence in our financial institutions and their products has been intact.

Under these global circumstances, the economic developments in the past months have been characterized by a vague situation in the monetary and financial markets and institutions. Global economy has been swept by an upward uncertainty during this period while the financial crisis has been extending further being reflected - through the contraction of lending and the reduction of consumption and investments - in the real economy as well. The end of the third quarter and the first months of the last quarter found the economies of developed countries – United States, Euro zone, England and Japan – in a deep economic crisis, which is anticipated to extend its effects to the following year as well. While the supervisory, monetary and fiscal authorities of affected countries have at a national or international level launched co-ordinated or one-sided emergency measures to cope with its immediate effects, the professional consensus converges to characterizing this crisis as one of the most severe of post-war period.

Sub-standard mortgage loans-related troubles during the past 12 months manifested their real extent during the third quarter. The collapse of one of the largest investment banks, Lehman Brothers, served as a signal for a chain reaction in the financial markets. The following events proved that many innovative financial products were invented and launched into the market skipping all the testing mechanisms and without being entirely acknowledged by the market agents. They were market priced based on a wrong perception of the risk, in particular of the counterparty risk. The awareness for the nature

of this type of risk increased the uncertainty in the financial markets, yielding large disruptions and the virtual cessation of the lending system, which is the backbone of a functional and free market economy. The resetting into operation of the lending system required massive fiscal interventions, high liquidity injections from the central banks, the partial nationalization of some financial institutions and the state guaranteeing of financial institutions' obligations. Although reactive and often uncoordinated, these measures proved successful in revitalizing the financial sector and re-establishing the public trust.

The challenge of coping with the economic growth contraction remains open. Euro area countries have now confirmed the economic growth slowdown and have revised downward the economic growth forecast for the last quarter and the year 2009. GDP continued to drop by 0.2 percent in the third quarter compared with the previous one, as a result of the fall in domestic demand, exports and investments. A similar setting, characterized by an economic decline and increase in unemployment during the quarter, was also noted in the economies of the United States and England. On the other side, the marked decline in food and raw materials' prices has helped to ease the inflationary pressures on these economies. In October, Euro zone inflation marked 3.2 percent from 3.6 percent the previous month. The fall in consumer prices is expected to persist in the following months as well, causing the monetary policy to shift its focus to preventing deflationary situations and boosting economic growth. In their efforts to ease the pressures on the markets and better fine-tune the monetary conditions with the moderated inflationary pressures, the main central banks, including the Federal Reserve, the ECB and the Bank of England, lowered the key interest rate on 8 October 2008. Following that, these banks lowered again their interest rates, the Federal Reserve and the ECB by 50 basis points, while the Bank of England was more aggressive lowering it by 150 basis points.

While developed countries were experiencing hard times, emerging countries have by and large shown resilience to this crisis' consequences. Their immunity attributes to their incomplete financial integration with the developed countries, and to the fact that their economic growth is ever-increasingly being supported by domestic factors. The same setting is also confirmed for neighbouring countries which have not been affected by the first wave of global financial crisis, while their domestic demand remains high.

The performance of the Albanian economy for this quarter has been characterized by features comparable with those of the emerging countries. Albania has shown resilience to the financial markets' turmoil and the pessimism that has accompanied the large economies, some of which Albania's trading partners. The available data show that economic activity for the first nine months of 2008 has been in line with the projections, macroeconomic balances remain stable and the banking system maintains its soundness. Economic activity at home maintained an upward trend during the second quarter of 2008, being evidenced in the high annual increase of turnover indicator. The positive indicators of credit and sentiment indices show that

the same performance was also maintained in the third quarter. Services and the trade sector in particular continued to provide the main contribution to the annual increase of turnover indicator. In addition, the high contribution of construction sector continues to dominate the expansion of production activity at home.

Following the increase in the first half of 2008 beyond the threshold of 4 percent, the annual consumer price increased by 3.0 per cent in the third quarter, which is fully in line with the Bank of Albania's price stability objective. CPI inflation dropped in October to 2.7 percent. The inflation rate drop for this period was fuelled by the moderated aggregate supply-side shocks, in the form of high food, oil and raw materials' prices in the international market. On the other side, more specific indicators of inflationary trends - core inflation for instance - show that macroeconomic balances at home and the monetary conditions have been adequate to warrant an inflation rate close to the Bank of Albania target. The inflationary expectations of economic agents, which have been anchored to around 3 percent, have also provided their positive contribution. These developments attest to the fact that the monetary policy tightening and the strengthening of supervisory measures by the Bank of Albania have been efficient steps in containing inflationary pressures. The assurance of a more contained credit growth rate, the generation of a more proportionate ratio of consumption and savings incentives and the support to demand for ALL-denominated financial assets have proved to be fundamental contributions of the Bank of Albania monetary policy to the country's economic development.

The positive performance of economic sectors and the economy in general has been propelled by the positive rates of domestic demand at home, while the latter has been favoured by the macroeconomic and financial stability of the Albanian economy. The low inflation rates and the anchored inflation expectations have expanded the decision-making horizon of economic agents and have generated a more efficient allocation of financial resources. On the other side, the expansion of the banking system network, the decline in the intermediation costs and the wider range of banking services have provided better support to the economy with credit. Outstanding loans grew by 29 billion leks in the third quarter of 2008, hence maintaining the high annual growth rates of 43 percent. As a share of GDP and the system's assets, loans have recorded further growth to 36 percent and 41 percent, respectively. Foreign currency-denominated loans continue to provide the main contribution to the growth of loans being pushed by the positive interest rate spread of ALL loans to foreign currency loans. Businesses were the main banking loans' users, accounting for 66 percent of loan portfolio growth. The distribution of lending by sectors of economy attests to the fact that the loan portfolio is dominated by lending to the sectors of trade (24.8 percent), construction (14.7 percent) and industry (15.5 percent). The growth rate of households' loan portfolio has reduced to 41.0 percent from 67.7 percent for 2007, owing to the contained annual growth rates of consumer loans. Households' portfolio has shifted to housing loans which accounted for 66 per cent of this portfolio in the third quarter.

Fiscal policy has provided a more uniform contribution during 2008 to buttressing domestic demand. Fiscal balance ended in a deficit during the first months of the present year, mainly as a result of the higher pace in capital expenditures, which is different from the previous two years' performance. Budget expenditures and revenues were met by 98 percent and 94 percent, respectively, of the first nine-month plan, recording high increasing rates. The fiscal policy pursued during the entire year 2008 has observed the targets set in the Medium-term Budget Programme for 2008-2010; consequently, it has not yielded any repressions in economy and performance of prices.

Foreign demand, materialized in the balance of goods and services trade exchanges with abroad, remains at negative levels. Trade deficit accounted for 22.7 percent of the GDP in the third quarter, increasing slightly compared to 21.6 per cent the previous year. Imports grew by 17.2 percent, while exports grew by 21.9 percent. The deepening of trade deficit owes to a large extent to temporary factors and to the deterioration of trading terms as a result of the risen price of energy and food products in the global markets. The import of 'minerals, fuels and energy' accounted for 20.6 percent of total imports. Excluding the imports of this item, the annual growth of the import of goods would have recorded 13.1 percent, while trade deficit as a share of GDP would have been 18.7 percent. However, the deep trade deficit remains an issue which requires special attention in the context of the stable economic development over the long term. While the trade and current account deficit is a normal phenomenon in emerging economies, the generation of stable foreign currency resources in the form of exports and foreign direct investment needs to be a priority of economic development policies. In addition, the structure of exports by trading partners attests to a high concentration of exports with EU countries (76.33 percent); hence, exposing our economy to oscillations of demand in these countries.

Demand for money in economy has maintained average rates in the third quarter – around 14 percent – being mainly pushed by private sector lending. The growth of M3 aggregate mainly attributes to foreign currency-denominated deposits which recorded an annual growth of 26 percent in September. Narrower money aggregates, M2 and money base, recorded in September an annual increase of 9.6 percent and 4.8 percent, respectively.

The financial markets have not been affected by the turmoil in global or European financial markets. This performance does not only attribute to the low integration level with the European markets and to the orientation of the Albanian banking system to financing the internal activity, but also to the prudent Bank of Albania supervision. Being the monetary and supervisory authority of the banking system, the Bank of Albania has been particularly prudent in terms of meeting the system's liquidity needs and constantly monitoring the performance of banks' financial indicators. To this purpose, it has conducted open market operations and injected liquidity for longer periods and beyond the banks' anticipated needs.

The interest rates in the interbank market increased in September and October, a period during which the change in the required reserve was met. On the other side, the interest rate fluctuations in the interbank market also relate to the features characterizing this market, such as the asymmetric market distribution and the hesitation to trade in maturities of longer than one week. Interbank market fluctuations have not been transmitted to other markets, which in contrast have been characterized by decrease in interest rates. T-bills' and bonds' yields in the primary market have confirmed their downward trend which commenced in the second half of the present year. The spread between maturities has narrowed, reflecting the improved market agents' expectations of inflation, the enhanced confidence in these debt instruments and the monetary policy efficiency. Following the considerable increase of deposits' interest rates in summer as a result of banks' aggressive market strategies, they dropped in September once the offers terminated. Interest rates of ALL loans have shown a downward tendency in 2008. Combined with the increase of ALL deposits' interest rates, this performance attests to the improvement of the intermediation rate. The spread between ALL and EUR interest rates has shown a narrowing trend since the latter have increased in line with the performance of foreign currencies' interest rates in the international markets. Despite the historical developments in foreign currency loans, lending in currencies other than in lek has been contained in the last two months as a result of the strengthening of supervisory measures.

Concluding, I would like to underline that the period to follow will present major challenges to the Albanian economy and the decision-makers.

Economic crisis recovery at a global level requires time. Revitalization of domestic demand, the increase in employment and the development of the economy at the level of its production capacities remain constant challenges to the political authorities. Its solution will materialize through the resetting of a number of internal and external economic balances, the re-arrangement of many supervisory institutions and the re-design of the regulatory framework on many financial market segments and on their managers' incentives systems.

The Albanian economy has not been affected by the financial turmoil or recession that has gripped the developed countries. The Albanian banking system has not invested in any toxic securities of developed markets, while its internal activity remains sound. The ongoing supervision conducted by the central Bank of Albania is an additional safety element that this system will continue to operate within normal parameters. Safeguarding financial stability is a permanent objective of the Bank of Albania, which carries out its mission through its traditional role as the lender of last resort and through the constant improvement of legal and institutional infrastructure of the interbank market functioning. The fiscal authorities' commitment to facing any plausible events in this context completes the safety network package.

In an economic context, Albania may be faced with more difficult conditions in terms of financing the economic activity. The fall in foreign demand, remittances and foreign direct investments may yield a lower growth rate during

2009; however, their levels will remain at acceptable figures. In addition to the not too high integration levels with the global markets, the resilience shown by the Albanian economy to foreign shocks attributes to the economic stability at home and to the anchored expectations of economic agents. Therefore, the Bank of Albania believes that the decision-makers' attention will focus on maintaining macroeconomic balances. Fiscal policy should be anchored to a fiscal rule, which will orient fiscal performance and set clear quantitative criteria for coping with the various shocks. The Bank of Albania will continue to have as its key priority the preservation of price stability in economy, close to our 3 percent target of annual consumer price increase. We believe this is the best contribution monetary policy could provide in terms of economic growth and wellbeing in the medium and long run.

2. DEVELOPMENTS IN WORLD ECONOMY

2.1 ECONOMIC GROWTH AND MACROECONOMIC BALANCES

World economy was characterized by unfavourable economic developments in the third quarter of 2008, generated by the financial crisis which hit the United States and developed European countries. The inflationary pressures have been high, although recently they have eased as a result of the sharp fall in prices. Economic growth in emerging countries has continued to offset the economic slowdown in developed countries; however, the further deepening of the financial crisis has led to uncertain projections for the global economic growth. The latter has also been reflected in the accelerated fall of sentiment indices.

Table 1 Some main macroeconomic indicators

	GDP annual growth*	Unemployment rate	Inflation rate	
	Q3-08	September-08	Q3-08	October-08
USA	0.8	6.5[1]	5.3	4.9[3]
Euro zone	0.7	7.5	3.8	3.2
Germany	0.8	7.1	3.1	2.5
Greece	3.1	7.5[2]	4.7	4.0
Italy	-0.9	6.8[2]	4.0	3.6
Japan	-0.1	4.0	2.2	2.1[3]

Source: OECD, Eurostat, ECB Statistics Pocket Book
** Preliminary data for GDP growth.*
[1] Rate for October 2008.
[2] Rate for June 2008.
[3] Rate for September 2008.

EURO ZONE ECONOMY

Euro zone economic growth continued to maintain downward rates in the third quarter, contracting by 0.2 basis points compared with the previous quarter. In annual terms, however, it has grown by 0.7 basis points. The economic decline stems from the turbulences in the U.S. financial markets that were transmitted to the European economy and to the cessation of temporary factors, which had provided considerable contribution in the first

quarter. The decline in economic growth was mainly materialized in the drop of investments during the third quarter.

Euro zone inflation maintained the downward trend which began in mid-2008 after reaching the record rate. In September, the CPI increased to 3.6 percent in annual terms, while in October it fell to 3.2 percent. The fall in raw materials' prices and the drop of demand is expected to affect the further fall in prices, to later stabilize in 2009.

U.S. ECONOMY

U.S. economy continues to endure the negative effects generated by the liquidity problems in the interbank market and the repricing of real estates' financial assets, which have already provided their impact on the real economy as well. According to preliminary assessments, GDP contracted by 0.3 basis points in the third quarter of 2008 compared with the previous quarter[1]. The fall in consumption spending and aggregate investments as a result of reduced income and housing-related investments provided the main contribution to this performance. In the meantime, Federal Government's budget expenditure and the net exports maintained their positive contribution to GDP growth. Though the U.S. dollar appreciated against some main foreign currencies[2], imports maintained their downward trend, although at more moderate rates. Processing and construction industries have had a reduced activity which in turn has resulted in drop of production capacities. With respect to services sector, financial and business services have deteriorated sharply to below the average for 2008. Unemployment rate recorded 6.0 percent from 5.3 percent the previous quarter. Although the inflation rate marked about 5.3 percent in the third quarter, in September it manifested a downward trend accompanied with the improved inflationary expectations[3].

MAIN EMERGING COUNTRIES' ECONOMIES

Economic growth rates of main emerging countries' economies, BRICs[4], have been more moderate in the second quarter of the year 2008 compared with the average growth of 2007. Domestic demand and investments continued to provide the main contribution to GDP growth. Foreign demand has slightly reduced as a result of economic growth slowdown and the moderation of aggregate demand's growth rates in developed countries. Nonetheless, the high prices of oil and raw materials did not affect the deterioration of current account and the contribution of net exports to the GDP growth of mainly exporting countries[5].

In August, inflation rate in China and Brazil fell to 4.9 percent and 6.2 percent, respectively[6], while it remained unchanged in Russia relative to July (15 percent). In India, the rapid credit growth and the second round effects of raw materials' price rise triggered the increase of the inflation rate in August. In order to fuel the growth of domestic demand and under the conditions of a decreasing inflation rate, China decided to pursue an easy monetary policy. Meanwhile, the concern over possible inflationary spirals in Brazil and

the high inflation rate in Russia and India, propelled the relevant monetary authorities to raise the key interest rates.

Table 2 Economic indicators for the BRICs

Country	2007	2008[1]	2009	2007	2008 (6M1)[2]	2009[1]
			Inflation			Real economic growth
Brazil	3.6	5.7	5.1	5.4	6.1	3.5
China	4.8	6.4	4.3	11.9	10.4	9.3
India	6.4	7.9	6.7	9.3	8.4	6.9
Russia	9.0	14.0	12.0	8.1	8.0	5.5

Source: IMF, OECD and Statistical Institutes
[1]Assessment.
[2] Economic growth for the first half of 2008.

SOME REGIONAL COUNTRIES' ECONOMIES

The turbulences in the interbank market and the highly volatile financial markets[7] provided their impact on the economic growth in Italy. In the second quarter of 2008, the GDP contracted by 0.3 percent compared with the previous quarter. This performance attributes to the drop in aggregate exports and the fall in investments, mainly in construction sector. Domestic demand weakened further while services sector contracted. The weak foreign and domestic demand and the uncertainty over the short-term economic developments led to drop in production capacities. Periodical surveys on the economic situation attest to the fall in business and consumer sentiment. Industrial production reduced during the period June to September, wherein construction was mostly affected. Meanwhile, inflation rate seems to have followed a downward tendency[8].

In annual terms, GDP in Greece grew by 3.5 percent in the second quarter. Aggregate demand grew by 1.8 percent relative to the same quarter the previous year, fuelled by the increased consumer expenditures. Investments continue to maintain a downward trend[9], reflecting the uncertainties in the national and international markets and the fall in business sentiment. Aggregate exports, which increased by 4.6 percent in annual terms for this quarter, continue to mirror the stability in foreign demand. Meanwhile, imports maintained their downward trend which commenced in the first quarter of the present year. During the last two months, inflation rate has shifted downward[10]; however, it still remains high. In July and August, unemployment rate has been lower than the average recorded in the first half of 2008.

Turkish economic growth recorded an annual growth of 1.9 percent in the second quarter, which is the lowest figure for the last six years. In the first quarter the present year, economic growth recorded 6.7 percent. This overwhelming decline attributes to the reduced demand, which grew by 1.5 percent compared with 7.1 percent the previous quarter. Inflation marked 11.7 percent in the third quarter from 10.3 percent in the previous quarter. The financial sector has been relatively resilient to the first wave of the global financial crisis.

Economic activity in the Republic of Macedonia maintained its growing rates in the second quarter as well. Demand in the domestic market remained high and private investments recorded considerable increase as in the first quarter. Inflation decreased in the third quarter to 8.4 percent, while for the nine-month period inflation rate marked 9.3 percent compared to 1.4 percent the previous year. The first wave of the global financial crisis has not affected Macedonia as well.

Table 3 Economic indicators for the regional countries

Country	GDP annual growth	Annual inflation	Unemployment rate	Trade balance (as a share of GDP)	Current account (as a share of GDP)
	Q2:08	Q3:08	Q3:08	Q2:08	Q2:08
Italy	-0.1	4.0	6.8[1]	-1.5	-3.7
Greece	3.5	4.8	7.1[2]	-5.9	-16.0
Macedonia	6.5	8.4	33.8[1]	-26.3	-11.1
Serbia	6.2	10.7	12.6[3]	-23.2	-20.7
Croatia	3.4	7.4	12.4	-27.4	-10.6
Turkey	1.9	11.7	9.4[3]	-7.4	-6.1

Source: Statistical Institutes, EuroStat, OECD Statistics

[1] *Second quarter of 2008.*

[2] *Data for August.*

[3] *Data for July.*

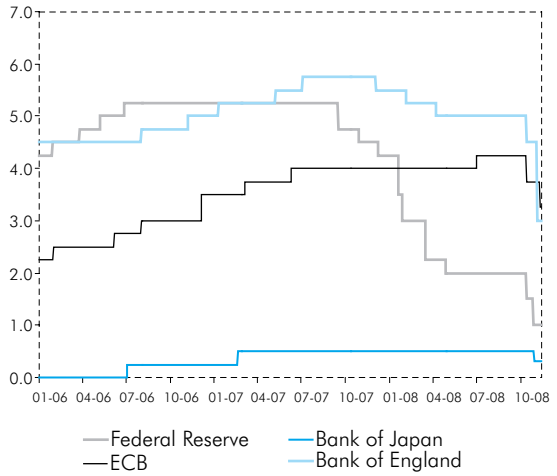
2.2 MONETARY POLICIES, FINANCIAL MARKETS AND THE EXCHANGE RATE

The month of October marked a truly historical event in central banking, when six major central banks cut the key interest rate in a coordinated move. The Federal Reserve, the ECB, Sveriges Riksbank, the Bank of England, the Bank of Canada and the Swiss National Bank announced the reduction in policy interest rates. The Bank of Japan expressed its strong support of these policy actions.

The ECB has cut the key interest rate twice by 50 basis points to 3.25 percent – the lowest rate in the last two years. This move aimed at coping with the financial turbulences that have hit the global economy. Given the current situation, the ECB may continue to cut the key interest rate in the future.

In order to stimulate the financial markets and the monetary market and to spur aggregate demand, the Federal Open Market Committee cut the key interest rate twice in October and November from 2.0 to 1.0 percent. Additionally, the Bank of England has cut the key interest rate twice by 50 and 150 basis points each to 3.0 percent. This decision was taken as a result of the marked deterioration in the outlook for economic activity at home and abroad

Chart 1 Key interest rate performance



Source: Central banks

and the sharp fall in commodity prices. The Bank of Japan cut its key interest rate (overnight interest rate in the interbank market) to 0.3 percent from 0.5 percent, the first rate reduction for more than seven years. The central bank decided to lower the target rate as a result of the global financial crisis and following the cut of the interest rates by the major central banks.

Global financial markets entered a new phase in September. The U.S. largest financial institutions were faced again with liquidity problems. The two largest U.S. mortgage lenders recorded considerable losses in their balance sheets, which brought about the U.S. government intervention through a bailout plan. The dramatic collapse of Lehman Brothers, one of the largest U.S. investment banks, has shaken confidence among the main market agents and has constrained the absorption of capital and funds. This deteriorated outlook was reflected in the high intermediation rates in the money markets, where the main indicators - Eonia[11], Euribor[12] and Libor[13] recorded high values. The main central banks coordinated their actions focusing on the provision of liquidity and the reduction in key interest rates, in order to moderate the cost of money for financial institutions. Easing measures were taken in terms of expanding the instruments accepted for the insurance of funds in the banking system and restoring confidence in order to avoid the deepening and spread of this crisis.

EUR and USD LIBOR reached high rates, reflecting the money market turbulences in the United States, Euro zone and England. The spread between quarterly USD LIBOR and the OIS[14] was high in September and early October. At the same time, EONIA interest rate in the Euro zone interbank market reached 4.5 percent in early October, which is 0.21 percentage points more than the key interest rate. EURIBOR rates of one-week, one-month and one-year maturity term increased during this period. Following the cut in the key interest rate by the Fed[15], the ECB[16] and the Bank of England, money market interest rates have reduced; however, their spreads remain high as a result of the vague financial situation in the interbank markets.

Bond yields in Europe and the United States have shown significant fluctuations and a downward trend. This performance may relate to the shift of investors from the stock markets to these markets, fearing the persistence of the financial crisis and its implications for the real economy. The main indices in the stock markets - Dow Jones Euro Stoxx, S&P and Nikkei – experienced considerable fall and high oscillations. The losses were significant and they affected the titles of both financial and non-financial companies, transmitting the investors' uncertainty over the banks' situation and the financial system's stability.

In October, the foreign currency markets showed a depreciating behaviour of the euro, being also followed with high oscillations. The euro has depreciated against the main currencies, mainly owing to the appreciation of the U.S. dollar and the Japanese yen. The orientation of foreign direct investments to the U.S. market and the growing demand for the U.S. dollar in the money market, as a result of its use in financing the large financial

institutions, seem to be the main reasons behind the appreciation of the U.S. dollar against the euro. As of end September, the euro exchange rate against the U.S. dollar was 1.43 or 4.4 percent more than the average of 2007. In early November, the EUR/USD exchange rate dropped to 1.29 or 6.1 percent below this average.

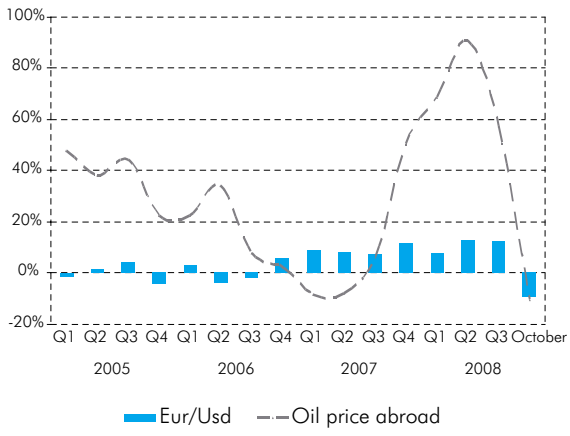
Chart 2 EUR/USD exchange rate in the international market

Source: Federal Reserve

2.3 OIL AND RAW MATERIALS' PRICES

The oil international market was highly affected by the extremely volatile financial markets. Starting from July, oil price has gained a downward tendency during the third quarter of 2008. In October, average oil price fell by 26 percent in monthly terms, reaching close to the price of September 2007. The appreciation of the U.S. dollar during the recent months has helped to reduce the oil price per barrel; however, it has represented only one of the several main factors. The negative projections for the economic growth in advanced economies have undermined confidence in the markets and weakened aggregate demand from these countries. In addition to the fall in industrial production indices, OECD member countries and the United States experienced the reduction in the demand for oil. Emerging countries continue to maintain high growth rates of the demand for oil, although at more moderate rates relative to the second quarter the present year.

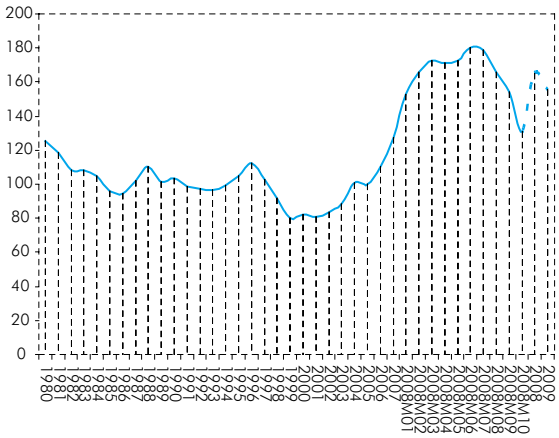
Chart 3 Annual change of oil price in Albania and abroad and EUR/USD exchange rate



Source: Eurostat, Bloomberg

Global oil supply has also suffered from several negative shocks. The disruptions in the supplying network in the Caucasian region, the fall in the oil production from OPEC countries[17], the unfavourable weather conditions in the Gulf of Mexico and the low inventories in the United States and OECD countries have been the key supply-side pressures. High production has been reported in Russia and the North Sea; however, insufficient to mount the supply.

Chart 4 Basic commodity price index over the years



Source: IMF

According to the IMF food price index, the annual price rise has maintained its downward tendency starting from mid-year. For the first time in the last two years, in October the food price index reached negative values – about 4.8 percent lower than the previous year. Wheat price has fallen sharply

by 26.9 percent compared with the previous year, owing to the favourable weather conditions. The fall in food prices is expected to persist in 2009 as well. In addition, the drop in metal prices, reflecting the weakening of industrial indicators, attributes to the slowing demand growth providing evidence for the reduction in economic activity.

Box 1 The financial crisis and the possible implications for global economy

The crisis the financial system has been faced with during the past year has entered a new phase in the last months. The collapse of Lehman Brothers, one of the largest U.S. investment banks, and the intervention of the U.S. Government to the capital of many financial institutions at home altered the perception of market agents of the real situation the financial institutions were in. The uncertainty prevailing during this period turned into a crisis of confidence of market agents in their counterparties. In order to prevent systemic events, the major central banks and governments took coordinated and duly measures. The financial crisis originated from the U.S. subprime mortgage crisis, which initially deepened and hit the U.S. market to later sweep the main global markets.

Since its inception, the crisis affected the increase in the financing cost and the tightening of exchanges in the financial markets. The liquidity problems in the banking market deepened and hit the institutions, which were mainly financed in the money market. The deterioration of the crisis shackled the assets' value of financial institutions by reducing their liquidity. The change in the time and quality structure that had occurred in the banks' balance sheets during the recent years triggered the spread of the crisis to vital sectors of the economy. The value of shares in the stock market has dropped significantly, hence deteriorating the absorption of new business capital. Banks' inclination to reducing their leverage[18] through the sale of assets reduced their value and impacted their availability to extend loans. The shackled confidence was reflected in consumers, who finding themselves in front of a strained financial setting, lowered their consumption and reduced their demand for new loans.

The consequences of the financial turbulences have now been transmitted to the real economy as well. Advanced economies were confronted with both demand and supply-side negative shocks. The continuous fall in the financial assets' value and the house prices affected the households' purchasing and investing power. The two main channels to have been affected are the wealth and the credit channel. The first conditions directly the households' purchasing power, while the second reduces the collateral value in the borrowing process. Consequently, consumer spending, which has the main share in these countries' GDP, has followed a downward tendency. Being faced with tightened lending conditions, investments in the form of machinery or buildings began to follow a downward tendency. The indicators on industrial production and activity in processing industry have been contracting in the months to follow. The present economic setting has led to increased market uncertainty, which along with the production capacity constraints, compels firms to reduce the number of employed people. Labour market conditions in developed countries like the United States, the EU and Japan have weakened during the year 2008[19]. The weakening effect of both demand and supply reduces the economic growth rates and the short-term projections in developed countries.

The slow economic growth rates in emerging countries follow the same pace of economic growth in advanced economies, although at more moderate rates. Compared to the previous financial crises, the basic economic indicators of emerging countries are more sound and hence the shocks to the economy have been less pronounced. However, the risk level largely depends on the respective macroeconomic balances of each country. The countries facing a plausible higher risk are characterized by a high current account deficit, internal and external debt in foreign currency and the accelerated growth of consumer loans at levels which may threaten the financial stability. Despite the fall of prices in the international markets and the reduced demand in advanced economies, exporting countries of raw materials and oil remain less affected. The internal markets of some of the Asian countries and other emerging countries have attracted foreign investors, hence creating capital and financial outflows[20]. In addition, the constraints in obtaining new loans and foreign investors' hesitation to risking in emerging countries have reduced the foreign direct investments.

According to the latest projections, global economic growth is expected to moderate in 2009.

Table 4 Economic growth in some global regions (annual percentage)

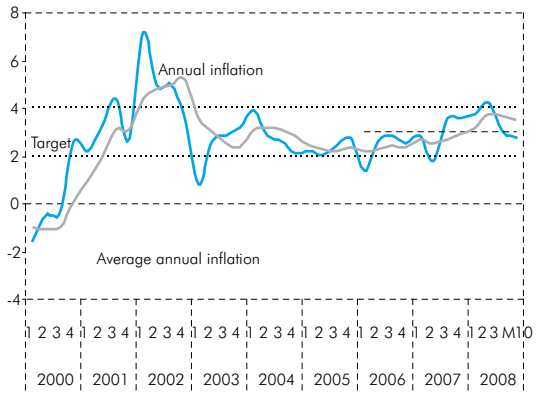
	Real GDP growth			
	2006	2007	2008	2009
Advanced economies	3	2.6	1.5	0.5
Newly industrialized Asian economies	9.2	9.3	7.7	7.1
South America and Mexico	5.4	5.6	4.6	3.1
Emerging economies in Europe	6.7	5.7	4.5	3.4
Middle East	5.7	5.9	6.4	5.9

Source: IMF, World Economic Outlook, October 2008

3. PRICE STABILITY AND BANK OF ALBANIA OBJECTIVE

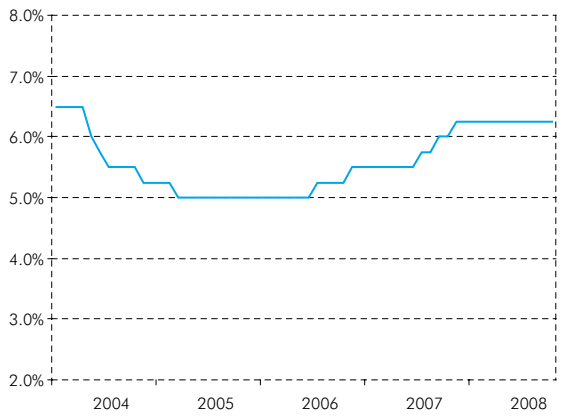
Average annual inflation marked 3.0 percent in the third quarter of 2008, which is fully in line with the Bank of Albania's price stability objective. CPI inflation has marked lower increasing rates during the last three months - 2.5, 2.7 and 2.8 percent. The fall in primary commodity prices in the global market and the presence of domestic supply of agricultural products in the market have helped to ease the inflationary pressures at home in the recent months. The "moderation" of supply-side shocks and the macroeconomic stability at home caused the inflation rate to stabilize within the target band. In addition, the tightening monetary conditions and the strengthening of banking supervision lending standards have led to a more contained growth of credit to the private sector. Budget expenditure have been carried out in line with the projections; hence, not signalling strong inflationary pressures for the following period.

Chart 5 Annual inflation by quarters (in percent)



Source: INSTAT and Bank of Albania estimations

Chart 6 Key interest rate of the Bank of Albania



Source: Bank of Albania

Monetary policy has been oriented towards meeting the Bank of Albania main target – maintaining price stability. Monetary policy-related decisions aim at keeping inflation close to the 3.0 percent target and they are based on the expectations and assessments for its forecast in the medium and long run. The return of inflation within the target band reflects the monetary conditions' adequacy as a result of the monetary policy pursued by the Bank of Albania. The raise of the key interest rate in November 2007 by 0.25 percentage points – the third raise in a year – preceded the inflationary pressures of the first half of the year and the need to firm up the inflationary expectations. The decision was taken in light of the presence of inflationary pressures, which could push the prices above the upper 3.0 percent target of the Bank of Albania. The pressures stemmed from the strong domestic demand, shoved by the rapid growth of credit to the private sector and the announced wage rise, and the projections for the rise in raw materials' prices. These factors could provide a direct impact on domestic prices and on inflation expectations in the form of second round effects.

In the meantime, given the rebalancing of inflation risks and assessing that the supply-side pressures would be temporary, the Bank of Albania has kept the key interest rate unchanged during the year 2008. In addition, the stable growth of money base in the third quarter has allowed the meeting of the Bank of Albania quantitative objectives, without exerting any pressures on the market interest rates and on the exchange rate. In late September, which represents the performance criterion month for meeting the PRGF/EFF agreement with the IMF, the net international reserve totalled 1,231 million euros or 88 million euros above the target level. In addition, net domestic assets amounted to 76 billion leks or 18 billion leks below the target level.

Table 5 Meeting of quantitative objectives[21]

	March-08	June-08	July-08	August-08	September-08	October-08*
Net International Reserve of the Bank of Albania (in million euros)						
Objective	1,088	1,122	1,129	1,136	1,143	1,157
Current	1,127	1,137	1,163	1,219	1,231	1,208
Difference (C-Obj)	39	15	34	83	88	88
Net Domestic Assets of the Bank of Albania (in billion leks)						
Objective	88	96	95	94	93	91
Current	74	81	82	76	75	91
Difference (C-Obj)	-13.8	-15.7	-13	-18	-18	0
Net Domestic Credit to the Government (in billion leks)[22]						
Objective	377	383	381	378	376	- -
Current	367	375	374	369	369	- -
Difference (C-Obj)	-10	-8	-7	-9	-7	- -

** Operational data for October.*
Source: Bank of Albania

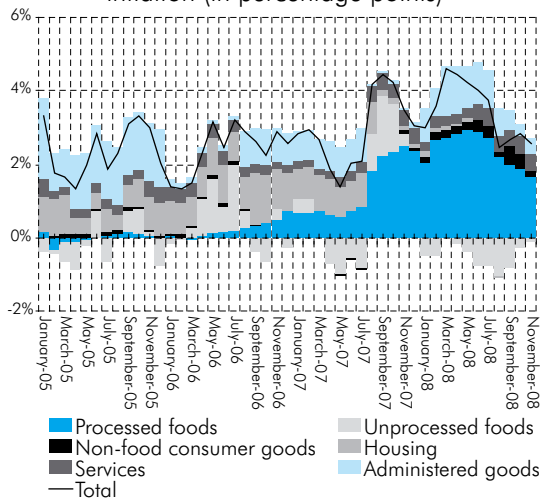
3.1 PERFORMANCE OF MAIN ITEMS IN CONSUMER BASKET

Prices of goods and services have been falling for almost all main items in the last quarter. Prices of foods, in particular of processed ones, and the prices of 'non-food consumer goods' (wherein oil is included) and 'administered goods' accounted for about 80 percent of headline inflation. The fall in food prices - shoved by the performance of domestic agricultural production and grain prices in the global market - and the decrease in fuel prices triggered the shift in the annual inflation rate. The shift of these goods' prices compared with several previous months, directly or indirectly, altered the strong rising tendency of prices during August 2007 - July 2008.

Starting from August the previous year, 'processed foods' have provided the main contribution to the increase of inflation. The upward trend of this item's annual inflation, shown since 2006, was more pronounced in the first seven months of the present year. The high annual inflation rates during this period exceeded drastically this item's historical average. Starting from August, processed foods' inflation has been constantly falling as a result of the partial termination of the bread price rise effect and of a more favourable performance of prices in the global market (most goods in this item are imported from abroad). Consequently, its contribution to the annual inflation reduced in the last quarter to about 2 percentage points, from 2.7 percentage points earlier this year.

Prices of 'unprocessed foods'[23] experienced the largest fall. Their prices are mainly affected by the performance of domestic agricultural production of fruit and vegetables. The growth of domestic agricultural supply, owing to the favourable weather conditions, is assessed to have led to the fall of these prices. From January to July 2008, this item's prices have offset the high prices recorded in almost all other basket items.

Chart 7 Contribution of items to annual inflation (in percentage points)



Source: INSTAT and Bank of Albania estimations

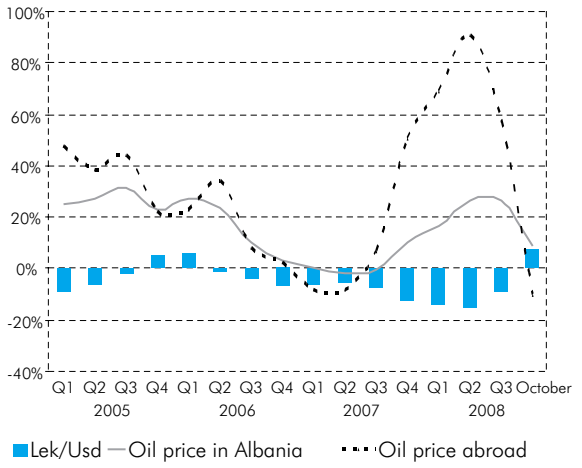
	Q3-07	Q4-07	Q1-08	Q2-08	Q3-08	M10-08
Processed foods (pp)	1.6	2.4	2.5	2.9	2.3	1.9
Bread and grain (pp)	0.7	1.2	1.4	1.7	1.3	1.1
Alcohol and tobacco (pp)	0.2	0.3	0.1	0.1	0.0	0.1
Unprocessed foods (pp)	0.6	0.5	-0.3	-0.4	-0.9	-0.3
Fruit* (pp)	0.2	0.4	0.5	0.3	-0.1	-0.1
Vegetables*(pp)	0.3	-0.1	-0.9	-0.2	-1.3	-0.8
Services (pp)	0.4	0.4	0.3	0.3	0.5	0.5
Administered prices (pp)	0.4	0.1	0.3	0.7	0.8	0.3
Fuels and energy (pp)	0.2	0.0	0.2	0.6	0.6	0.7
Housing (pp)	0.6	0.2	0.1	0.1	0.0	0.0
Non-food consumer goods	0.0	0.1	0.2	0.3	0.3	0.4
Durable consumer goods (pp)	0.0	-0.1	0.0	0.0	0.0	0.0
Consumer Price Index (y-o-y, %)	3.6	3.6	3.7	4.2	3.0	2.8

Source: INSTAT and Bank of Albania estimations

Table 6 Contribution of items to annual inflation (in percentage points)

Annual inflation rates of 'services' have also shown an upward tendency in the first ten months of 2008. In the last two months in particular, this item's annual inflation has experienced an accelerated increase - 5.7 and 6.2 percent. To a large extent, inflation of services is generated by the prices of 'hotels and restaurants'. From June to October 2008, their inflation increased by an average of 3.7 percent relative to the same period the previous year. This year's price increase has been pushed by the high costs, arising from the price rise in foods, fuel and energy, and in particular by the growing demand for these services.

Chart 8 Annual change of oil price in Albania and abroad and of ALL/USD exchange rate

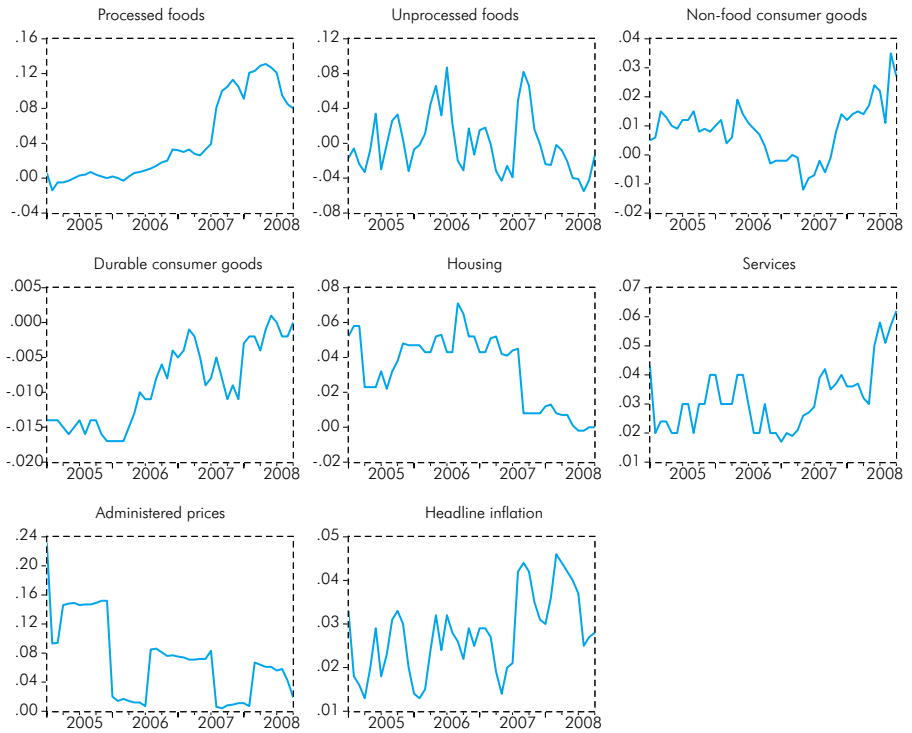


Source: INSTAT, Bank of Albania, Bloomberg

Inflation of 'administered prices' has averaged 4-7 percent following the increase of energy price by 23.7 percent in March the present year, providing an average contribution by 1 percent to the increase of inflation rate. In October, this contribution reduced to 0.3 percent, owing mainly to the price fall in 'communication'. The latter's annual inflation dropped by 19.2 percent in October.

Among other items' inflation, worth to note is the downward tendency of the oil price which began during the month of August. Price volatility has been less pronounced; consequently, the average oil price change in Albania compared to the change in the

Chart 9 Annual inflation by items of goods and services (in percent)



Source: INSTAT and Bank of Albania estimations

international markets, in monthly or yearly terms, has been more moderate. Starting from the first quarter of the present year, the internal market has reflected the change in the oil price per barrel in the international market with a one-month lag.

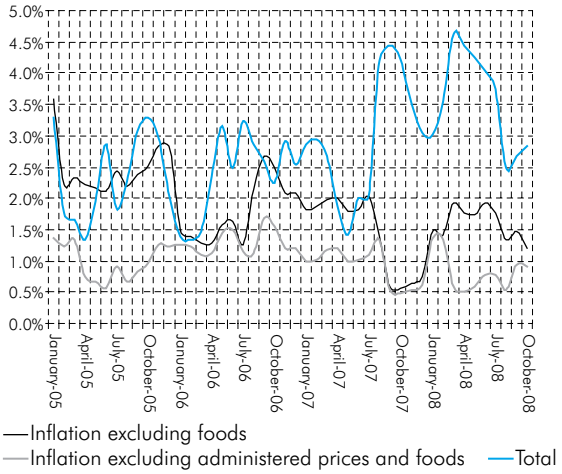
The appreciation of the U.S. dollar against the lek during September-October has slightly decelerated the fall in the oil price per litre in the retail market. Although the average price rose further in the third quarter, it peaked in July. The price index of 'service to personal vehicles' has followed a similar downward trend to the oil price in the market, while 'services' price index continued to increase during the period July to October in monthly terms.

The fall in the oil price - along with the fall in food prices - is expected to provide a positive contribution to the long-term public expectations of inflation; hence creating a non-inflationary environment under the conditions when economic growth continues to preserve satisfactory rates.

3.2 INFLATIONARY TRENDS BASED ON OTHER INFLATION MEASURES

Alternative measures of net inflation[24] help to identify the (separate and concurrent) impact that food and administered goods' prices have on the overall price level. Net inflation, excluding foods, marked 1.2 percent in October, which is the lowest during the entire year. The other two net inflation measures, where one excludes the administered prices' effect and the other oil and food prices, attest to the annual decrease of this indicator during the last 10 months. In the third quarter, it reached 1 percent[25].

Chart 10 Annual rates of different net inflation measures



Source: INSTAT and Bank of Albania estimations

The tendency of stable inflation developments is also confirmed by the performance of core inflation[26], which has followed a downward trend during August-October 2008. The deceleration of inflationary pressures was more pronounced in October, a period during which annual core inflation[27] marked 3 percent - the lowest rate since the early 2008. The strong price rise in sub-items having a relatively high share in the consumer basket, and which until last fall were stable and almost 'intact' from foreign developments, provided a considerable impact on the core inflation for 2008 as well. Referring only to 'bread and grain' sub-item, the core inflation rate would have reduced by about 1.7 percentage points in the first 10 months if this measure excluded this sub-item's effect. Despite the positive signals for the reduced intensity of inflationary pressures at home, the average of the two main annual core inflation measures for the period January to October 2008 resulted 2.7 percent or 1.1 percentage points higher than the last three years'.

Table 7 Different measures of annual core inflation by price (in percent)[28]

CPI annual change	Share in the CPI basket (in %)	2006	2007	2008				10-month average
				Q1	Q2	Q3	October	
Total (CPI)	100.0	2.4	2.9	3.7	4.2	3.0	2.8	3.6
a. Core (permanent exclusion)	77.0	1.1	1.7	3.7	4.1	3.7	3.0	3.7
- Core (permanent exclusion, excluding 'bread and grain')	70.0	1.1	1.1	1.9	2	2.2	1.7	2.0
b. Core (trimmed mean, 30%)	Average for 2008 60.0	0.7	0.7	1.7	1.8	1.6	1.8	1.7
By price								
Traded	62.0	1.7	2.3	3.9	4.1	2.4	2.3	3.4
Non-traded	38.0	3.7	3.9	3.4	4.4	4	3.6	3.9
- Non-traded, excluding administered prices	33.0	3	2.7	2.9	2.8	3	2.1	2.7

Source: INSTAT and Bank of Albania estimations

Annual inflation of traded goods marked 2.3 percent in October, hence maintaining the downward tendency of the third quarter. The performance of prices in this sector attests to the further moderation of inflationary pressures originating from outside the Albanian economy compared to the first semester of the present year. Notwithstanding the latest positive developments in traded consumer goods, average inflation for the first 10-month period resulted about 1.5 percentage points higher than its average in the last three years. This sector's inflation mirrored the overall price rise in the global markets of primary food and non-food commodities. The favourable behaviour of the lek exchange rate against the foreign currencies has halted the full transmission of the global price rise chain effects to headline inflation at home.

Annual inflation in the sector of non-traded consumer goods and services remains high, owing to the impact of administrative decisions on the price rise of energy (March 2008) and of public transportation services (June 2008). Other additional effects[29] have also kept the prices in this sector relatively high in the last two months. Excluding the administrative decisions' effects, inflation of non-traded goods and services would reflect more accurately the domestic demand-side pressures. In October it marked 2.1 percent, while for the first 10-month period it was 2.7 percent - close to its historical level.

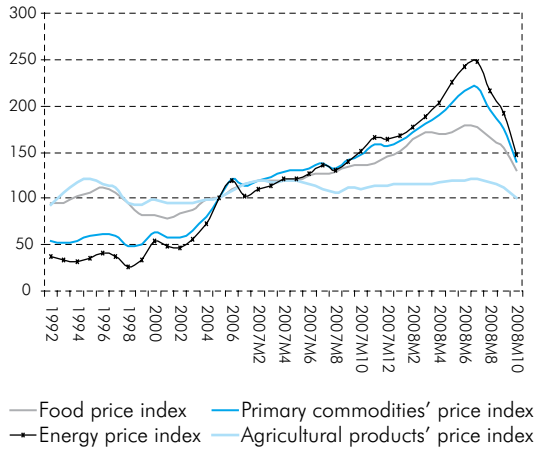
The recent months' performance shows that core inflation and inflation by sectors have maintained more contained increasing rates compared to the first half of 2008. Their stable rates at around 2-3 percent reflect the balance of demand and supply factors and the adequate anchoring of inflationary expectations to the Bank of Albania medium-term inflation objective.

Box 2 Food and oil prices and second round effects

Primary commodities' prices have risen dramatically in the recent years. This phenomenon has affected energy, food and agricultural products. The price rise in primary commodities triggered the increase of inflation at a global level.

Being a small and open economy, Albania was affected by this shock on the supply-side. The level at which the rise in primary commodities' prices was transmitted to prices at home may be assessed by comparing their unusual hike during 2007:M9 – 2008:M10 with its average rise during 2000-2007. Bread and grain prices rose by 26 percent during a year period, while their historical average was 1 percent; vegetable oil prices rose by 13 percent compared to their average rise of -1 percent; prices of dairy products rose by 7 percent compared to the 0 percent historical change; oil price rose by 10 percent compared to its average historical rise of 5 percent.

Chart 11 Performance of primary commodities' indices, by item



Source: IMF, Commodity Prices

The price rise in primary commodities deteriorates the living standard by increasing consumer and business cost. In addition, it may affect directly or indirectly the cost of living and the inflation rate. The price rise in energy, bread, oil and in other goods that are purchased by the household consumer implies the increase of the cost of living and of the inflation rate. This is the direct effect. However, the higher price of energy may also have an indirect effect on the inflation rate, as in the case when companies transmit the increase of their production cost to the final price of consumer goods or services that use energy as an input; or as in the case when the employees respond to the increase of the cost of living by demanding a rise in wages. In front of this situation of increased prices, the public may form expectations for the increase of inflation in the long run, hence generating strong inflationary pressures. The indirect effects of the price rise in primary commodities on the inflation rate are otherwise referred to as second round effects. The inflation rate manifests both first and second round effects.

Economic theory and empirical evidence show that high inflation harms economic growth. Consequently, the main contribution monetary policy could provide to one country's long-term economic growth is price stability. Economic theory suggests that monetary policy should not respond to short-term effects such as the price rise in primary commodities, given that their inflationary effects are transitory and inflation may very soon return to the prior crisis rates. However, in case these supply-side shocks materialize in the form of second round effects, long-term pressures on inflation would generate an overall rise in prices which undoubtedly requires the monetary policy intervention. The decision-makers' challenge is to allow the adjustments in relative prices in order to prevent unwelcome second round effects.

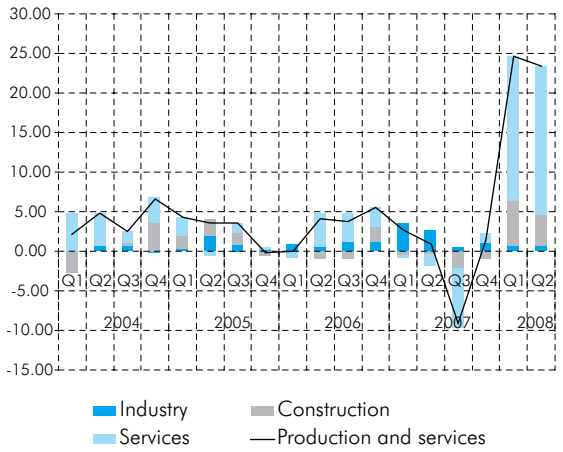
During the 12-month period (2007:Q3-2008:Q2), annual inflation in Albania reached the upper tolerance band of the Bank of Albania's 3 percent inflation target. The high inflation rates during this period were mainly generated by the price rise of primary commodities in the global market. The Bank of Albania has been cautious of the developments in the primary commodities' prices and it has been assessing the materialization of second round effects. Based on economic and monetary analyses, the central bank has assessed that the price volatilities generated by supply-side shocks would be temporary and would not harm the inflation rate over the medium and long term. Public expectations of future inflation remain anchored to around the Bank of Albania target. In addition, the crisis of food and primary commodities' prices was a global one and individual central banks could not do much to solve it.

4. MACROECONOMIC DEVELOPMENTS AND THEIR IMPACT ON INFLATION

4.1 ECONOMIC GROWTH AND AGGREGATE DEMAND

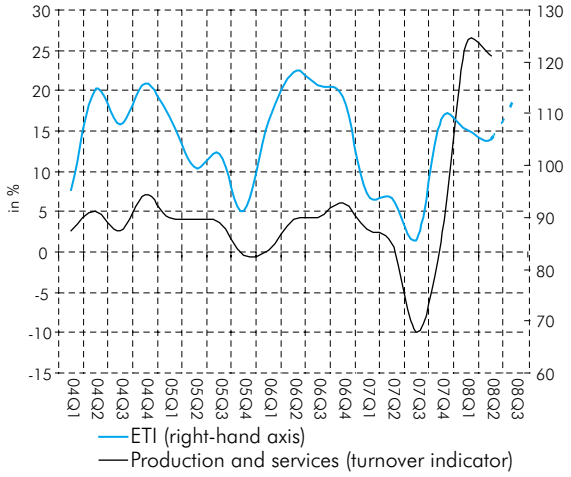
The Albanian economy has been characterized by positive developments during the year 2008, mainly driven by the high domestic demand. Economic activity at home continued to maintain an upward trend during the second quarter of 2008. The annual increase of deflated turnover indicator was among the highest in the last five years - about 24 percent. This performance of economic sectors and the economy in general is believed to have been propelled by the positive rates of domestic demand at home. Services and the trade sector in particular continued to provide the main contribution to the annual increase of turnover indicator in the second quarter of the present year. In addition, the high contribution of construction sector continues to dominate the expansion of production activity at home.

Chart 12 Contribution of economic sectors over the years



Source: INSTAT and Bank of Albania estimations

Chart 13 Economic Tendency Indicator (right-hand axis) and annual change of turnover indicator (left-hand axis)



Source: INSTAT and Bank of Albania

The latest data obtained from business and consumer sentiment surveys attest to the persistence of economic growth rates during the third quarter of 2008 as well. The Economic Tendency Indicator (ETI)[30] recorded a quarterly increase by 8 percentage points in the third quarter, although several individual sectors have shown signs of weakening.

Box 3 Short-term statistics – indicators that allow the assessment of economic activity

The analysis of economic activity at home is mainly based on the Short-term Statistics (STS) data, published by the INSTAT since end 2007. According to OECD, Eurostat and other national statistical institutions of countries with developed statistics, short-

term statistics include many of the key short-term indicators that are vital for analysis of recent economic developments and the development of monetary and economic policy in different countries and regions.

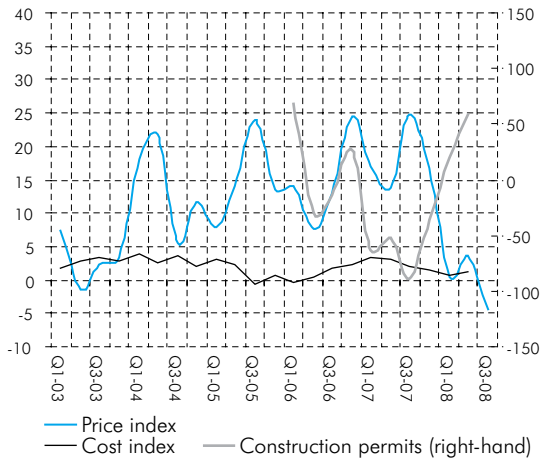
The profile and use of short-term statistics is expanding rapidly. The majority of indicators are provided in the form of indices, which allow the rapid assessment of the economic climate within an economy or a group of economies. The STS published by the INSTAT cover the following indicators: turnover, number of persons employed, wages and salaries, production by sectors of economy etc. STS indices cover these major domains: industry, construction, retail trade, hotels, transportation, communication, postal service and other services. These activities are defined in relation to a classification of activities - NACE - which is the statistical classification of economic activities in the European Community (NACE Rev. 1.1). Basically, STS data are derived from surveys of businesses. The results of each STS indicator are aggregated to take account of the structure of the sector and the economy, by using the shares generated by the Structural Business Survey of 2005, which is the base year.

Among the STS indicators, the turnover index of the economy and given by sectors provides a lot of information which allow the assessment of the short-term performance of economic activity at home. It is deflated in order to provide more accurate information related to the volume of production, labour and services in economy. Starting from the second quarter 2008, turnover index by sectors and for the economy, published as an integral part of the STS, has replaced the respective sales index in economy.

Further improvement has been and will be made to consolidate the STS, in order to allow their wide use in the assessment of the economic climate within the economy.

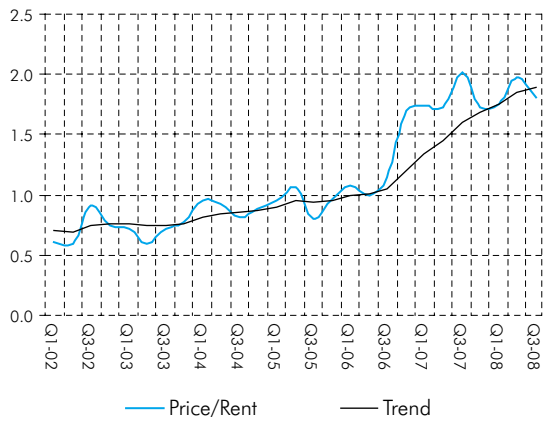
House Price Index (HPI), which is measured by the Bank of Albania[31], fell by 4.3 percent in the third quarter of 2008, compared to the same period the previous year. Although this was the highest annual fall since this indicator first began to be measured[32], house prices rose by 3.6 percent compared to the previous quarter.

Chart 14 Annual changes in the HPI, CCI and the new constructions (in percent)



Source: INSTAT and Bank of Albania estimations and assessments

Chart 15 Price/rent house ratio and its long-term performance



Source: INSTAT and Bank of Albania estimations and assessments

House Rent Index recorded an annual increase of 7.4 percent in the third quarter following its decrease in the previous quarter (-9.5 percent). The opposite performance of price and rent indices has led to the decrease in the price/rent ratio below its long-term trend. After peaking in the third quarter the previous year, this trend began to gradually reduce in the four following quarters. Despite this performance, price/rent ratio for the current quarter is about twice as high as its long-term average[33].

4.1.1 Performance of production by sectors

Services sector has recorded a high annual increase of the turnover indicator during the second quarter of 2008 (32 percent), which is comparable to the previous quarter. Trade activity - wholesale trade in particular - has increased highly by about 35.3 percent. In addition, the results obtained from the business sentiment surveys attest to the persistent positive performance of services sector in the third quarter of the present year.

Production sector recorded an annual increase of the turnover indicator by about 13 percent. According to this indicator, economic activity in industry increased slightly by 3.5 percent, while the annual increase in construction was relatively high - 29 percent. Industry and construction-related businesses confirm the increase in their activities during the third quarter, although at more contained rates - especially in the construction sector[34].

Energy sector. The main indicators in the energy sector improved during the year 2008, compared to the same period the previous year. The annual increase by about 35 percent in domestic production was followed by the drop in imports by 7.4 percent, while the relative indicator of losses to net production continues to fall in annual terms.

Domestic demand remained at almost the same rates as in the previous quarter, being triggered by the consumption needs of households and businesses. The data for the last six years attest to the stable trend of household consumption, while consumption in production activity has maintained average increasing annual rates of about 8.3 percent per year. This consumption trend provides evidence for the expansion of economic activity at home. The positive performance of energy balance sheet indicators was more pronounced in the third quarter of the year 2008. Net production, household and non-household consumption recorded an annual increase of 63.5, 13.2 and 32.3 percent, respectively.

Table 8 Energy balance sheet indicators (for the period January to September over the years, in GWh)

Indicators	2003	2004	2005	2006	2007	2008	Annual change 2008/2007 (in percent)
Net production	3,606	4,107	4,292	4,124	2,103	2,837	34.9
Import	708	305	0	412	1,990	1,842	-7.4
Distribution losses	1,223	1,388	1,485	1,652	1,260	1,260	0.0
Domestic demand	4,733	4,795	4,778	4,646	4,808	4,986	3.7
Invoiced consumption	2,591	2,738	2,693	2,558	2,675	3,080	15.2
Un-invoiced consumption	519	695	721	1,652	1,371	1,397	1.9
Household consumption	1,668	1,668	1,623	1,612	1,532	1,710	11.6
Non-household consumption	923	1,070	1,070	947	1,143	1,371	20.0
Distribution losses/Net Production (in percent)*	33.9	33.8	34.6	40.1	59.9	44.4	-26.0

Source: KESH; (*) Bank of Albania estimations

4.1.2 External sector of the economy

Trade exchanges amounted to 1.14 billion euros in the third quarter of 2008, which is 18.2 percent higher than the same period the previous year. Imports increased by 17.2 percent, while exports recorded an increase of 21.9 percent. Imports' coverage ratio stands at 26.8 percent. Despite the higher increase in exports, trade deficit deepened further. The latter is assessed to have accounted for 22.7 percent of the GDP in the third quarter of 2008, from 21.6 percent the previous year. The deepening of trade deficit has been characterizing several regional economies[35] during the recent years.

Trade with EU member states accounts for about 64.1 percent of Albania's total trade exchanges. Italy and Greece remain Albania's main trading partners[36]. Our main non-EU trading partners by total trade volume are China, Turkey, Russia, Macedonia and Croatia. Excluding Turkey, with which there has been an annual decrease in terms of trade exchanges volume by 4.5 percent, trade with other countries has increased[37].

Table 9 Trade balance indicators for the period 2007 to 2008

	Q3 2007	Q3 2008	January-September 2007	January-September 2008
Volume (in million euros)				
Exports	196.99	240.19	588.60	706.09
Imports	765.51	897.03	2,180.37	2,551.07
Trade balance (E - I)	-568.51	-656.84	-1,591.77	-1,844.98
Change (in percent)				
Exports		21.93		19.96
Imports		17.18		17.01
Trade balance		15.54		15.91

Source: INSTAT and Bank of Albania estimations

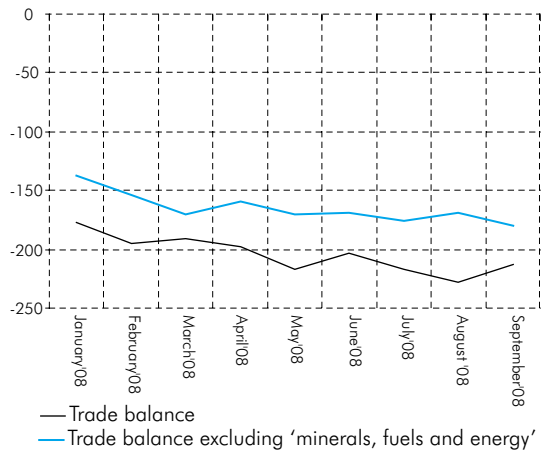
In terms of imports, the following items recorded the highest annual increase during this period: 'minerals, fuels and energy', 'chemical and plastic products', 'construction materials and metal items' and 'machinery, appliances and spare parts'. The imports of 'textiles and footwear' recorded an annual increase of only 3 percent.

Table 10 Imports and exports by commodity groups (in million euros) and the annual increase.

	Imports		Exports	
	Q3 - 2008	Increase (in percent)	Q3 - 2008	Increase (in percent)
Total	897.03	17.18	240.19	21.93
Food, beverages and tobacco	144.68	9.59	14.78	-1.10
Minerals, fuels and energy	184.72	36.07	67.44	48.01
Chemical and plastic products	98.44	24.69	2.46	38.86
Leather and articles thereof	11.37	-0.62	2.31	-19.18
Wood and paper products	32.33	9.20	7.36	34.45
Textiles and footwear	73.44	3.00	92.04	6.42
Construction materials and metal items	142.53	19.28	38.88	42.86
Machinery, appliances and spare parts	180.23	13.30	8.99	32.81
Miscellaneous	29.28	5.07	5.96	0.68

Source: INSTAT

Chart 16 Trade balance including and excluding 'minerals, fuels and energy'



Source: INSTAT and Bank of Albania estimations

The import of 'minerals, fuels and energy' accounts for 20.6 percent of total imports. Excluding this item's imports, the annual increase of merchandise imports would be 13.1 percent, while the trade deficit as a share of GDP would reach 18.7 percent.

In terms of exports, 'textiles and footwear' have recorded an annual drop of about 19.2 percent. Its share to total exports accounts for 38.3 percent or 5.6 percentage points lower in annual terms. By contrast, the exports of 'minerals, fuels and energy', 'construction and materials and metal items', 'chemical and plastic products', 'wood and paper products' and 'machinery, appliances and spare parts' have recorded an annual increase. The structure of exports by trading partners attests to the high concentration of exports with EU member states - 76.33 percent. Therefore, despite the high increasing rates of exports and the enlarged map of trading partners, a possible reduction of demand in these countries would affect the total volume of Albanian exports and consequently, the trade balance figures.

4.1.3 Fiscal indicators and fiscal policy

As of end the third quarter of 2008, fiscal policy has by and large observed the targets set in the Medium-term Budget Programme for 2008 – 2010. This period has been characterized by a positive performance of budget revenues, which met about 98 percent of the 9-month plan. In contrast to the previous two years, the third quarter of the year 2008 provided evidence for an active fiscal policy on the expenditures side, which brought about the deepening of budget deficit compared to the previous quarter. Starting from the second quarter, budget expenditures have been

carried out more rapidly. As of end the third quarter, they were met by about 94 percent. In contrast to the previous two years, the higher pace in expenditures has caused the budget balance to end in a deficit for the first nine-month period. According to the budget approved for 2008, budget deficit as a share of GDP is projected to account for 5.2 percent, implying a primary deficit of about 2.2 percent as a share of GDP. This figure is about 1.3 percentage points higher than the previous year and it implies a more rapid increase of public debt.

In nominal terms, budget revenues amounted to 208.9 billion leks as of end September. In annual terms, this is the highest figure in the last nine years. Excluding the sub-item of tax on profit, customs duties[38] and non-tax revenues[39], the other sub-items have increased in annual terms. Value added tax, tax on personal income and excises continue to provide the main contribution to the increase of total revenues. The contribution of tax on personal income to the total increase of revenues has increased substantially as a result of the change in the tax rate[40].

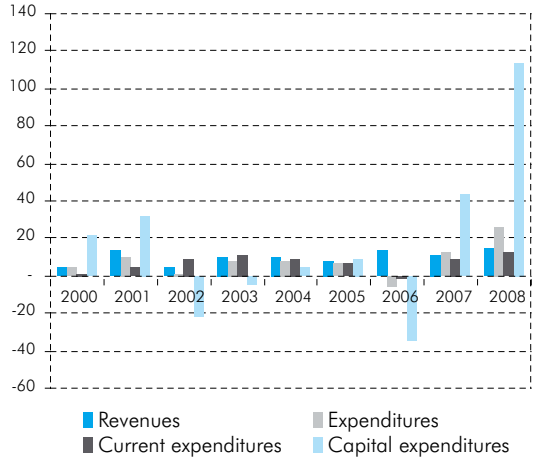
As of end September, budget expenditures totalled about 217.4 billion leks or as much as 94 percent of the projected plan for this nine-month period. Similarly to revenues, total expenditures recorded the highest increase in the last nine years. Capital expenditures, personnel expenditures and social insurance expenditures provided the main contribution to this increase. Investment expenditures were twice as much as the previous year, mainly owing to the financing of Durrës – Kukës road[41]. As of end the third quarter, despite the high increasing rate, capital expenditures have been met by about 83 percent of the projection. Interest expenditures have also increased substantially relative to the previous year (by about 25 percent). As of end the third quarter, their meeting level is in line with the projection.

Table 11 Main fiscal indicators for the period 2006 to 2008

	Performance during Q3 over the years (in billion leks)			Cumulative[42] (in billion leks)		Annual change (in percent)	
	Q3 2006	Q3 2007	Q3 2008	2007	2008	2007	2008
Total revenues	56.82	65.86	73.93	181.40	208.92	11.79	15.17
Tax and customs	39.69	46.40	53.85	127.61	149.94	14.13	17.50
Other tax	12.63	12.27	14.77	36.58	42.68	- 2.09	16.66
Non-tax	2.70	6.20	5.11	16.09	15.58	46.01	- 3.16
Total expenditures	56.88	66.34	80.05	171.73	217.37	12.80	26.58
Current expenditures	50.25	56.21	61.75	150.37	169.54	9.51	12.75
- Personnel	14.21	14.50	16.35	40.09	46.34	1.51	15.60
- Interest	7.28	6.35	7.97	18.41	22.99	- 5.31	24.93
- Social insurance	15.50	18.24	20.40	50.58	55.42	16.46	9.57
Capital expenditure	6.64	10.13	17.49	21.35	45.51	43.06	113.12
Budget balance	- 0.06	- 0.48	- 6.12	9.67	- 8.45	- 3.48	- 187.39
Domestic financing	- 0.15	- 1.18	- 11.46	- 11.62	- 10.26	3.61	- 11.74
- Privatization	0.00	13.09	0.43	13.14	0.83	520.80	- 93.67
- Domestic borrowing	3.00	3.01	1.88	6.45	13.40	- 186.52	107.69
Foreign financing	0.22	1.65	17.58	1.95	18.71	63.19	860.37

Source: Ministry of Finance and Bank of Albania estimations

Chart 17 Annual change of main fiscal indicators: September 2000 - September 2008



Source: Ministry of Finance

As of end September, budget balance recorded a negative figure of 8.5 billion leks, as opposed to 18.8 billion leks projected for this period. The year 2008 marks the shift in the budget balance behaviour relative to the previous two years. This is due to the fact that in the previous two years, the budget balance recorded negative figures only in the last months of the respective year, while starting from the second quarter 2008 this item has fluctuated within a band of negative values.

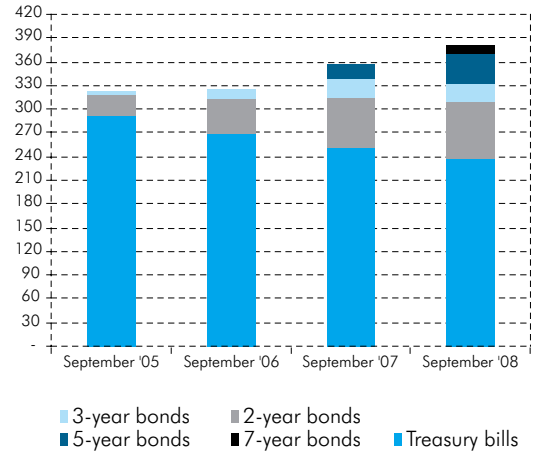
Budget deficit financing. In contrast to previous years, foreign financing has the largest share in deficit financing. Domestic borrowing amounted to 13.4 billion leks or about 3.6 billion leks below the projection for this year. Foreign financing has been met by 18.7 billion leks or about 76 percent of the nine-month plan.

Table 12 Budget deficit financing as of end Q3 for the period 2003 to 2008 (in billion leks)

	Sept. 2003	Sept. 2004	Sept. 2005	Sept. 2006	Sept. 2007	Sept. 2008
Budget balance	- 19.32	- 18.87	- 18.98	10.02	9.67	- 8.45
Domestic financing	13.66	14.81	15.19	- 11.21	- 11.62	- 10.26
Privatization receipts	0.48	8.28	0.83	2.12	13.14	0.83
Domestic borrowing	16.16	8.22	14.86	- 7.45	6.45	13.40
Foreign financing	5.66	4.05	3.80	1.19	1.95	18.71

Source: Ministry of Finance

Chart 18 Stock of domestic debt as of end Q3 for the period 2005 to 2008 (in billion leks)



Source: Ministry of Finance

During the year 2008, domestic borrowing was more oriented towards long-term instruments. In the auctions held until the end of the third quarter, the Ministry of Finance has reduced the amount of debt in 3-month T-bills, while increasing slightly the stock of debt in 6 and 12-month T-bills. In the meantime, for all bonds' maturities it has been issued a larger amount of debt than the matured one.

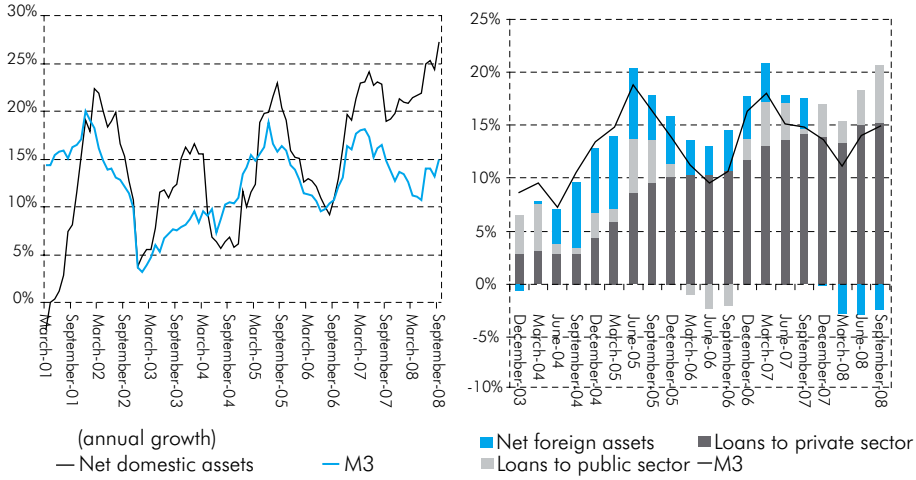
Short-term domestic debt shares about 62 per cent of total domestic debt, dropping by 8 percentage points from the previous year.

4.1.4 Monetary developments

Monetary expansion in economy maintained the average growth rates by about 14 percent during the third quarter. Money growth has reflected the expansion of credit stock to

the private sector. Credit to the private sector has contributed to M3 annual growth by about 15 percentage points. In addition, in terms of contribution to M3, credit to the public sector has generated about 2 percentage points annual money flows. However, the annual reduction of net foreign assets has exerted an offsetting effect on the annual money growth rate[43]. The current performance of demand for monetary assets reflects an upward tendency of demand for foreign monetary assets, which attributes to the developments in the external sector of the economy and to the growth in aggregate demand. This tendency is shown in the annual growth rate of the banking system's net domestic assets by about 27 percent in September from about 22 percent in September 2007.

Chart 19 M3 annual growth (left-hand); contribution of credit to M3 annual growth (right-hand)

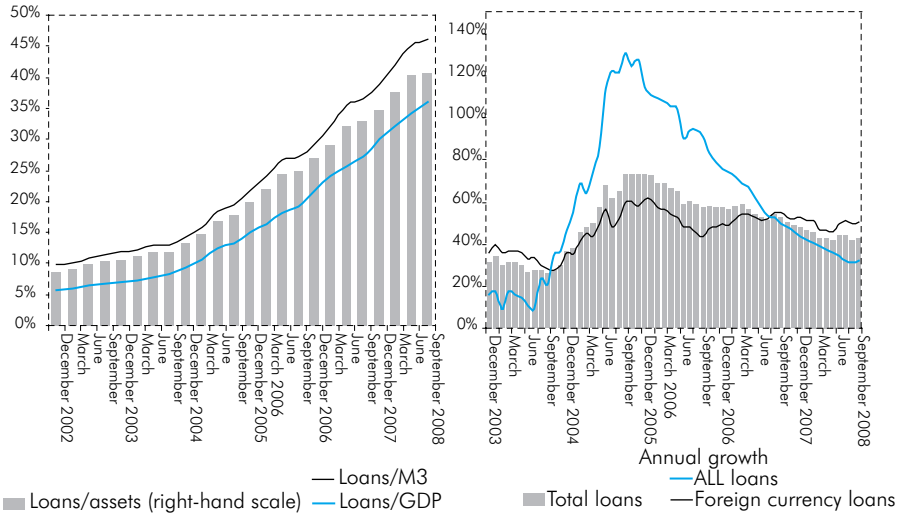


Source: Bank of Albania

DEVELOPMENTS IN LOAN PORTFOLIO

Outstanding loans grew by 29 billion leks in the third quarter of 2008, hence maintaining the high growth rates of 43 percent. In annual terms, the growth of loans to the private sector did not experience any changes from the second quarter. The banking system's lending activity has sustained growth in the main sectors of the economy and has provided its contribution to the further deepening of financial intermediation. As a share of GDP and the system's assets, loans have recorded further growth to 36 and 41 percent, respectively. The growth of loans in the third quarter owes to the high level of new loans (68 billion) and to the extension of the loans' maturity term. In the last two years, the time structure of loans portfolio has shifted towards long-term loans (46.5 percent) and short-term loans (35 percent), while the medium-term maturity loans have reduced considerably (22 percent)[44].

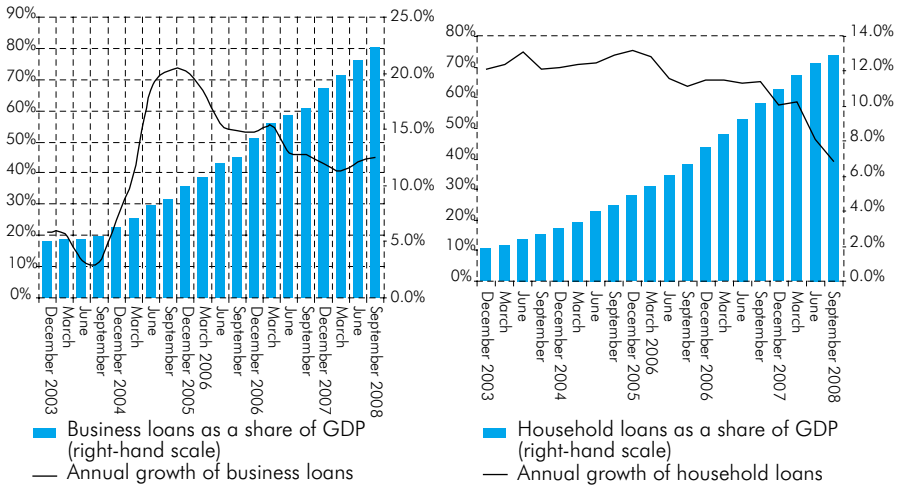
Chart 20 Performance of loan portfolio



Source: Bank of Albania

Foreign currency-denominated loans continue to provide the main contribution to the growth of loans, maintaining high annual growth rates (50 percent), compared to ALL-denominated loans which grew by 32 percent as of end the third quarter. The positive interest rate spread between ALL loans to foreign currency loans remains the key factor, which pushes people to borrow loans in foreign currency. This performance has also been favoured by the larger share of business loans and by the tendency of lending to households in foreign currency in response to the higher demand for mortgage loans.

Chart 21 Loans by type of borrower

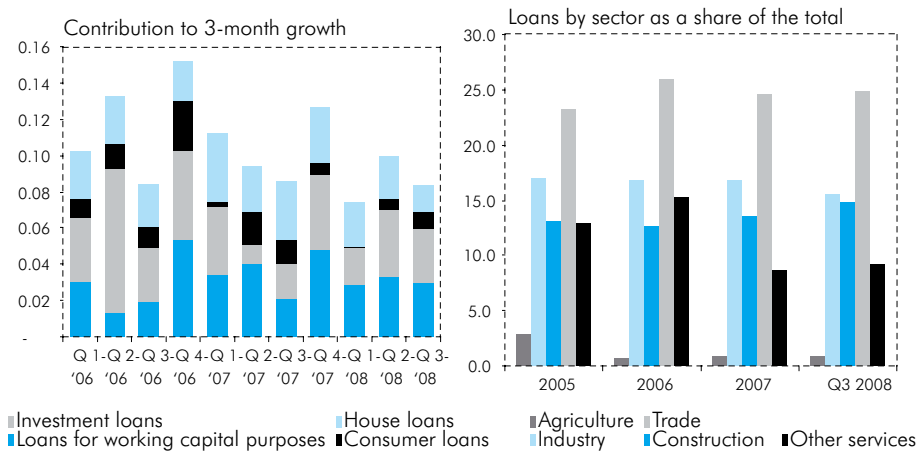


Source: Bank of Albania

Business loans provided the main contribution to the growth of loans' portfolio, accounting for 66 percent. In annual terms, business loans' portfolio grew by 44.2 percent compared to 40.2 percent the previous quarter. The growth of business loans owes to the higher demand for meeting the liquidity

needs and for investments in real estates. In average annual terms, liquidity loans grew by 56.3 percent in the third quarter, compared to 48.6 percent in the previous quarter. Loans for investment purposes grew by 40 percent, being mainly pushed by the increase of business investment in real estates. Loan portfolio growth during the year 2008 has sustained the positive growth of the main sectors' economic activity. In September 2008, the loan portfolio is dominated by lending to the sectors of trade (24.8 percent), construction (14.7 percent) and industry (15.5 percent). During the entire year 2008, trade and construction-related activity have been granted more financing from the banking system, hence growing their share of loans by 0.3 and 1.2 percentage points, respectively, compared to December 2007.

Chart 22 Distribution of loans by purpose of use and sectors of economy



Source: Bank of Albania

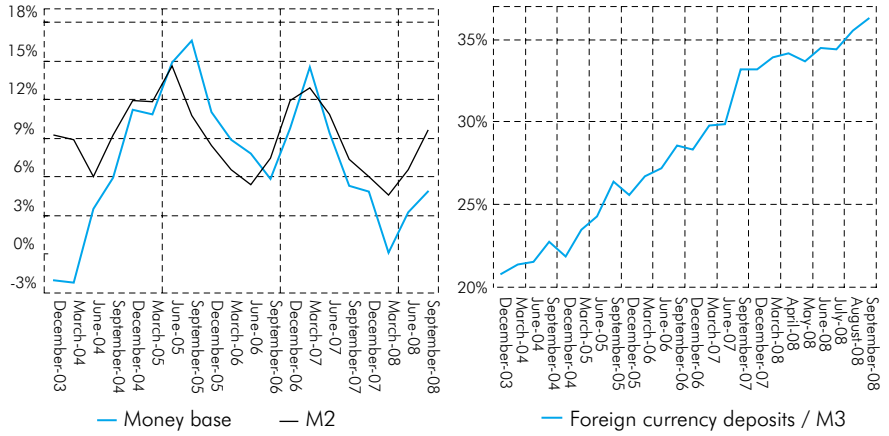
Households' loan portfolio growth rate has reduced to 41.0 percent from 67.7 percent in 2007. This performance owes to the substantial reduction in the annual growth rate of consumer loans (29.3 percent) and to the reduced growth rate of house loans (46.7 percent). Households' portfolio, however, has shifted towards lending for the purchase of houses throughout the year 2008. In September, house loans accounted for 66 percent of this portfolio. Despite the seasonal growth during summer, consumer loans provided a less considerable contribution compared to the previous year. In September, consumer loans accounted for 25 percent of household loans, compared to their peak of 31 percent in July 2007.

DEVELOPMENTS IN MONETARY AGGREGATES

The growth of money mainly attributes to growth of deposits held in foreign currency. In annual terms, the narrow monetary aggregates, M2 and money base, grew by 9.6 percent and 4.8 percent, respectively, in September. The creation of money flows in foreign currency, on the side of demand for deposits, has contributed to the more rapid growth of M3 aggregate. In

annual terms, foreign currency-denominated deposits grew by 26 percent in September relative to the more moderate growth of M2 aggregate. The high interest rates on foreign currency-denominated deposits attribute to the impact of foreign currency inflows in the form of remittances and to the creation of money in the form of foreign currency loans to the private sector. Foreign currency-denominated loans account for about 70 percent of credit to economy. As of September, foreign currency deposits accounted for about 36 percent of broad money (M3) compared to about 33 percent as of end year 2007.

Chart 23 M2 and money base annual growth (left-hand side); foreign currency deposits/M3 (right-hand side)

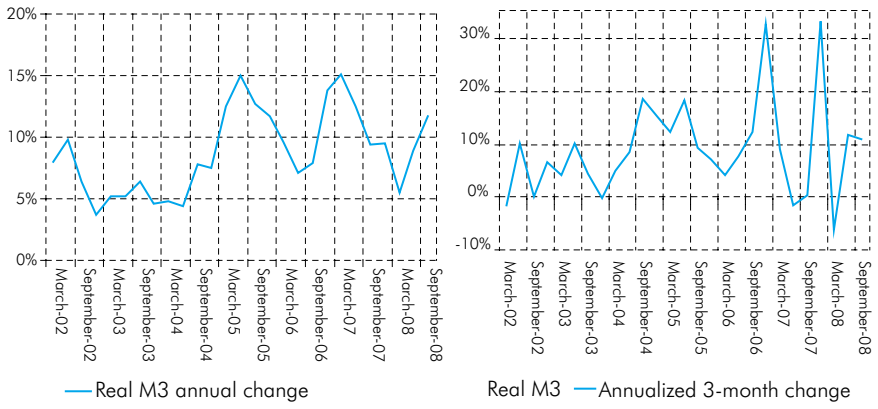


Source: Bank of Albania

In average terms, the annual growth of M2 and money base is assessed as being stable. The volatile annual rates reflect the behaviour of net loans to the public sector and the reduced use of currency in circulation. The growth of the banking system's net loans to the public sector in the second half of the year has triggered the acceleration in the growth of money base from 0 percent to about 5 percent, and of M2 aggregate relative to the average rate of 4 percent in the first quarter of the year.

In real terms, money supply (M3) has shown an upward tendency, mainly owing to the decrease in the average inflation rate in the third quarter of the present year. As of September, the real M3 grew by about 12 percent, compared to about 9 percent it grew by in the second quarter. An upward tendency in the annual growth of real M3 is likely to generate additional pressures on the aggregate demand and consumption. In seasonal terms, M3 real growth materialized in the second and third quarters. The decrease in the inflation rate, the more accelerated public expenditures and the foreign currency inflows in the form of remittances in the third quarter have provided the main contribution to the more accelerated growth of real M3 in seasonal terms.

Chart 24 Real M3 annual growth (left-hand side) and real M3 (annualized) quarterly growth (right-hand side)[45]



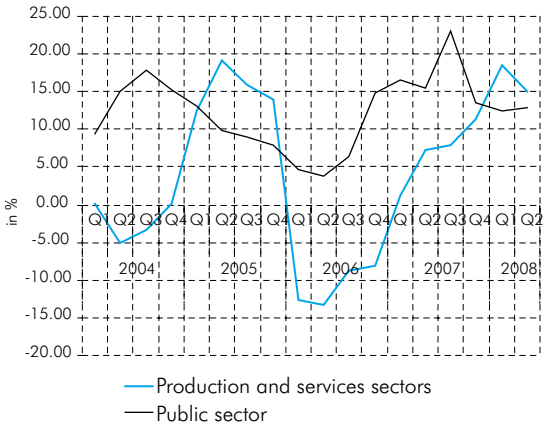
Source: Bank of Albania

4.2 PERFORMANCE OF WAGES AND THE LABOUR MARKET

PERFORMANCE OF WAGES

In annual terms, the average wage rose during the second quarter of 2008, both in the public and private sector. Average monthly wage in the public sector[46] reached 35,943 leks, which is 0.4 percent higher compared to the previous quarter and 13 per cent higher than the previous year. The administrative measures[47] continued to affect the increase of reported wages[48] in the private sector during the first half of the year.

Chart 25 Annual changes in the average wage in the public and private sector



Source: INSTAT (Short-term Statistics and Conjuncture) and Bank of Albania estimations

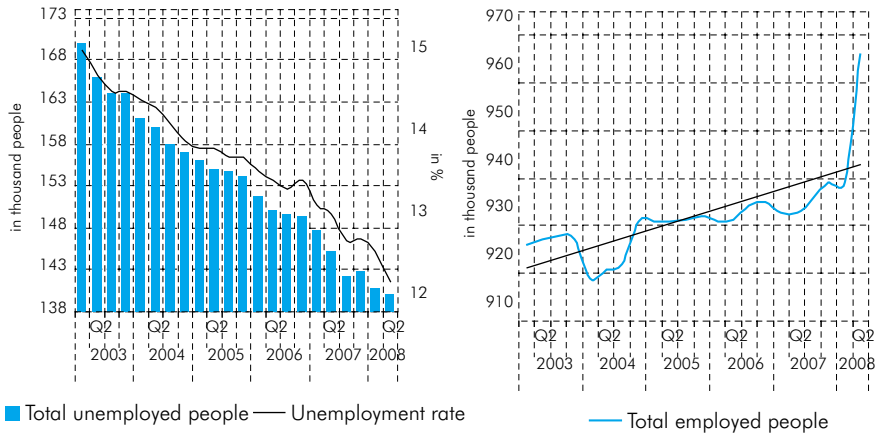
During the second quarter, wage in the private sector rose by about 15 percent in annual terms. Wage in production and services sectors rose at the same rates as in the previous periods. Within the sector of production, industry and construction recorded the highest rise in average wage.

The performance of wages during the first half of the present year was sustained by the positive annual growth rates in productivity[49]. If this tendency persists in the future - and mainly in the production sectors of the economy - then the price rise effect on the cost per unit of production will be lower, hence not transmitting additional pressures in economy in the medium-run.

LABOUR MARKET

The number of employed people[50] increased by about 26,617 in the second quarter or 2.83 percent compared to the previous quarter. The private agricultural sector provided the main contribution to the increase in the number of employed people in the second quarter by about 26,549, reflecting at the same time the improvement in registration. The private non-agricultural sector has recorded a slight increase by about 229 people, while the number of employed people in the public sector has reduced by about 161 people. Unemployment rate reached about 12.7 percent in the second quarter, hence keeping the historical downward trend for this indicator.

Chart 26 Indicators of unemployment and employed people



Source: INSTAT, Conjuncture, Main Economic Indicators

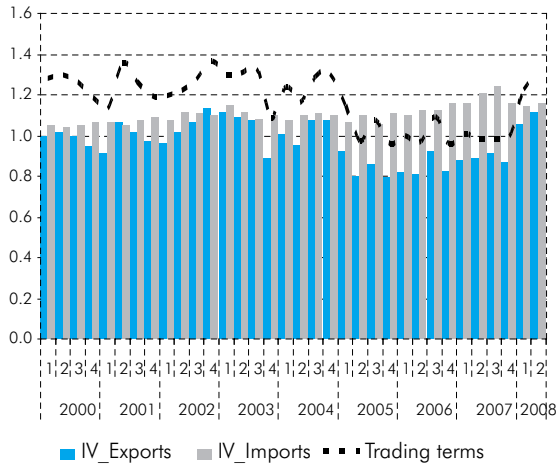
During the same quarter, the number of registered labour forces increased by about 25,825 people or 2.39 percent, implying that the number of registered unemployed has reduced by 792 people.

4.3 IMPORT PRICES

Import prices may affect inflation at home through the price of imported consumer goods and the impact on the business cost. After increasing in the last two years, import prices[51] fell in the first half of 2008. During 2006-2007, import prices rose by an average of 5 percent, while in the first half of the present year they fell by 3 percent in annual terms. Raw materials' prices provided the main contribution to the annual fall in the import prices index. The corresponding items in the producer price index maintained the same downward tendency in prices. Export prices recorded high annual rising rates by 20 and 26 percent respectively, in the first and second quarter, hence improving the trading terms.

The Albanian economy continues to be import-oriented, mainly from the EU member states[52]. In addition to the developments in the overall level of prices in these countries, the lek exchange rate against the euro has a determining impact on imported inflation. Starting from the second half of 2007, inflation in Albania's main trading partners - Italy and Greece - has marked high increasing rates, owing mainly to the price rise in primary commodities of foods and oil. Given the downward tendency of the lek appreciation against the euro[53], the inflationary pressures generated by the price rise in these countries were stronger on prices at home. During the third quarter of 2008, the index comprising the consumer goods' prices of Italy and Greece maintained the increasing rates of the previous two quarters - 4 percent -, while the exchange rate remained unchanged.

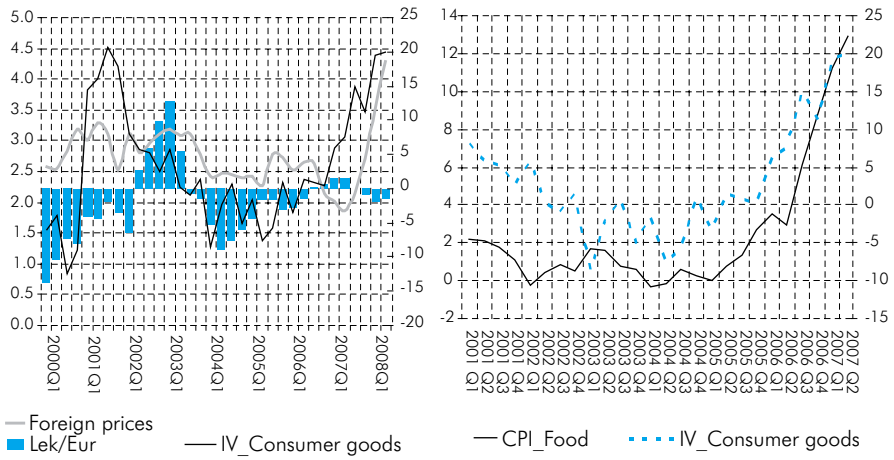
Chart 27 Import and export unit value index



Source: INSTAT and Bank of Albania estimations

The high import prices of consumer goods combined with the downward tendency of the lek appreciation against the euro in the first half of 2008, have been exerted inflationary pressures on prices at home.

Chart 28 Annual changes in foreign prices, exchange rate (left-hand axis) and in unit value prices of consumer goods' import (right-hand axis)

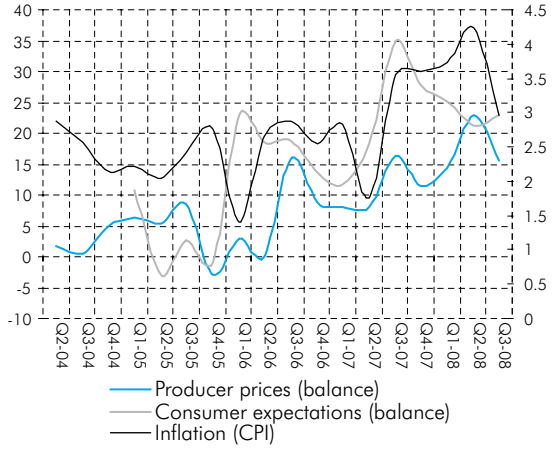


Source: INSTAT and Bank of Albania estimations

4.4 EXPECTATIONS FOR PRICES IN ECONOMY

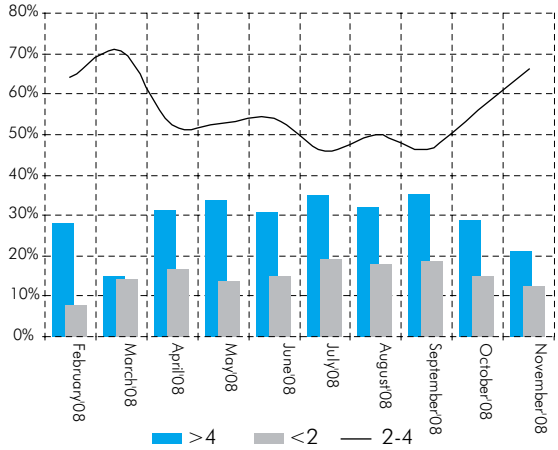
Inflation expectations, which are based on the results of the surveys carried out by the Bank of Albania[54], have been in line with the actual upward tendency of this indicator starting from September 2007. After peaking in 2007, medium-term consumer expectations (1 year horizon) have fluctuated at around 3.0 percent or close to the central bank's inflation target. Their behaviour attests

Chart 29 Consumer expectations, business assessments of producer prices (left-hand axis) and banks' expectations (right-hand axis)



Source: INSTAT and Bank of Albania

Chart 30 Probability that annual inflation after a year will be within the 2-4 percent rate, lower than 2 percent and higher than 4 percent



Source: Monthly Banks' Survey, Bank of Albania

to the fact that consumer expectations are closely related to their perception of current inflation. Thus, the recent months' contained increase of inflation has been also reflected in the behaviour of expectations, which in the third quarter of 2008 stand below 3.0 percent.

According to the business sentiment survey, producer prices show an upward tendency starting from the second half of 2007. However, during the last quarter the balance of producer prices has dropped by 7 percentage points[55].

During October - November 2008[56], median expectations of banks' experts for the inflation rate after 12 months, were close to 3.4 percent, compared to 3.9 percent in the second quarter of 2008. From the aggregation of responses on the probabilitary distribution of expectations for the inflation rate after 12 months, in the survey held in November the inflation rate stood at within the 2-4 percent range, with a 66 percent probability, up by 10 percentage points from a month earlier. In the short-run, expectations for annual inflation after a month are optimistic. Banks are more certain than a month ago that inflation for the coming month will be within the 2-4 percent range. The probability that annual inflation rate after a month will be above 4 percent has fallen slightly.

5. FINANCIAL MARKETS, INTEREST RATES AND THE EXCHANGE RATE

The interest rates in the markets have by and large been stable during the third quarter, while the central bank has continued to supply the banking system with liquidity. As of end the third quarter and later in October, the short-term interest rates in the money market increased considerably, owing to the pressures for the liquidity shortage during the period when the required reserve was met and to its asymmetric distribution in the interbank market. These fluctuations in the short-term interest rates have not been transmitted to other markets. The Government securities' yields in the primary market lowered, while deposits and loans' interest rates have been stable.

The available data indicate that the domestic market remains on the fringes of the negative developments characterizing the international financial markets. This attributes to the yet too low financial intermediation at home and the lack of the Albanian banking system exposure to the financial instruments

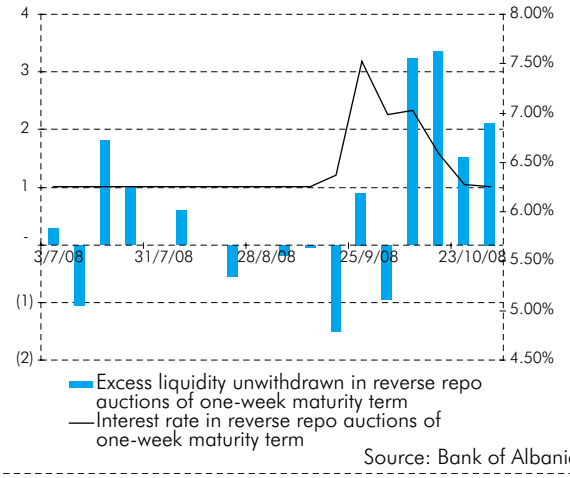
that triggered the current crisis. However, the increase in the funding cost in the international market may lead to the tightening of lending, in particular of that in foreign currency. In addition, the supervisory measures in the lending process will strengthen. On the other side, despite the high intermediation margins, interest rates of ALL loans have shown a slight downward tendency in the last two years. Agents' expectations for the maintenance of inflation at stable rates and the preservation of domestic demand may shift the attention to lending in domestic currency, hence enhancing competition in this market.

5.1 MONEY MARKET

Since the first quarter, the banking system has been characterized by the shortage of liquidity and the open market operations have been oriented to its injection, mostly through one-week maturity reverse repo auctions with limited amount. On the other side, the trading activity in the interbank market has increased compared with the previous year. Borrowing continues to be limited to short-term maturity terms - mainly overnight. In the last 10 months, borrowing in the interbank market increased to an average of 1.5 billion leks from 1.0 billion leks, while the interest rates fluctuated at around the low corridor and very close to the key interest rate. A similar situation also characterized the third quarter of the present year; however the increasing need for liquidity at end September, when the required reserve was met, caused the overnight interest rate in the interbank market to jump substantially to 7.54 percent or 1.29 percentage points above the key interest rate. This move followed the increase in the interest rate bid in open market operations. The upward tendency was transmitted until the first two weeks of October.

The pressure on the interest rates arose from the inefficient management of liquidity and the asymmetry in the interbank market, rather than from its shortage in the open market operations. In order to 'calm down' market participants and trigger activity in the interbank market, the Bank of Albania has also made use of reverse repos of overnight (in September), one-month and three-month (in October and November) maturity term. In addition, the amounts announced to be purchased in the auctions were significantly higher than the banking system's needs. In November, the auctions took the form of reverse repo auctions, with a fixed price to the key interest rate (6.25 percent) and with undetermined amounts, hence allowing for the decrease of the borrowing cost in the market.

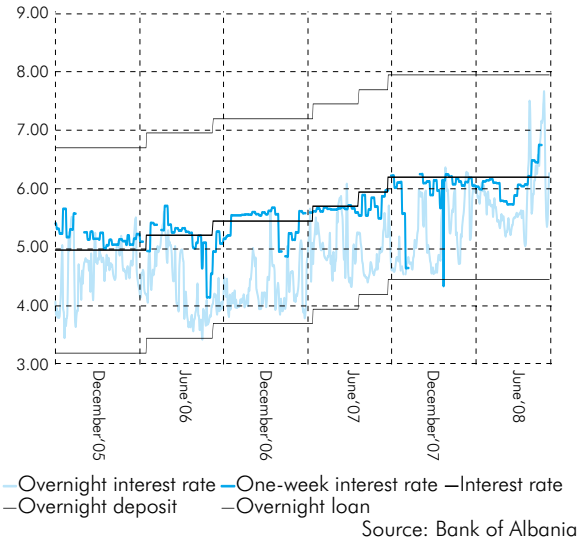
Chart 31 The interest rate in the reverse repo auctions of determined amount and of one-week maturity term and the spread between the offered and bid amount (in billion leks)



Source: Bank of Albania

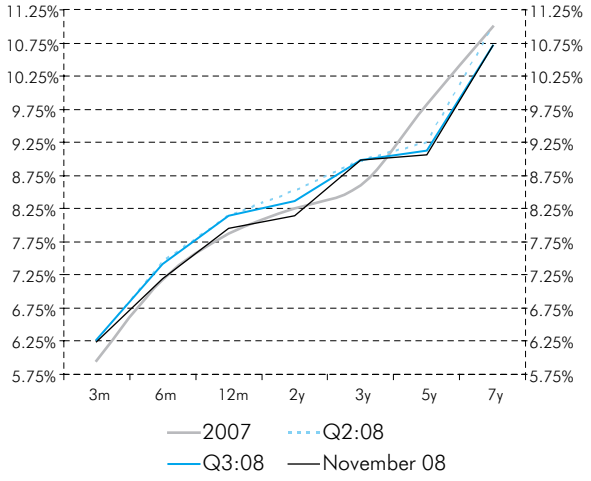
The interbank market has been active throughout the third quarter and has met the banking system's short liquidity needs. Median daily volume of borrowing in the interbank market stood at similar levels with the previous quarter - about 2.4 billion leks. In October, it reduced by about 0.6 billion leks,

Chart 32 Interest rates in the interbank market



Source: Bank of Albania

Chart 33 Government securities' yields in the primary market



Source: Bank of Albania

owing to the decrease in the traded volume of one-week maturity term, while the overnight transactions remained at the same levels. Weighted-average interest rate of overnight transactions increased to 6.60 percent in October from 6.06 percent in September.

5.2 PRIMARY MARKET

T-bill yields in the primary market have shown a downward tendency in the third quarter. Following their response to the last change in the key interest rate in November 2007, they maintained a slight upward tendency in the first two quarters of the present year to later shift downward in the third quarter starting from August. The same performance also persisted in October, hence confirming the tendency of this period. Compared with the previous year when the key interest rate increased by 50 basis points, at end October the 3-month yields increased by 0.16 percentage points (6.23 percent) while the 12-month yields fell by 0.18 percentage points (7.92 percent). The downward tendency and the reduced spread between maturity terms were reflected in the yields' curve, whose sloping moderated. With respect to yields movements, they have shown slight volatilities. The issued volumes were higher than in the previous quarter and participation in the auctions has been at satisfactory levels. The drop of the yields persisted in the early November, when the 12-month yield stood at 7.95 percent, while the 3-month yield was 6.05 percent, which is close to the yield prior to the last increase of the key interest rate by 25 basis points (November 2007).

Table 13 Government securities' yields in the primary market

	T-bills			Bonds		
	3-month	6-month	12-month	2-year	3-year	5-year
Average 2007	5.96	7.17	7.87	8.25	8.54	9.83
Q3: 2007	5.78	7.25	7.97	8.19	8.30	9.76
Q1: 2008	6.24	7.34	8.11	8.41	8.98	9.40
Q2: 2008	6.28	7.44	8.151	8.52	8.98	9.25
Q3: 2008	6.26	7.41	8.146	8.37	8.98	9.13
November-08	6.05	7.20	7.95	8.15	8.98	9.20

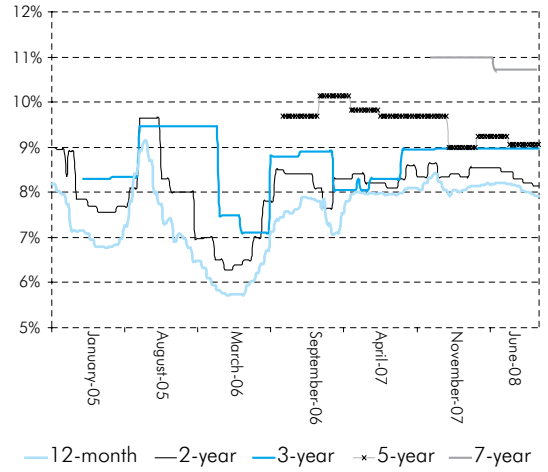
Source: Bank of Albania

Bonds' yields in the primary market were stable and maintained a downward tendency in the third quarter. The performance of bonds' yields has reflected

the movements in the T-bills' market, hence shifting downward during this period. Compared with the previous year, the spread between 2-year bonds and 12-month T-bills has narrowed. In addition, the spread between other long-term instruments has kept the same performance. The reduced spread between all maturity terms has moderated the slope of the yields' curve of these instruments. The downward tendency of long-term yields attests to the improvement of market agents' expectations for inflation, the enhanced confidence in these debt instruments and the monetary policy efficiency.

In early November, 2-year bonds' yield dropped to 8.15 percent or 0.10 percentage points lower than the previous year's average. 5-year bonds' yield stood at 9.20 percent or 0.62 percentage points lower. The participation was high and the volume of bonds issued by the Ministry of Finance has been increasing, reflecting the shift of debt financing with long-term instruments. The banking system's portfolio continues to shift to instruments of longer than one year maturity term, which is believed to have impacted the decrease of bonds' yields. 3-year and 7-year bonds' yields remained unchanged at 8.98 and 10.71 percent, respectively.

Chart 34 Performance of yields in the primary market



Source: Bank of Albania

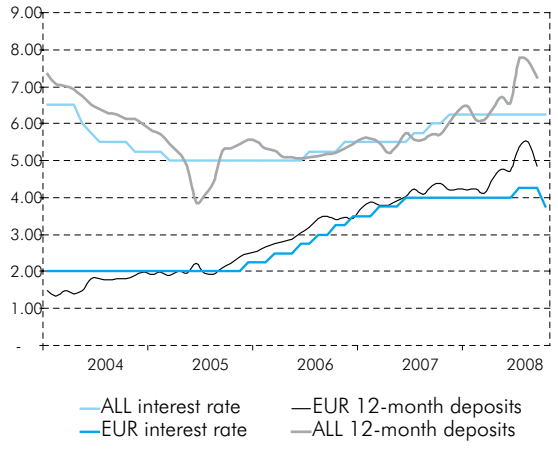
5.3 INTEREST RATES ON DEPOSITS AND LOANS

Weighted average interest rate of ALL deposits increased in the third quarter of the year, owing to the launch of promotional offers available for only a limited period of time and aiming at attracting the savings to the banking system during the visit of Albanian emigrants. The banking system promoted high interest rates on both ALL and EUR deposits, causing the shift in the ratio of deposits between these two currencies to become insignificant. These promotional offers terminated in September when the interest rates began to drop again close to (but above) the previous levels.

ALL interest rates peaked in August with an average of 6.72 percent, up by 1.24 percentage points from the second end-quarter of the present year. In September, the interest rates fell to 6.11 percent, up by 1.32 percentage points from the previous year. In real terms, this change is even higher considering that the annual inflation rate has been descending. With respect to maturity terms, worth to note is the fact that the interest rates on 12-month deposits increased substantially to 7.72 percent in July and August. In September, weighted average interest rate on 3-month deposits recorded the highest fall by 1.19 percentage points to 5.08 percent, while that on 12-month deposits fell by 0.46 percentage points to 7.25 percent.

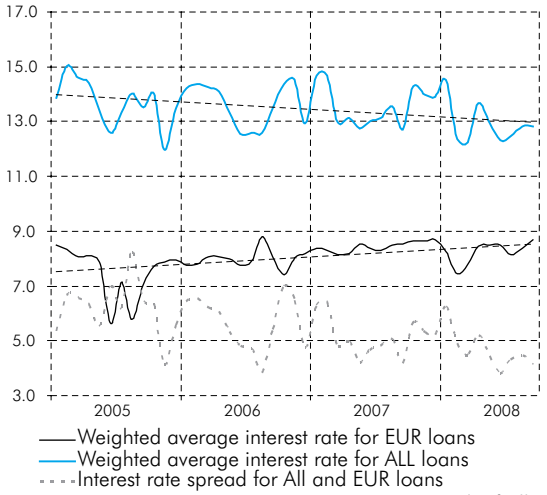
The interest rates on EUR time deposits have by and large maintained the same seasonal movement. After the launch of promotional offers, when the

Chart 35 Performance of ALL and EUR deposits interest rates



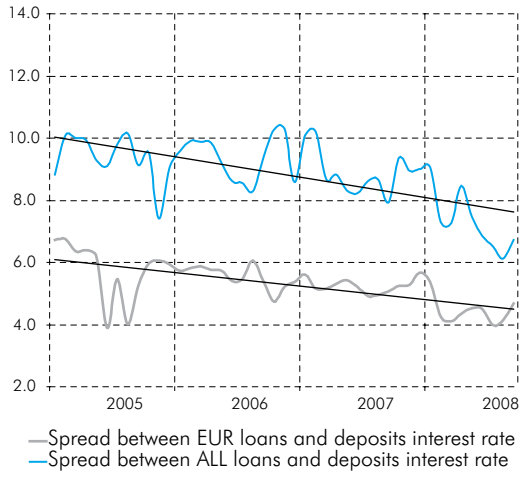
Source: Bank of Albania, ECB

Chart 36 Performance of weighted average interest rate for ALL and EUR loans



Source: Bank of Albania

Chart 37 Spread between ALL and EUR loans and deposits interest rate



Source: Bank of Albania

weighted average interest rate on these deposits reached the peak of 4.22 percent, in September it fell by 0.19 percentage points to 4.03 percent. The cut of the key interest rate by the European Central Bank in October is expected to be reflected in the domestic market as well, although not at the same margin given the banks' efforts to maintain their market positions. The ALL and EUR 12-month deposits' spread was 2.33 percentage points in September, which is close to that in July (2.36 percentage points), providing evidence for the ongoing competition in the banking system with respect to euro-denominated deposits.

Demand for ALL loans remained relatively high in the third quarter. In August, average interest rate on ALL and EUR loans had a slight upward tendency. Interest rates on EUR loans increased in September, partly reflecting the developments in the international financial markets.

Weighted average interest rate of ALL loans was 12.84 percent in September (almost the same as in August), up by 0.38 percentage points from July. The figures were mainly determined by the loans to meet short-term business needs and the real estate loans to households.

The interest rates on foreign currency loans were in line with the developments in the global markets. The interest rate on EUR loans increased to 8.70 percent in September, up by 0.34 percentage points from August 2008. This increase mainly attributes to the tightening policies pursued by the banking system during this month. On the other side, the conservatory policies in terms of foreign currency lending are expected to shift the attention to lending in the local currency and to the reduction in interest rate margins. Demand for EUR loans continued to be high for all purposes of use, in particular for real estate purposes, whose interest rates remain competitive and stable.

Intermediation rate for ALL interest rates increased by 0.6 percentage points in September, compared with the previous month. However, this increase owes to the drop in ALL deposits' interest rates during this period. Average intermediation rate for the euro increased by 0.5 percentage points. This

change provides evidence for the slight tightening tendency, resulting from the latest developments in the banking system with respect to lending in foreign currency.

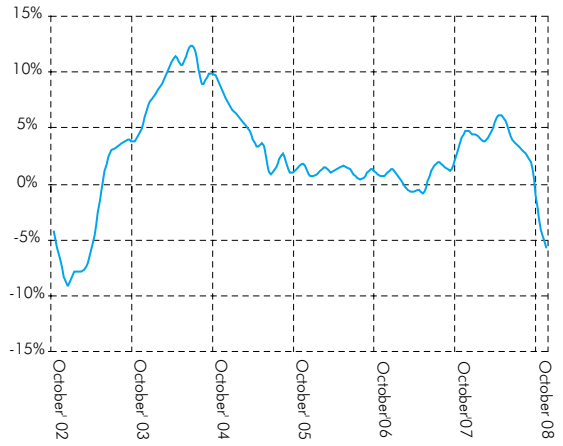
5.4 EXCHANGE RATE PERFORMANCE

The third quarter of 2008 saw the pronounced downward tendency of the lek exchange rate depreciation, which began in the beginning of the second quarter. In annual nominal effective terms, there was a 2.40 percent change in the index during the third quarter, from 1.60 percent the previous year. In October, this tendency shifted to the depreciation of the local currency when for the first time since May 2007, the NEER reached negative values to -2.0 percent.

The depreciation of the lek at end the third quarter and the beginning of the last quarter has mirrored the developments in the domestic market and the performance of the EUR/USD ratio in the international markets. The depreciation of the lek against the euro owes to the high demand for the latter. This demand was mostly concentrated in two periods of time: in September when the demand for foreign currency stemmed from the conversion of the foreign companies' profits; and in October owing to the high demand for foreign currency, mainly from outside the banking system. In October, the lek depreciated against the euro and the dollar in annual terms, by 0.6 and 7.6 percentage points, respectively.

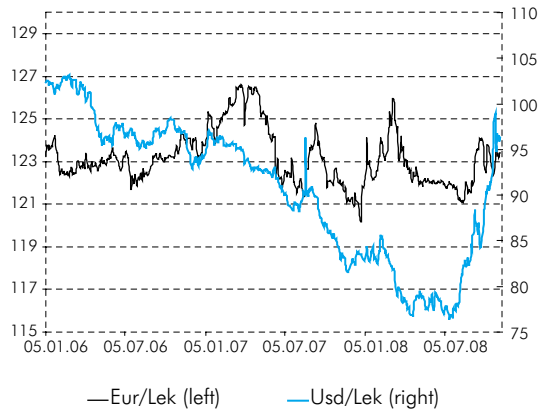
In addition, the depreciation of the lek against the euro in October, compared to the previous year, became more pronounced as a result of the positive performance - beyond the seasonal behaviour - of the lek in the same period the previous year, owing to the conversion of commercial banks' capital from foreign currency in lek in 2007. The appreciation of the U.S. dollar against the lek has fully reflected the developments in the EUR/USD in the international market, where this ratio reached 1.283 EUR/USD at end period, from 1.40 in September.

Chart 38 Lek annual changes in nominal effective terms (NEER[57])



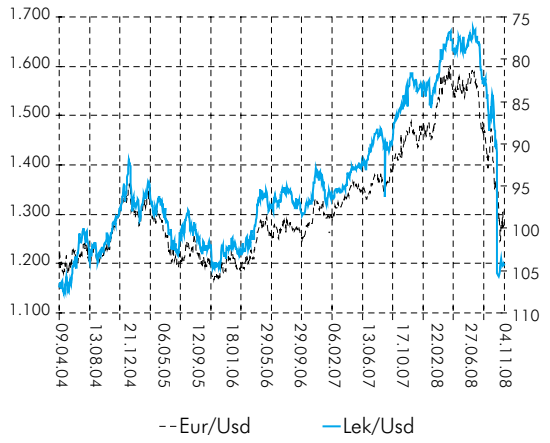
Source: Bank of Albania

Chart 39 Daily performance of ALL/EUR and ALL/USD exchange rate



Source: Bank of Albania

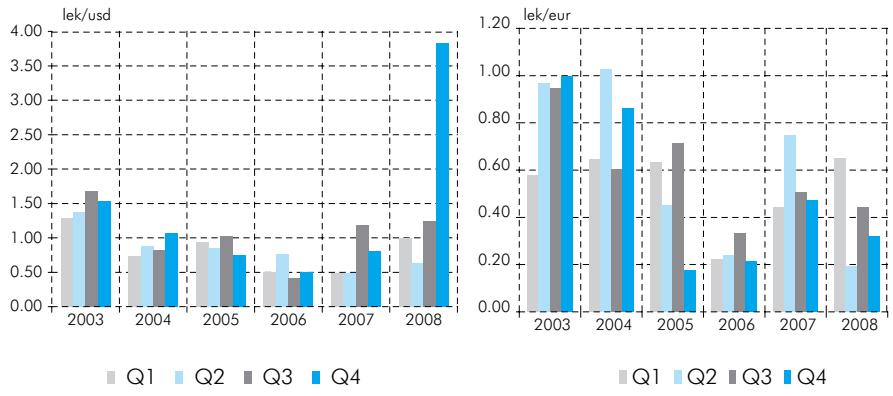
Chart 40 Daily performance of EUR/USD and ALL/USD



Source: Bank of Albania

The volatility in the ALL/EUR ratio in the domestic market has been stable, unlike the volatility shown in the ALL/USD ratio, which was high due to the settings in the international markets. The correlated performance in EUR/USD and ALL/USD ratios suggests the importance of the euro in the exchange rate performance at home and the pronounced responsiveness of the ALL/USD ratio to the developments in the international markets.

Chart 41 Exchange rate volatility[58] in quarters



Source: Bank of Albania

As of end October, the lek exchanged against the euro at 123.92 ALL/EUR and against the dollar at 96.78 ALL/USD.

ENDNOTES

[1] In the second quarter of 2008, GDP grew by 2.8 percent in quarterly terms.

[2] In the third quarter, the U.S. dollar appreciated by about 3.7 percent against the euro compared with the previous quarter.

[3] In August, inflation rate marked 5.4 percent, while in September it marked 4.9 percent.

[4] Fast growing developing economies, Brazil, Russia, India and China.

[5] The current accounts of China and Russia account for 9.5 percent and 6.5 percent of the GDP.

[6] In April, inflation rate in China marked 8.5 percent.

[7] Since the early 2008, Italian Stock Exchange has dropped by about 48 percent.

[8] In August, inflation rate marked 4.2 percent, while in September it dropped to 3.9 percent.

[9] Investments shifted downward during the last quarter of 2007, when they contracted by 4.7 percent.

[10] In September and October, inflation rate marked 4.7 percent and 4.0 percent, respectively.

[11] Effective Overnight Interest Rate. It is computed as a weighted average of all overnight unsecured lending transactions in the interbank market between Euro zone banks.

[12] The Euro Interbank Offered Rate is a daily reference rate based on the averaged interest rates at which banks offer to lend unsecured funds to other banks in the euro wholesale money market.

[13] The London Interbank Offered Rate is a daily reference rate based on the interest rates at which banks borrow unsecured funds from banks in the London wholesale money market.

[14] OIS - An overnight indexed swap. It is an important measure of risk and liquidity in the money market.

[15] The Central Bank of the United States.

[16] European Central Bank.

[17] OPEC countries reduced their supply by about 3 percent in September, compared to the previous month.

[18] Borrowing money to supplement existing funds for investment.

[19] IMF World Economic Outlook Update, November 2008.

[20] IMF, Global Financial Stability Report, October 2008.

[21] The meeting of quantitative objectives is an obligation of the Bank of Albania in view of observing the EFF/PRGF arrangement with the IMF and the Albanian authorities.

[22] Preliminary data.

[23] This item's inflation was -1.4 percent in October. Average inflation for August to October was -3.7 percent.

[24] Net inflation is derived after excluding the effect of very volatile prices or administered prices from headline inflation rate.

[25] Inflation excluding food prices and administered prices and the other excluding oil prices marked 0.9 and 0.8 percent, respectively, in a second

measure.

[26] One of the most sensitive indicators of inflationary pressures originating from demand side.

[27] Core inflation, computed using the permanent exclusion method of certain items.

[28] Due to improvements in the re-grouping of some basket items according to the measures referred to in the table, inflation rates have reflected slight and systemic changes which have not distorted the trends shown in the analyses to date.

[29] Price rise in 'newspapers, books and school items' (September 2008).

[30] ETI aggregates specific indicators of the main sectors of economic activity (industry, construction and services) and of consumers. The series of indicators used in the construction of the ETI are seasonally adjusted.

[31] House Price Index is measured only for Tirana.

[32] House Price Index has been measured since the second quarter of 1998.

[33] The average refers to the period from 1998 to 2008.

[34] The indicators are seasonally adjusted.

[35] During 2007, trade deficit as a share of GDP for some regional countries was: Serbia (22.0 percent); Bulgaria (25.3 percent); Macedonia (21.3 percent) and Romania (14.5 percent).

[36] Merchandise exports and imports with Italy and Greece account for 31.6 percent and 15.4 percent of total trade exchanges volume. In addition, there has been an annual increase in trade exchanges with Austria and Germany.

[37] The annual increase in trade exchanges with China, Russia, Macedonia and Croatia is 22.9, 43.1, 45.02 and 8.8 percent, respectively.

[38] The annual drop by about 11 percent in tax on profit is strongly related to the change in the tax on profit from 20 percent to 10 percent starting from 1 January 2008. In addition, while implementing the fiscal package for 2007, which among others brought about the reduction in customs duties, revenues from this category have dropped by about 14 percent relative to the previous year.

[39] The drop in non-tax revenues compared to the previous year owes to the Bank of Albania's transfer of profit, which upon the requirement of the Ministry of Finance it has been paid only for the period January to April 2008.

[40] From progressive to simple tax starting from 1 July 2007.

[41] The financing of Durrës-Kukës road accounts for about 50 percent of total capital expenditures. This project is mainly funded by foreign financing (about 90 percent).

[42] Cumulative realization of fiscal indicators as of end September each year.

[43] These estimations have excluded the exchange rate effect. However, in annual terms, the exchange rate effect is inconsiderable.

[44] As of September 2006, the loan portfolio time structure is as follows: short-term loans - 30 percent; medium-term loans - 32.6 percent; and long-term loans - 37.4 percent.

[45] Annualized quarterly growth measures the quarterly growth exponentially converted into an annual growth rate.

[46] Average wage in the public sector (budgetary and non-budgetary).

[47] Measures related to the declaration of the number of employed persons and their income by the private enterprises pursuant to the Council of Ministers Decision No. 285, dated 4 May 2007.

[48] According to INSTAT (Short-term Statistics), wages refer to the fund of wages paid to all employed persons during the period.

[49] The approximate indicator of production index is constructed by dividing the deflated turnover indicator by the number of employed persons index (constructed by Bank of Albania experts on the series of Short-term Statistics data (INSTAT, second quarter, 2008).

[50] According to the latest data published by the INSTAT (Conjuncture April - June 2008).

[51] Measured by the unit value index, INSTAT.

[52] Foreign trade with EU member states accounts for 68 percent of the total.

[53] In the first nine-month period of 2008, the lek appreciated against the euro by 1.3 percent.

[54] The analysis of inflation expectations is based on the results of the surveys carried out by the Bank of Albania: Business Sentiment Survey, Consumer Sentiment Survey and Monthly Banks' Survey.

[55] Quarterly difference of indicators in the form of balances.

[56] Monthly Banks' Survey is carried out on monthly basis.

[57] NEER – Nominal effective exchange rate, measured against two currencies according to an approximate share they have in trade with abroad, EUR (80 percent) and USD (20 percent). A positive change of the NEER implies the appreciation of the lek.

[58] Measured as quarterly average of exchange rate volatility. The latter is measured as the standard deviation indicator.

SPEECH OF THE GOVERNOR OF THE BANK OF ALBANIA, MR. ARDIAN FULLANI

At the regional meeting 'The banking system: Promoter of economic development"
Kukës, 12 September 2008

Dear Governor,
Dear Mayor of Kukës Municipality,
Dear Mayor of Prizren Municipality,
Dear Mr. Uldedaj,
Dear Mr. Basha,
Dear participants,

I am delighted to be here today and there are many good reasons why I was looking forward to this gathering.

For the second time within a relatively short period of time I see this gigantic engineering work growing every day and taking its final shape. Every single person visiting the road segment Rrëshen – Kalimash understands that what they have in front of them is an extraordinary engineering, civil, useful, far-sighted and patriotic work.

Similarly, my return to Kukës after quite a long time has surprised me. There is now a completed airport, cross-border activity has intensified, the climate is extraordinary and soon this town will turn into a city with modern infrastructure. Numerous opportunities are ahead of you. Your cleverness stands in perceiving them and making use of them cleverly in order to enhance the opportunities of the Kukës community and the North-East region.

The other reason for making me feel delighted is the presence of my Kosovar counterpart, Mr. Hashim Rexhepi. This meeting is of special significance. The Central Bank of the Republic of Kosovo is now growing and consolidating day after day under the management of an Albanian professional unlike some time ago when the management of the central bank was the task of a foreign central banker.

Meetings of this kind are now turning into a tradition. After holding similar meetings in Korça, Gjirokastra, Shkodra and Saranda we are now being introduced to a new reality of the North-East region, and I believe that the town of Kukës plays a key role in this area. Through these regional meetings we aim to be in touch with the economic and financial reality of different regions in Albania. Given the weather, cultural, social, geographical, demographic, objective and subjective characteristics, each region has different economic and social development opportunities and levels. From this viewpoint, we aim to fully be acquainted with these specific characteristics, identify all the financial and natural resources and formulate 'recipes' and other advice which would help in making more rational use of them.

Beyond what I previously stated, I would like to clarify that the exploration of the potentials that the different regions have to offer and the identification of their level of use is also essential in terms of the banking system's activity, in particular of the geographic expansion and financial intermediation.

Another major reason motivating the Bank of Albania to organize these meetings relates with the establishment of a more effective communication channel between the Bank of Albania and the public. We believe that the direct contact with various social groups in different geographic regions (that is to each and every family), in addition to the traditional means of communication, press conferences, monetary policy or financial stability reports, is a very efficient tool and often determinant.

I would like to dwell today on some matters of interest to the entire audience. First I would like to make a brief outline of the Bank of Albania's latest analysis of the economic and financial situation in Albania:

In brief, three are the main developments of greatest interest to the audience:

With regard to the international developments, the economic and financial situation has been very complex in the last months. Inflation has turned into a point of concern in most foreign economies, mainly driven by the high prices of raw materials, oil and food. In addition, economic activity in developed economies has experienced sharp turns. Euro area economy is at present in front of many questions, while the US and some Asian economies have shown slow rates of economic growth. Credit crisis has caused many reputable international institutions to experience large financial losses and its contamination process is still present. Recently, the two US mortgage giants, Freddie Mac and Fannie Mae, which were on the verge of collapse, were subject to an unprecedented and costly rescue plan designed by the US Treasury Department. All these issues have triggered uncertainties in the markets, causing the future forecasts to be more challenging and the participants' exasperation to peak.

I would consider the immunity shown by our economy in terms of price stability as the most outstanding development. Albania's economic activity is progressing in line with our previous expectations. A few days ago, INSTAT published the inflation figure for August 2008, according to which annual inflation marked 2.5%. Following a 12-month period of inflation rates standing at around 4-4.5%, in line with our forecasts, it is assessed that inflation will fluctuate in the next few months at around 3%, which is our quantitative objective.

Worth to note, however, is that the risk for its upward deviation is still present and it mostly relates with the international developments mentioned above. The main risks stemming from the internal environment relate to any possible deterioration of the energy situation and the plausible implications with the fiscal situation in the future. For the moment, the main risk stems from

the lagged effects (otherwise referred to as second round effects) of certain developments such as the rise of wages beyond an acknowledged logical level. Any similar rise would generate new inflation, to later impose another rise in wages, which in turn would again and again trigger inflation. I do not think this is the right path. Wage-inflation spirals have been studied relatively early and they represent the least appropriate recipes to offset the inflation effects.

I would like now to move to the latest performance of the banking system, with both its good sides and the associated risks. The Albanian banking system is going through a phase of swift development and promotion of new products. I believe you have noticed that many banks have been engaged in aggressive marketing strategies which promote different types of household loans and terms and attractive interest rates for the collection of deposits. In addition, banks' branches and agencies have constantly expanded. Only during the present year, 73 new branches and agencies have been opened and 15 others are in the process of being opened.

The same characteristics more or less apply to the District of Kukës as well. Currently, six private banks perform their banking business in Kukës, while two other banks are in the process of commencing to operate. As of end June 2008, the banking system has extended a total of about 1.2 billion leks of new credit (around 15 million USD) of which 66% to households and the rest to the businesses in the area. It is pleasant to notice that this figure accounts for about 66% of deposits collected in this region, providing evidence for a relatively high financial intermediation level.

The rapid development of the banking system, the high competition in the banking market and banks' eagerness to win their market shares requires greater prudence. The Bank of Albania has taken a number of measures to increase prudence with a view to attaining the banking system stability. In its last meeting, the Supervisory Council of the Bank of Albania took the following decisions:

- Some amendments to the regulation 'On risk management in the activity of foreign banks' branches';
- Some amendments to the regulation 'On capital adequacy ratio';
- Some amendments to the regulation 'On credit risk management';
- Approval of the regulation 'On minimum requirements for information disclosure from banks and branches of foreign banks';
- Approval of the regulation 'On transparency of banking and financial products and services'.

The entire package of regulations was launched in the open forum we had this spring with the banking system. This package aims to better discipline the banking system in terms of assessing credit risks, setting penalties for banks when non-performing loans increase, encouraging lending in lek and enhancing transparency with bank clients for each product and service.

Dwelling further on the issue of financial stability, I would like to underline that the Bank of Albania is scrutinizing cautiously the developments in the external sector of the economy, which for the moment remain a concern in terms of long-term developments in economy. The stable growth of imports in goods and services and the current deficit deepening require special attention. The main implications relate among others with the financial stability at home while they have their roots in the imposed correction of long-term imbalances within a very short period of time.

Triggered by the rise in real estates prices, the steady appreciation of the lek, workers' remittances and the rapid growth of credit and budget expenditure during the present year, the high current deficits have become a dominant phenomenon in the external sector of the economy. Their automatic and abrupt adjustment would prompt the correction of exchange rates to the rapid and strong depreciation of the lek, drop in private and public consumption and reduced economic activity which could generate crisis in the external sector and spread to economy, hence, jeopardizing the financial stability at home. Availing myself of this opportunity to address to the audience I would like to explore this issue further. Skipping the theoretical arguments, I would note that the high current deficits mainly originate from the consumers' behaviour.

In plain words, what I am trying to say is that in a general economic level we consume more than we produce. This extra consumption, which is mainly financed through borrowing, is mainly driven by our expectations for higher income in the future. That is, in a household level, there is deficit, triggered by the insufficient income to cover household consumption.

The international financial crisis and the negative consequences on the global economic and financial activity stem from household consumption beyond the sources (providing additional financing from banking loans) and the rise of real estate prices. This consumption approach was followed by the increase of current deficit and long-term liabilities for households.

When these liabilities exceeded the long-term equilibrium level, the household sector could no longer pay off the accumulated debt.

What were the consequences?

An extreme and constrained adjustment of consumer behaviour and approach. Households could no longer pay their debts to banks and maintain the same level of consumption. These individual imbalances altogether appeared at a macro level, mainly in the form of abrupt fall of demand, slower economic activity and depreciation of the exchange rate (US dollar depreciation). Naturally, the financial system could not escape from being affected by this challenging contagion.

What I have stated above points out the necessity of making thorough analysis at a micro level in addition to the macro ones. That is, the recipes for

attaining a stable macroeconomic situation should begin and be sustained by prudent analyses at a micro level.

It is for this reason that I would like to dwell on and explore one of the indicators that affects the structure and modelling of household budget. I refer here to workers' remittances which have played a key role in smoothing consumption and at a lower level, meeting investment needs, mainly for real estates and small household businesses. Remittances have somehow offset the low productivity and the negative effects triggered by unemployment. In addition, they have helped to preserve financial stability, by establishing more balanced ratios between income and expenditure.

Given the importance of workers' remittances, one would rightly raise the following question: What is their perspective? How can they be managed more effectively?

For e relatively long period of time, they have been vital to our country. According to a Bank of Albania survey on the first quarter of 2008, about 26% of Albanian households living in the territory of the Republic of Albania are recipients of remittances from abroad. Households' geographical distribution indicates that 59% of recipient families live in the rural areas while the rest in the urban ones, receiving about 66% and 34% of total workers' remittances, respectively. Remittances represent the most important component of rural families' monthly income, accounting for about 40%.

The largest part of workers' remittances (about 70%) for the first quarter of 2008 was used for non-productive purposes. About 48% was used for consumption, which entails meeting households' everyday needs for food, clothes, furniture, etc., 16% for construction and reconstruction and 10% for education and medical purposes.

Around 19% of remittances are used for investment and savings, providing evidence for their economic impact on Albania.

Despite these figures, their future prospective is yet unclear. The integration of Albanians into their host countries, their economic and financial situation and other similar reasons have a negative impact in the long term. Our analyses and assessments show that the difficult economic situation the developed economies have been experiencing, expressed in the economic slowdown, unemployment growth and increase of inflation, has also provided its impact on the performance of remittances which have grown less this year relative to the previous years. Empirical studies of the Bank of Albania show that the cease of these flows would put our consumption model and the long-term balance of the external sector of the economy in a difficult position.

Our concern related to the household budget stands in the fact that the behaviour model we adopt at a household level can also affect the behaviour model of given regions.

The Albanian economy has by and large made evident progress, detaching itself from the IDA country group. Macroeconomic indicators have for a relatively long period been positive and stable. However, beyond the nationwide average indicators, detailed statistics by regions indicate that the welfare in mountain areas has progressed at slower rates relative to the other regions. According to World Bank assessments, an average resident in the mountain area has 12% less per capita real consumption than the average resident in Tirana, while in 2002 this figure was 9%. According to the same source, the average rural coast resident has 34% higher per capita consumption than the average mountain rural resident. Generally, poverty has a strong positive relation with the family size and a negative relation with age and education.

In contrast, the District of Kukës has great potentials for more prosperity in this area. First, your district is distinguished for its rare natural beauty and diversity from the mountain and ethnographic tourism viewpoint. The opening of the border with Kosovo in particular has provided us with real opportunities to perceive the Northern Alps as a single complex with their continuity to Kosovo and why not to Montenegro. I think the completed airport, which could very well be used for the transportation of winter sports fanatics, is another strong point. It is the local authorities' task to undertake in co-operation with the local stakeholders, projects and feasibility studies, which in a later time may be submitted and presented to the central authorities or the specialized international operators. I would like to inform you that at the moment, their interest is overwhelming and concrete. Time is ripe for you to increase the marketing of these potentials and point out their strong advantages accurately.

Second, your district is well-known for being rich in minerals. I do not know if you have any geological inventories or maps which accurately identify the mineral resources. If you don't, this is too late. The current price structure is very favourable and I believe that any reactivation of the existing mines and the opening of new mines implies more employment, more hope for this region and fewer migratory movements.

Third, your district, in particular the town of Kukës, finds itself in a crucial economic crossroad, not only in terms of roads but also of air. Unfortunately, statistical information related to cross-border economic and financial activity is missing. Nonetheless, I have to admit that the potentials are not being rightly handled. We are the same people, speaking the same language and sharing the same customs, hence, there is no point for us to be held back by the absurd barriers of time. The completion of the new road and its stretch to the largest harbour in the country create the proper grounds to turn the town of Kukës into an extraordinary transit point for passengers, goods, services, art and culture.

Fourth, your district should make clever and great use of the presence of a university in this town. My call is just plain: invest in mobilizing a professional and specialized teaching team. Spend on education, on knowledge and the culture it produces. In this context, the local government could set financial

stimuli. The final goal will be to establish a national educational centre, which serves to the local community living on both sides of the border. I honestly hope the future managers grow and be a product of this university.

Fifth, I believe you should pay your utmost attention to the presentation and spreading out of information on the potentials your district has to offer. Pretending you possess something that is worth is only one side of the coin. The other is how able you are to find buyers, to get them buy what you want to sell. In this context, the complete identification, regulation, presentation and promotion of these great potentials are of prime priority. For analogy purposes, I would like to bring an example: It is now for two years that the Bank of Albania has been organizing the yearly competition 'The Governor's Award for the best diploma thesis'. Last year, the third prize went to a student of the University of Shkodra for a very original thesis which introduced the potentials and opportunities of the Puka Region, the development of mountain tourism and the positive macroeconomic impact it will bring to the region. This paper was assigned a prize for the originality of the topic chosen to be explored and for the economic impact its presentation may have. The thesis did not only seek to present a profitable business opportunity, but also make an assessment of the positive impact this investment would have on the life of the community. The positive influence on the latter is crucial for important strategic investors. We awarded this paper not only for its original exploration by a passionate student from Puka, but also to increase public awareness and promote this new and modern mentality. When a single student manages to produce this much, a university, a local community and all of us together have great potentials to achieve even more. I brought with me today a copy of this thesis.

Dear participants,

I tried to briefly discuss some issues that I personally find vital and benefiting for you and the Bank of Albania. Perhaps my speech may have sounded somehow provoking; however I believe this is the right time for us to put a halt to some transition phenomena or impairments. Although I am aware of the numerous and complex problems, I can clearly see some light at the end of the tunnel. The chances are right there. Our duty is not to waste them. On behalf of the Bank of Albania I assure each institution, individual, company, undertaking or initiative that we are open to collaborate for the best of future progress and prosperity of this community.

Thank you once again for your attention and hospitality.

SPEECH OF THE GOVERNOR OF THE BANK OF ALBANIA, MR. ARDIAN FULLANI

At the Open Forum with the Albanian banking system's players
Tirana International Hotel
Tirana, 29 September 2008

Dear heads of commercial banks operating in Albania,
Dear participants,

It has almost been 6 months since the first open forum was held, at the core of which were the achievements and challenges of the Albanian banking system.

Today's forum is a follow-up of the debate which commenced 6 months ago with the good will and goal to further bolster the banking system's stability in Albania. I consider the first forum a successful one, given that it generated a number of important decisions that have been made recently. In addition, I have the strong conviction that the discussions to be held this afternoon will be productive and will serve to the prudent examination of the banking system's activity, in particular in the context of the recent developments in the global financial markets.

To begin with, I would like to provide a general overview of the banking sector's financial situation and the extent of impact from the developments in the international financial markets. During the first half of 2008, the banking sector maintained its stable growth pace.

The Albanian banking system is lucrative, well-capitalized and liquid. The good financial result continues to be driven by the rapid growth of high return on investment activities. As of end June 2008, credit portfolio of the banking system accounted for nearly 43% of total assets, increasing by 3.6 percentage points relative to end-year 2007.

Consumer deposits remain the main funding source for the activity, accounting for 80% of total assets. Business funding through the credit lines from the parent banks increased to 9% of total assets in the first half of 2008.

As of end June 2008, return on average assets was estimated at 1.3% while return on average equity equalled to 16.6%. Capitalization indicator of the financial sector, and in particular of the banking one, increased slightly. Capital adequacy rate of the banking sector showed a slight increase to 17.3% as of end the first half of 2008.

Liquidity indicator continues to remain at higher levels compared to the other regional countries. Liquid assets of the banking sector share 47% of total assets, dropping by about 5.7 percentage points relative to end-year 2007.

The spread of the U.S. economy crisis to the international financial markets and the uncertainty for the nature of its effects, the institutions' map, the types of instruments and its extent, do theoretically increase the risk of its impact on the financial system at home. Basically, this crisis has not provided its impact on the banking activity in Albania.

The Albanian system's immunity to this crisis arises from certain factors, namely:

- The relatively low exposure of the Albanian financial system to international financial institutions;
- The low integration level in general; and
- The well-capitalized activity of European banking groups and their branches operating in Albania.

In general, we consider that no risks that may be materialized or which may harm abruptly and severely the activity of the financial system are identified. However, I would like to dwell on the risk analysis of the banking sector.

Scenario-based risk analyses confirm that the banking sector has the capacity to cope with the various risks that may arise as a result of the unwelcome shifts in the exchange rates and interest rates.

Prudent monitoring of assets' quality is required and time is ripe to pay greater attention to the performance of liquidity indicators. With respect to the latter, the following aspects are crucial to keep under consideration:

First, the absence of a developed money and securities trading market curtails the financial institutions' capacities to meet the unexpected liquidity needs through the sale of assets considered as "liquid". In addition, as a result of the financial crisis in the international markets, the trading of some securities, which were previously considered as favourite to the investors, has become challenging.

Second, the differences in the size of the banking sector's institutions, the collateral's quantity and quality, and the restrictions for the direct exposure among institutions hamper the circulation of liquid funds in the interbank market in the duly time and extent.

Third, given the enhanced competition, there is a risk that significant disproportions arise between assets and liabilities in the balance sheet, with regard to type of currency and maturity term.

Fourth, some institutions have also turned to borrowing from parent banks in order to maintain the lending promptness and size.

Fifth, owing to objective factors that have conditioned the lack of efficiency, the banking sector at home has been characterized by very high liquidity levels. Given the enhanced competition and improved efficiency, it is objectively

expected that liquidity indicators being to shift downward. These factors hamper the setting of the optimum liquidity level, in which the enhanced efficiency in fund use does not shackle the institution's capacity to cope with the business risks.

All these elements provide evidence for the need that the banks' governing structures follow practices that allow the institution itself to meet the expected liquidity needs independently, however, having options which improve their capacity to generate liquidity in urgent cases. You must re-evaluate the securities' portfolio quality, in particular that in foreign currency, in order to attain the optimum characteristics of safety and tradability. In addition, the portfolio of placements in foreign currency in the form of deposits or related products with international financial institutions should have as its main objective the safety of the investment and the adequacy of maturity term.

In a broader context, you should reassess the adequacy of certain indicators' level in terms of differences in maturity terms and the type of currency of assets and liabilities.

Assets' quality, which is mainly affected by the quality of loan portfolio, remains a constant risk to the banking business in general. The reduced quality of assets does not only impair the institution's income, but also harms its liquidity position. In the case of the Albanian banking sector, the loan portfolio quality has been decreasing, although at gradual rates, and the situation is presented as entirely manageable. The rapid growth of credit and the challenges certain sectors of the economy that have been lent significantly may be faced with, are factors that will continue to exert pressure on the loan quality in the near future. Hence, it is crucial for you to implement a policy of rapid detection of non-performing loans and promptly create reserve funds. It is for this reason that the Bank of Albania will increase the frequency of controls and the efficiency in monitoring and checking this process.

The Bank of Albania, through its Supervision Department, has prudently and constantly monitored the developments' dynamics in the banking sector, part of which are also the recent developments related to interest rates on market products. We consider these interest rates as aggressive, providing their impact on the profit margin and representing a potential risk to the structure of balance sheet.

As you are aware, we have required from you information related to the strategy and procedures followed by your bank with respect to the application of these terms and interest rates, the purpose and grounding basis for the decision-making process and the structures involved.

It is essential for the Bank of Albania that any decision made is a product of deep and comprehensive analyses from the most junior expert to the decision-making structures, placing in addition special emphasis on the impact on the financial result. The entire process should be transparent, understandable and absorbing by the public at large. Otherwise, it will provide opposite effects.

This summer provided evidence for the fact that competition in terms of gaining market shares is a determinant element of the Albanian banking system's behaviour. It also holds true that we are dealing with one of the core principles in the functioning of free market economy: competition. However, given the fact that the other market principles, namely profit maximization, are not on the same wavelength, the balances between them may be distorted and consequently, different risk elements may be present. I repeat from the previous forum that it is necessary for you to consider the macroeconomic consequences of your behaviour at an industrial or institutional level, since they are important factors which ensure the long-term stability of your institutions and the system on the whole.

The difference between large and small-size banks, when public confidence in the system in general is in question, is relative. Each bank has its role and share in the system and the difference between the concept "a small bank" or "a large bank" in the context of systemic risks, is ever-increasingly reducing.

In addition, the U.S. financial crisis was caused by the imprudence of financial institutions to assess the stability of private debt and accurately weigh the effect of macroeconomic developments on the U.S. household budget. Its consequences remind us of the expression "there's no such thing as a free lunch".

With regard to the issues explored in the forum held in April, I would like to bring to your attention two other issues that I believe remain indisputable priorities for our work in the future.

As promised in the first forum, the Law "On repurchase agreements" has become effective upon its entry into force on August 19th 2008. Although this project was pre-announced by the Bank of Albania, according to the information made available by the operational staff of the central bank and the respective commercial banks, we notice that the entry into force of this law has found you unprepared. Hence, I require from you that the issue of binding contracts for the execution of repurchase agreements be placed at the top of your short-term agenda.

Your legal staff should equally assess both the retail and the Treasury Department products. Judicial and operational assistance will be provided by the Bank of Albania, but on the other side the central bank will not intervene in solving the liquidity needs in case these needs arise from the non-observance of the law on repurchase agreements.

I find it pleasing to confirm that after a general agreement on their usefulness, the package of regulations we brought to you in the first forum, has now become effective. The Bank of Albania is now expecting swift responses, in order to minimize their obligatory enforcement by us. The new regulations increase prudence in the elaboration and protection against foreign currency credit risk. I do not want to fail to disclose our stance that Albania needs a liquid and well-capitalized banking system given the situation we are going

through. Regulations on transparency and the obligation to disclose are another important part of the last package.

We have now taken steps to a more regulated market and other parties should follow the same steps as well. I refer here to banks' clients who at present have, can and should be acknowledged of all their rights in relation to the banks servicing them.

In every meeting with you, I will highlight the need of strengthening the control on the business of the institutions you are governing. In addition to the fact that only this way the personal philosophy of each of you with regard to the development of the institution will come true, this process is vital to the well-functioning and safety of its business, even more under its rapid growth. In this context, the control structures should act rightly and extend to all the bank's activities. Given the absence of a good collection, processing and reporting process of the business data, the control process on the institution's activity finds itself jeopardized.

The process of the banking sector's data collection and processing has improved over the recent years as a result of investments in modern technological systems. In many cases, however, it is observed that the adoption of these systems is made only partially and hastily. Their full potential is not used and the banks' personnel may not be fully familiar to their use; hence, weakening the necessary human control on these systems. Consequently, the control process on the institution's activity is segmented and the process of data collection, processing and reporting at the required quality and time is hampered. As a result, you being heads of commercial banks and us the system's regulatory authority, risk to take decisions on data which are not fully accurate and furthermore are "old". Being present in different banks and at different levels, a final solution should be found to this issue. This situations needs to change and therefore, I require strong commitment from you and your shareholders.

In more concrete terms, I require each bank to promptly:

a) Make a "cost/risk" analysis of all its activities and expand the information technology systems, at least to those areas of the activity where there is greater risk in terms of absence of accuracy in processes;
b) Place all branches and its activity in a "net";
c) Strengthen the human control structures in all the business processes, in particular in the treasury operations, deposit collection, credit extension and execution of transfers and payments;
d) Document and keep track of the entire process, evidencing clearly the responsible structures and people, and regulating the process of delegation of responsibilities.

Going back to the situation in the international financial markets, I would like to highlight that any negligence with regard to the serious assessment of the latest developments in these markets cannot be forgiven to any of us.

The monitoring and assessment of each event, news, action or response from the participants in the different markets should turn into every day routine in our work, in particular when energetic measures need to be taken in line with a given situation. In this context, the possible extension of credit lines from parent banks and the possible increased dependence of the banking sector on them represent an increased element of risk. You must avoid at any cost your dependence on these funds and pay careful attention to preventing the deepening of the spreads that may arise in the type of currency and maturity term. In the context of global economic developments, the uncertainty related to the future prospects in consumer prices and economic growth in the euro area EU countries and the USA, will affect the performance of interest rates in the money and credit markets and the exchange rate performance. These changes may affect the internal market through the exposure of the Albanian financial sector to assets and liabilities denominated in foreign currency. In addition, there is a risk that the challenges the economies of the EU countries and broader are going through be reflected in Albania through the fall in workers' remittances, deterioration of trade deficit and decrease of foreign direct investment.

Even though the materialization of these risks and their extent are not expected to be significant, you must assess the impact of these scenarios in your development objectives and take the necessary measures to be protected from them. In a broader context, in your relations with the parent banks, remember that you are leading banking institutions operating in Albania and that you are accountable to the Albanian authorities and the Albanian public for the well-functioning of your institution's business.

Increased vigilance is required from you in order to maintain low exposures in the international financial markets and ensure a well-capitalized and liquid business.

The Bank of Albania will constantly monitor and confirm that you are taking the necessary concrete measures to maintain and improve the capacity to constantly generate a positive financial result, by preserving the assets' quality and the liquidity indicators. If necessary, being the regulatory authority of the banking sector, the Bank of Albania will orient and support these measures through constant revision and creation of necessary regulatory stimuli.

PAPERS PUBLISHED IN THE ECONOMIC BULLETINS OF 2008*

A DISCIPLINED APPROACH TO PORTFOLIO MANAGEMENT AND TRADING

March 2008

Rezart Molla

This paper aims to give a short description of the trading process in general and the steps through which a disciplined trader and/or portfolio manager should go in particular. Its content comes on the top of a previous document which was a feedback for the internship the author attended in the World Bank Treasury in Washington D.C. during the months of October 2007 on reserve management. The back-bone of the approach is the one World Bank currently uses, therefore the author fully recognizes the authorship of the World Bank staff on the core concepts behind this paper. However, the three-year experience the author has had as a portfolio manager at the Bank of Albania surely helps in providing a meaningful description.

The document is titled T.R.A.D.E.M.A.P., where every character stands for the first letter of each of the stages of portfolio management process from inception to execution and the follow-through. The paper describes the following stages:

(1) T-Theme, (2) R-Review, (3) A-Assess, (4) D-Decision, (5) E-Execution, (6) M-Monitoring, (7) A-Adjust, (8) P-Performance.

After going through the eight stages of portfolio management process, the author concludes that this process involves strong human emotions and that market gyrations can cause similar and almost one to one gyrations to these feelings which might have consequences on portfolio's performance.

INDEX OF FOREIGN PRICES/UNIT VALUES OF ALBANIAN IMPORTS

June 2008

Risan Shllaku

The scope of this discussion paper is to propose an approach for an index of Foreign Unit Values/Prices of Albanian Imports. It also offers a brief review of index number theory, which unveils important aspects that need to be kept in mind by economists and policymakers while performing economic analysis and recommending or implementing economic policies. The proposed approach is based on this review of index number theory.

The paper is organized in the following sections. Section 1 introduces while section 2 offers a brief discussion of index number theory and of the main

issues related to price indices. Section 3 presents an approach based on the indices of export unit values/export prices of the main countries from where Albania imports. Because of data availability reasons, the indices of export unit values are used for some of the foreign countries and the indices of export prices are used for other foreign countries. The advantages and disadvantages of this approach are obviously elaborated. Finally, section 4 offers a brief conclusion.

** Opinions expressed in these papers are those of the authors and do not necessarily reflect the official opinion of the Bank of Albania.*

PAPERS

EXCHANGE RATE PASS-THROUGH IN ALBANIA*

ABSTRACT

This paper assesses the extent and the speed of exchange rate pass-through to consumers prices in Albania, using vector autoregressions models, VAR. Evidence shows that exchange rate pass-through for the period 1996-2006 is complete within a year. Meanwhile, a sub-sample analysis shows the incompleteness and the decline of pass-through to consumer prices after the year 2000. Developments in market structures, the stability of our currency, ALL, the low inflation environment and higher credibility in the Bank of Albania, rank as good justifiers to such behavior. Nevertheless, this does not mean that exchange rate developments have no longer an importance on consumer price formation. This paper shows that the effect of exchange rate on prices is not easily captured by direct analyses of data on exchange rate and consumer prices. Therefore, the monetary authority should be cautious, and choose the right reaction toward exchange rate movements. If the volatility of exchange rate increases in the future, there is no guarantee that the reaction of the economy and especially consumer prices will not change.

Classification: JEL:E31, E52, F41

Key words: Exchange rate, consumer prices, VAR, impulse response functions, Albania

I. INTRODUCTION

Decades ago, many economists have tried to find a close link between changes in the exchange rate and the level of prices in a certain country. Initially based on Law of One Price there were models assuming a unitary link between them. Later on, monetary models of open economy were based on absolute (and later on relative) Purchasing Power Parity to identify the behavior of exchange rates. Nevertheless, many empirical tests did not support these assumptions, arguing that exchange rate changes are not completely reflected in the price level (incomplete exchange rate pass-through). Nowadays, numerous models/theories explain why the exchange rate pass-through is incomplete. Furthermore, there are various empirical works indicating incompleteness and the decline of exchange rate pass-through.

The aim of this paper is to provide empirical evidences on the degree of exchange rate pass-through to consumer prices in Albania. The motivation stems from the role of exchange rate in a small open economy, like the Albanian one. Based on the importance of the exchange rate in a small and open economy, the Bank of Albania has not ignored exchange rate movements in ALL[1], despite being in a flexible exchange rate regime. Developments in the ALL exchange rate have been closely monitored and in some cases there have been interventions in the foreign currency market in order to smooth large volatilities in the exchange rate. In addition, the exchange rate is one of the main variables included in the process of inflation forecasting in the Bank of Albania.

To meet the aim of this paper we rely on the theoretical relationships that exist among our variables of interests and focus on the estimation of these relationships with vector autoregression models. Then, we quantify the degree of exchange rate pass-through in different periods by impulse response functions, where shocks are identified by a standard Cholesky decomposition. In this case, the ordering of the endogenous variables follows both theoretical and empirical considerations. Furthermore, we perform some robustness tests by using alternative identification schemes. As a last exercise, we perform a sub-sample analysis, in order to analyze the changes on the degree of exchange rate pass-through in time.

A quick look at the results indicates that they are in line with evidences found for other countries regarding pass-through. Exchange rate pass-through to consumer prices in Albania appears almost complete but decreasing. The results for the entire period show a relatively fast reaction of consumer prices in the presence of an exchange rate shock. Such a shock has a relatively high importance in explaining consumer price variance compared with other shocks. These results are robust to different identification schemes. The sub-sample analysis shows the incompleteness and the decline of pass-through.

The rest of the paper is organized in two chapters. Chapter 1 reviews the literature on exchange rate pass-through to prices. Here we pay a special attention to the literature on the role of exchange rate pass-through in countries with inflation targeting regime and on the role of exchange rate pass-through in new Member States and candidate countries to EU. Chapter 2 presents the empirical analyses on exchange rate pass-through in Albania. Sessions on this chapter cover data and methodology issues and present the analyses of the results. The final chapter presents main conclusions.

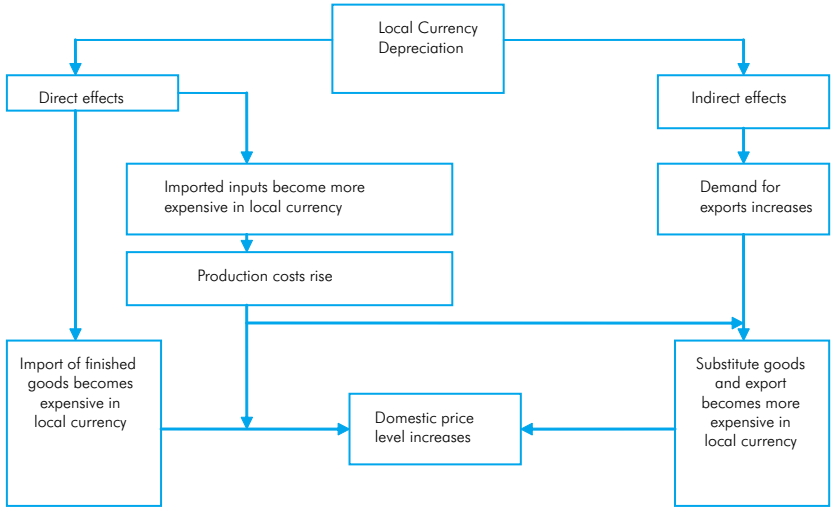
II. LITERATURE REVIEW

In this chapter, initially a definition of the exchange rate pass-through is given. Then, we present a summary of the literature on exchange rate pass-through to prices with an emphasis on the role of exchange rate pass-through in countries with inflation targeting regime and on the role of the exchange rate pass-through in new Member States and candidate countries to EU.

DEFINITION

In literature, the term "pass-through" is found with different definitions. Often, such definitions are arranged in two categories, according to stages of exchange rate pass-through. "First stage pass-through" refers to the sensitivity of country's merchandise import prices to changes in its currency's foreign exchange value, after properly controlling for other factors that may influence the evolution of import prices. "Second stage pass-through" refers to the sensitivity of a country's consumer price to changes in its import prices. However, a lot of studies do not distinguish between these stages, defining "pass-through" as the sensitivity of consumer prices of one country to changes in its currency's foreign value.

Chart 1 Exchange rate pass-through to domestic prices



EXCHANGE RATE PASS-THROUGH (PTH)

The relationship between consumer prices and exchange rates has been studied intensively during the 60s and 70s, when the monetary models of open economies were based on the Purchasing Power Parity (absolute and relative), to identify movements in the exchange rates. However, numerous empirical tests did not support these assumptions, which led into thinking that movements in the exchange rate are not completely reflected into the level of consumer prices of a country. Nowadays, many models and theories explain why this pass-through is incomplete.

Some economists emphasize the role of microeconomic factors in explaining the incomplete exchange rate pass-through into consumer prices. These factors depend on structural aspects of international trade, such as: price-setting according to the market by firms in not fully competitive markets, domestic value added in the distribution of traded goods (Corsetti and Dedola 2002; Burstein, Neves, and Rebelo 2000), or the role of substitution among goods in response to changes in the exchange rate (Burstein, Eichenbaum, and Rebelo 2002). According to Froot and Klemperer (1989), the exchange

rate pass-through might be lower when exchange rate fluctuations are high and exporters in a country endeavor to maintain their market share.

Krugman (1987) and Dornbusch (1987) proposed price-setting to the market as one of the reasons for the deviation from the Law of One Price. In order to understand the incomplete exchange rate pass-through in this model, the market should be thought of as oligopolistic, in which a firm can change its mark-up margin after a change in the exchange rate. Especially if the mark-up margin of a firm decreases while the prices of goods offered by it increase, then the exchange rate pass-through is not complete. This might be a reaction towards the perception of temporary foreign currency misalignments (Marston 1991) or in order to maintain market share (Hooper and Mann 1989; Kasa 1992; Froot and Klemperer 1989).

Campa and Goldberg (2002 and 2004) are often cited about their conclusions on the extent of exchange rate pass-through to import prices. According to them, a decrease in the extent of exchange rate pass-through has been observed in those countries where the composition of the imported goods basket has changed by shifting towards imported goods with relatively lower sensitivity to exchange rate developments (or shifting away from goods with relatively higher sensitivity to exchange rate developments, especially goods related to energy).

The decrease in the exchange rate pass-through can be explained by macroeconomic factors as well. Taylor (2000) has developed the hypothesis that a decrease in the extent of the exchange rate pass-through to prices of final goods has been observed after the decrease of mean inflation rates in developing countries. Consequently, *ceteris paribus*, low inflation has resulted in lower exchange rate pass-through. The relationship between a stable monetary policy and exchange rate pass-through has been investigated in the recent studies of Devereux and Engel (2001), and Bacchetta and van Wincoop (2001). According to them, if exporters set their prices in the currency of the country with more stable monetary policy, even import prices in domestic currency would be such in countries with more stable monetary policy. Therefore, *ceteris paribus*, the exchange rate pass-through would be higher in countries with unstable monetary policy. Campa and Goldberg (2004) offered empirical evidence on exchange rate pass-through in 23 OECD countries. They found that the extent of exchange rate pass-through to consumer prices tends to be lower in countries with lower exchange rate volatility and inflation volatility.

THE ROLE OF EXCHANGE RATE PASS-THROUGH UNDER THE INFLATION-TARGETING REGIME

After the currency crises, during the late 90s and early 00s, a number of countries switched from fixed exchange rate regimes to combinations of flexible exchange rate regimes and inflation targeting. Consequently, the exchange rate lost its primary role in the economic policy debates, in the majority of developing countries. In spite of this, it does not mean that the exchange rate

is no more part of such discussions. On the contrary, numerous questions have been raised regarding the role of the exchange rate, after the adoption of inflation targeting. Among these questions, the following can be identified and mentioned: questions related to the effectiveness of the exchange rate as shocks absorbent under inflation targeting; questions related to the effect of adopting inflation targeting on exchange rate volatility; and questions related to the role of exchange rate developments in monetary policy decision-making under inflation targeting (Eduards, 2006).

Furthermore, many advocates of inflation targeting advise emerging countries not to lose their interest in the exchange rate developments. Hunt, et al. (2000) emphasize that the authorities should improve their analysis and forecasts by developing analytical frameworks that capture the role of the exchange rate in the monetary policy transmission mechanism. For emerging countries, this requires the models to reflect the effect of exchange rate pass-through in domestic prices, the effects of expenditure substitution in the aggregate demand, etc. According to Kara et al. (2005) the central banks that target inflation are much more into inflation forecasting. However, movements in the exchange rate might importantly and substantially affect forecasted inflation. In case a high exchange rate pass-through to inflation is observed, then the monetary authority should monitor the dynamics of exchange rate movements carefully.

Regarding the effect of exchange rate pass-through, literature claims that recently this effect has experienced a decrease in developing countries and that the effect of domestic currency's depreciation on inflation might not be as troublesome in countries that have adopted inflation targeting. However, the explanations offered so far have not been able to provide a strong relationship between this result and the adoption of inflation targeting. The explanations provided so far emphasize that central banks that adopt inflation targeting might intervene directly or indirectly in the FX market (fear of floating) in order to smooth or control the effect of sudden exchange rate movements on inflation. By means of such interventions, monetary authorities counteract to sudden movements in the exchange rate, thus breaking the relationship between inflation and a depreciation of the domestic currency.

Economic literature enumerates many research works that have addressed the above-mentioned issues of the exchange rate after the adoption of inflation targeting. Some of these research works are: Kumhof (2001), Gali and Monacelli (2002), and Parrado and Velasco (2001). Economists like Eichengreen (2002), Schmidt-Hebbel and Werner (2002), Berg et al. (2002), Minella et al. (2003), Reyes (2004), Ball and Reyes (2004a), Ball and Reyes (2004b), and Mishkin (2004) have emphasized that central banks under inflation targeting should take into consideration the relationship between the exchange rate and inflation and should accordingly adjust interest rates in order to offset deviations of inflation from the target, in case these are caused by movements in the exchange rate. Agenor (2002) pointed that the lack of such adjustments might lead to disorders.

According to Hausmann et al. (2001) and Reyes (2003) such adjustments have often been carried out by means of international reserves. Under the circumstances of a depreciation in the domestic currency, the higher the exchange rate pass-through, the bigger the extent of adjustment needed in order to achieve the inflation objective. Given that higher interest rates have a negative impact on output, the higher the exchange rate pass-through, the more costly and difficult it is to maintain monetary stability under inflation targeting. From this point of view, Calvo (2001), Mishkin and Savastano (2001), Eichengreen (2002) and Fraga et al. (2003) think that developing countries might experience great difficulties in managing inflation targeting because they might be more prone to currency crises, by being small and open economies. This point of view is in accordance with the argument of Fraga et al. (2003) and Minella et al. (2003) that, following an episode of pressures from the exchange rate, the inflation objective cannot be achieved without facing huge economic costs, under the circumstances of a high exchange rate pass-through in developing countries. A possible solution to this problem is the use of international reserves, instead of interest rates.

A general conclusion by the literature on issues of exchange rate pass-through is that it is very low or inexistent in developed countries, thus it does not create difficulties in conducting monetary policy. Regarding emerging countries, the coefficients of exchange rate pass-through have resulted to be positive and statistically important in most of the cases, indicating a high exchange rate pass-through, especially before changes of monetary policy regimes. It has been observed that the extent of exchange rate pass-through has decreased in a stable way for all countries, after the adoption of inflation targeting. In any case, even after the adoption of inflation targeting, the exchange rate pass-through remains higher in emerging countries than in developed countries.

According to Mishkin (2004), the exchange rate effect on the process of building expectations and setting prices by economic agents seems to decrease after a period of low inflation, achieved under inflation targeting. Therefore, inflation targeting seems to be of help in limiting the exchange rate pass-through to inflation.

EXCHANGE RATE PASS-THROUGH AND EU INTEGRATION

The exchange rate plays an important role in controlling inflation both in the new member countries of the EU[2] and in the candidate countries[3], Bitans (2005), Darvas (2001), Szapáry (2001). The objective of low inflation is of special importance to all these countries both because of the economic benefits that it brings and of their aspiration to fulfill the Maastricht criteria in order to be part of EMU.

According to Bitans (2005) achieving and maintaining low and stable inflation rates will become more difficult for the countries aspiring to adhere to the EU, because they will be more exposed to inflationary pressures. These pressures might result from the demand side, for instance due to low interest

rates, or from the supply side, for instance due to differences among inter-sectorial productivities that might lead to higher inflation in the non-tradable sector. Under these circumstances, the effectiveness of using interest rates by the central banks will diminish because these countries will have to fulfill as well the interest rates convergence criterion. Therefore, the exchange rate is expected to become an important instrument of monetary policy, which can be used to facilitate nominal and real convergence.

Furthermore, the exchange rate receives a special importance as a monetary policy instrument from the implementation of the ERM II regime as well[4], which comes before the adoption of the Euro. In any case, the effectiveness of the exchange rate under the framework of ERM II will largely depend on the relationship between movements in the exchange rate and inflation. The exchange rate is more effective in controlling inflation when the relationship between the two is strong and movements in the nominal exchange rate are quickly transmitted to domestic prices. In other words, a high exchange rate pass-through to domestic prices should exist. A high exchange rate pass-through means less concern about the parity rate with which the country enters the ERM II, as in this case deviations of the nominal exchange rate from the theoretical equilibrium level will have a smaller effect on the real exchange rate.

If these countries are characterized by a low exchange rate pass-through, then the exchange rate policy will not be much effective in strengthening nominal convergence, given that movements in the exchange rate will have a low impact on domestic inflation. In this case, changes in the nominal exchange rate will have a strong impact on the real exchange rate and therefore on the real economy. Consequently, the level with which a country enters ERM II becomes an important political variable. This is why, different levels of exchange rate pass-through, under different conditions, would require different treatments by these countries for as long as they are in their way towards ERM II.

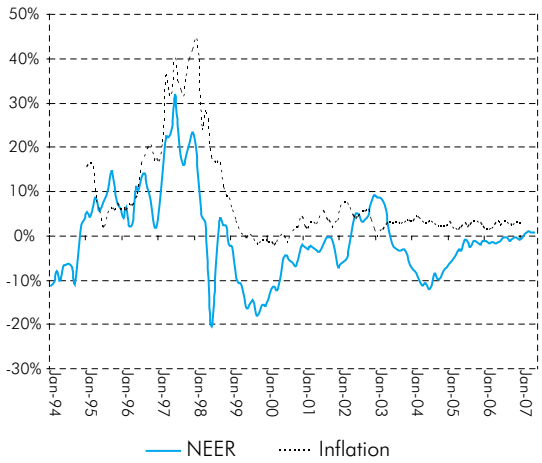
Darvas (2001) studied the role of using the exchange rate in controlling the inflation process in the EU candidate countries. According to Darvas these countries share some common characteristics, which distinguish them from the countries currently inside the EMU. These characteristics are related to the fact that these countries are in the convergence process, which poses important implications regarding the issues of exchange rate pass-through. Domestic prices in these countries might change without any movements in the exchange rate. If substantial movements in the exchange rate happen, then the attribution of price changes as either due to the pass-through effect or the convergence effect should be done carefully.

III. EXCHANGE RATE PASS-THROUGH IN ALBANIA

Starting from 1992, the Bank of Albania has pursued a monetary targeting regime, having price stability as the main objective. Monetary policy is

conducted under a flexible exchange rate regime, a choice dictated mostly by weak developments of financial markets, lack of institutional experience and low level of international reserves (Themeli et al., 2006). Nevertheless, even though a monetary indicator was chosen to anchor low levels of inflation, the exchange rate channel is being considered as the main channel to explain inflationary developments in Albania, (Muça et al., 2004). Such a result is not surprising for a small and open economy like Albania.

Chart 2 Annual changes of NEER and Consumer Price Index in Albania



Source: Bank of Albania

Taking into account the importance of exchange rate in such economies, the Bank of Albania has not ignored the developments in the exchange rate. These developments have been closely monitored, and in some cases the Bank of Albania has intervened in order to smooth large volatilities considered as destabilizing. Furthermore, the exchange rate is one of the main variables included in the process of inflation forecasting, along with other factors.

Muça et al. (2004) concluded that exchange rate stability has played a crucial role in maintaining low levels of inflation during the transition period. According to these authors, the introduction of indirect instruments of monetary policy appears to have contributed to the decline of the importance of the exchange rate channel in the transmission mechanism of monetary policy. The presented empirical results for the period 2000-2003 suggest that the exchange rate has lost its position as the main variable explaining inflation variance compared with other variables. For the 1994-2003 period, exchange rate fluctuations explain about 24 percent of inflation variance while for the period 2000-2003 they explain only 1.7 percent of the variance.

Peeters (2005) extends the doubts whether the exchange rate is (still) the main channel of monetary transmission mechanism. Based on empirical evidences, this author describes the link between inflation and exchange rates as a changeable relationship. Depreciation periods of ALL exchange rate have been associated with increases of inflation while it is not observed a decline of inflation in the presence of ALL appreciation, especially during the last three or four years. The asymmetry in the pass-through of the exchange rate changes to prices has been also mentioned by other authors, as Mançellari et al. (1999), Luçi et al. (2005) etc.

EMPIRICAL MODEL

This section presents the empirical analysis on evaluating the exchange rate pass-through to consumer prices in Albania. First, we give information on the necessary data which are available. Then, we present the methodology and some empirical qualities of the relationships between selected variables. At the end we present the identification scheme of the model.

DATA

The two most important data used in this paper are the nominal effective exchange rate (NEER) and the consumer price index (CPI). In the mean time, part of the model will be as well data on money supply (M3), interest rates, import prices, oil prices etc. The frequency of the data[5] is monthly and in general, the period of observation is 1994:01-2006:12. Apart from the nominal effective exchange rate (NEER) and the interest rate, all other variables are seasonally adjusted with Census X-11. The source of the data are the Bank of Albania and the European Central Bank.

METHODOLOGY

The empirical literature identifies different methodologies to measure the exchange rate pass-through. For example, we mention Campa and Goldberg (2005) who used models with individual equations, evaluated by OLS method. Others as McCarthy (2000), Choudhri (2005) etc., have estimated pass-through by vectors of autoregressions (VAR). We rely on VAR approach as well, because a recursive VAR model allows for simultaneous determinations of the exchange rate and prices, thus eliminating possible problems relating to the endogeneity of the explanatory variables. Furthermore, VAR analyses provide an appropriate way to derive the effects of the exchange rate on prices through impulse response functions. Nevertheless, we should be cautious because for short series of data, the efficiency of VAR is reduced.

In order to apply the recursive VAR and impulse response functions it is important that variables enter the model in a reasonable way. The ordering of the variables usually should be motivated by theoretical and empirical reasons. The usage of identification scheme means that shocks will affect simultaneously their corresponding variables and those variables ranking behind them but it will not affect the variables that rank before. Thus, it is reasonable to order first the most exogenous variables. A number of studies on the exchange rate pass-through rely on the ordering by McCarthy (2000). In general, McCarthy, assumes the ordering of prices based on the distribution chain and then for specific periods allows these prices to be shocked by supply factors, demand factors and exchange rate. In our case, the ordering of variables will be a simplified McCarthy case, due to data limitations.

The two important data used in this material are the nominal effective exchange rate -e and the consumer price index (CPI). Other endogenous variables will be: a monetary aggregate, M3, to represent demand shocks and a short term interest rate (interest rate of 3-month deposits in lek) i, to capture central bank reaction. Differently from McCarthy[6] we consider oil prices and import prices as exogenous variables.

Before proceeding with the estimation of the VAR model, we apply the test of Granger Causality[7] to judge upon the relationship between our variables. We use the result of this test as an empirical support for the ordering of the variables. In general, the results of the test show that the exchange rate leads the money supply variable and interest rate variable, and the latter leads

money supply and consumer prices. In the mean time, some of the variables show feedback relationship. Such relationship is observed mostly between the exchange rate with consumer prices and interest rates and between money supply with consumer prices. The table below presents the results of the test for our endogenous variables.

Table 1 Granger Causality test

Variables	Δe	Δi	Δm	ΔCPI
Δe	∘	→	→	→
Δi	–	∘	→	→
Δm	–	–	∘	→
ΔCPI	→	–	→	∘

—>: variable in row granger causes variable in column.
- : variable in row does not granger cause variable in column.

The results in Table 1 support this ordering of the variables:

$$\Delta e \rightarrow \Delta i \rightarrow \Delta m \rightarrow \Delta CPI \qquad (1)$$

where Δ symbolizes the first difference operator.

Actually, such ordering is supported even theoretically as for small and open economy is suggested that foreign variables (in this case the exchange rate) to rank first. Then, the interest rate being the second means that the central bank decisions are forward looking, therefore it reacts ahead of expected changes in demand and in consumer prices. Based on these considerations, the model is presented as:

$$e_t = E_{t-1}(\Delta e_t) + \varepsilon_t^{\Delta e} \qquad (a)$$

$$i_t = E_{t-1}(\Delta i_t) + \alpha_1 \varepsilon_t^{\Delta e} + \varepsilon_t^{\Delta i} \qquad (b)$$

$$m_t = E_{t-1}(\Delta m_t) + \beta_1 \varepsilon_t^{\Delta e} + \beta_2 \varepsilon_t^{\Delta i} + \varepsilon_t^{\Delta m} \qquad (c)$$

$$\pi_t = E_{t-1}(\Delta \pi_t) + \delta_1 \varepsilon_t^{\Delta e} + \delta_2 \varepsilon_t^{\Delta i} + \delta_3 \varepsilon_t^{\Delta m} + \varepsilon_t^{\Delta \pi} \qquad (d)$$

where e is the first difference of log of NEER, i is the first difference of log of interest rates for 3-month ALL deposits, m is the first difference of log of money supply, M3 and π is the first difference of log of consumer prices. $\varepsilon_t^{\Delta e}$, $\varepsilon_t^{\Delta i}$, $\varepsilon_t^{\Delta m}$, $\varepsilon_t^{\Delta \pi}$ are the shocks of the exchange rate, interest rates, money supply and consumer prices, respectively. $E_{t-1}(\bullet)$ represent expectations for each variable based on all the available information at the end of period t-1. Assuming that the model captures the essential dynamics of consumer prices, shocks are assumed uncorrelated and orthogonal between equations.

This identification scheme and this model represent the baseline specification that we will use in our analysis. Actually, such ordering represents only one of the possible alternatives in terms of identification and variables included in the model. After the empirical analysis of the baseline specification, we will do a sensitive analysis of the results, based on other orderings of the variables and a different specification of the variables included in the model.

RESULTS

VAR is estimated in first differences (dlog)[8] with 7 lags as the optimal lag length according to LR. VAR system is stable as 7*4 calculated roots are located within the unit circle. Normality test calculated by Cholesky (Lutkepohl) shows that residuals of the model are normal, therefore the results of the model are valid.

Table 2 Diagnostic tests of residuals

Components	Skewness (Prob.)	Kurtosis (Prob.)	Jarque-Bera (Prob.)
M3	0.46 (0.037)	2.96 (0.925)	4.34 (0.114)
Int	-0.17 (0.418)	2.69 (0.489)	1.13 (0.568)
Neer	0.12 (0.583)	2.16 (0.058)	3.87 (0.144)
CPI	0.37 (0.096)	2.84 (0.714)	2.91 (0.234)
Joint	(0.089)	(0.380)	12.25 (0.140)

Note: Variables are in first differences. Null hypothesis, H0 implies that residuals are multivariate normal. Skewness and Kurtosis for a normal distribution are 0 and 3, respectively.

Based on the identified VAR model, we derive estimates of pass-through using impulse response functions[9]. Initially the system is shocked by structural innovations of the exchange rate variable. According to the model, this shock affects all the variables ordered following the exchange rate. In this case we are interested only in the impact of this shock on consumer prices, said differently, the pass-through of the exchange rate to consumer prices.

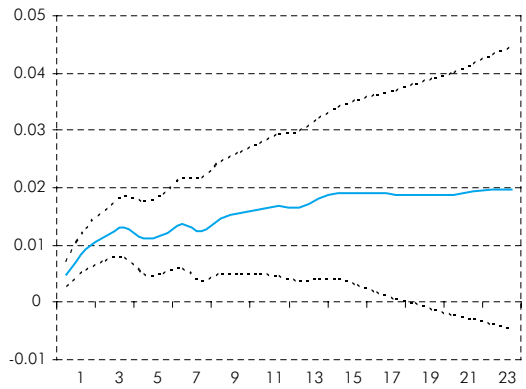
Chart 3 presents the estimated pass-through of exchange rate to consumer prices within 24 months. Shocks of variables in first differences are normalized to one, making possible to interpret the responses as approximate percentage point changes on consumer prices following a one percent shock on nominal effective exchange rates (pass-through elasticity). The dotted lines in Chart 3 represent confidence intervals, which indicate that responses are statistically different from zero until the 17th month. After this month, responses are not statistically different from zero, undermining the validity of the results after this period.

Additionally, we normalize cumulative responses of consumer prices with cumulative responses of exchange rate following Rabanal and Schwartz (2001). The pass-through coefficient is thus defined as:

$$PT_{t,t+j} = P_{t,t+j} / E_{t,t+j}$$

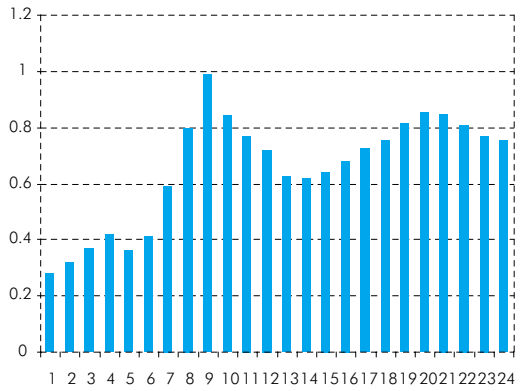
where $P_{t,t+j}$ is the cumulative change in consumer prices and $E_{t,t+j}$ is the cumulative change in the nominal effective exchange rate between months t and t+j.

Chart 3 Cumulative responses of consumer prices following a 1% increase in NEER



Note: Accumulated responses according to Cholesky decomposition (one standard deviation). Dotted lines represent + 2*standard errors.

Chart 4 Accumulated pass through of NEER to consumer prices



The results presented in Chart 4 show that consumer prices react relatively fast following a shock on nominal effective exchange rate. The pass-through of a shock in the exchange rate amounts to 42 percent, in the first four months. Within the year, the exchange rate pass-through reaches the maximum, almost 99 percent. Based on this result we can conclude that the exchange rate pass-through to consumer prices is almost complete within one year.

From the design of the identification scheme, it is understandable that the above response of consumer prices to an exchange rate shock takes into account even the effect of other variables included in the model. In order to see more specifically the effect of an exchange rate shock on consumer prices we analyze the variance decomposition of consumer prices. In this case, variance decomposition informs us on the relative importance of every random shock on the variance of consumer prices. Results indicate that exchange rate shocks are relatively important in explaining the variance of consumer prices compared to other variables. Up to 24.5 percent of the consumer price variance is explained by exchange rate shocks. However, the largest part of consumer price variance is explained by its innovations.

Table 3 Variance decomposition of CPI

Period	M3	INT	NEER	CPI
1	1.804155	0.214940	16.36237	81.61853
2	2.993340	0.997743	24.42406	71.58486
3	5.536933	0.997603	23.95831	69.50715
4	5.326584	1.429128	23.67436	69.56993
5	5.830134	2.084928	24.48628	67.59866
6	9.159610	2.534139	23.39450	64.91175
7	9.439012	2.902078	23.79344	63.86547
8	9.088592	4.030080	23.34188	63.53945
9	10.95884	5.615340	23.34738	60.07844
10	10.65355	5.465520	22.97404	60.90688
11	10.66079	6.232994	22.89152	60.21470
12	11.50374	6.463702	22.67531	59.35725
Cholesky ordering: NEER INT M3 CPI				

SENSITIVITY ANALYSIS

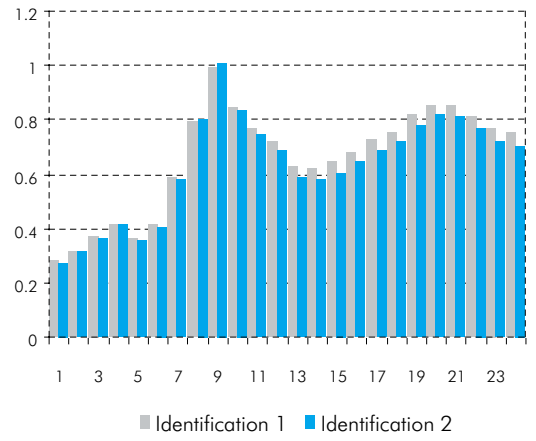
The results of the VAR model using Cholesky decomposition can be very sensitive to model specification. As such, in order to assess the robustness of the exchange rate pass-through coefficients we perform certain modifications on the baseline specification (1) and compare the results, respectively. Firstly, based on Granger Causality test we propose a reordering of the variables presented in the baseline specification (1). In this case, the nominal effective exchange rate will be ordered behind the interest rate, allowing it to react to domestic monetary conditions. The new identification scheme is presented as follows:

$\Delta i \rightarrow \Delta e \rightarrow \Delta m \rightarrow \Delta CPI$ (2)

where Δ, symbolizes the first difference operator.

The results show that changes between coefficients of pass-through, estimated based on two different specifications are almost insignificant. These changes appear mostly in the long-term period but as previously said the pass-through coefficients in the long-term appear to be statistically insignificant. As such, we can say that the ordering of the nominal effective exchange rate variable does not matter for coefficients of the exchange rate pass-through to be stable.

Chart 5 Accumulated pass-through of NEER to consumer prices (specification scheme 1 and 2)



Now we propose another identification scheme, based on the Obstfeld-Rogoff-model. According to this model, nominal import prices are set in the producer currency (producer currency pricing). As a result, import prices react immediately to changes in the nominal exchange rate. This case assumes automatically a complete exchange rate pass-through to import prices, in the short run. Then, assuming that prices are set according to a distribution chain, the reaction of consumer prices to changes in import prices is observed.

According to Obstfeld-Rogoff-model (with sticky prices), short-run exchange rate pass-through on consumer prices equals the share of imported goods in the consumer basket. Applying this model for Albania[10], the short-run pass-through to consumer prices is 36 per cent. However, we should keep in mind that this is an approximate rule, since it does not take into account possible effects of shocks from foreign prices on prices of domestic competitive goods (Stulz, 2006). Domestic firms can be induced to correct their prices as a response to changes on prices for the same imported goods. In this case, it is not surprising for the estimated pass-through to surpass the ratio of imported goods on the total of consumer goods.

Based on the above considerations, in the new specification[11], import prices[12] expressed in All will be part of endogenous variables. In this case, the exchange rate variable will not be included independently in the model. In this case the definition of the pass-through to consumer prices is extended as it comprises pressures coming from foreign import prices as well as pressures coming from the exchange rate. The new identification scheme is presented as follows:

$\Delta impl \rightarrow \Delta i \rightarrow \Delta m \rightarrow \Delta CPI$ (3)

where impl represents import prices variable and Δ symbolizes the first difference operator. Oil prices variable continues to be an exogenous variable.

Chart 6 Accumulated pass-through of import prices to consumer prices

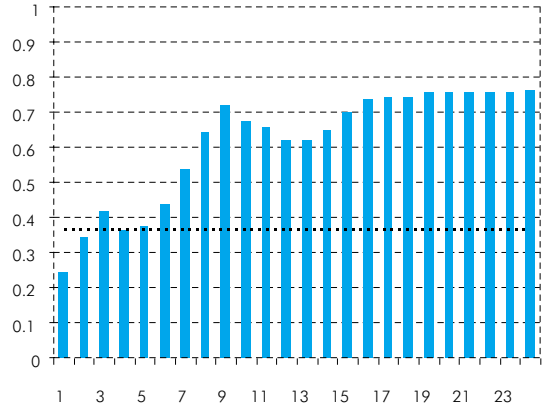


Chart 6 presents the pass-through[13] of an import price shock to consumer prices. Import price pass-through seems to be relatively fast and coefficients of pass-through are statistically different from zero up to the 15th month. Results indicate that up to the third month, about 42 percent of the shock is transmitted to consumer prices. In addition, in this case, the pass-through is completed within the year, reaching its maximum at the 9th month, with a coefficient of pass-through equal to 72 percent. When analyzing this result we should keep in mind the ratio of imports in the consumer goods basket (0.36, horizontal dashed line). If a change in import prices would be completely transmitted to consumer prices the coefficient of pass-through would be 36 percent in the short run (read the above discussion). Until the 5th month, the coefficients of pass-through are approximately similar to this ratio. Again the results after the 15th month are not valid because of the coefficients statistically not different from zero.

Variance decomposition shows that changes in the import price are relatively important in explaining the variance of consumer prices compared with other variables. In addition, it can be noticed that import prices shocks are slightly more important than nominal effective exchange rate shocks in explaining the variance of consumer prices. Again, the largest part of consumer price variance is explained by its innovations.

Table 4 Variance decomposition of CPI

Period	IMPL	M3	INT	CPI
1	17.09072	3.489275	0.742850	78.67716
2	24.95524	3.321994	3.257255	68.46551
3	24.69508	6.066263	3.504580	65.73407
4	23.54748	6.280139	3.332755	66.83962
5	23.26698	6.475605	3.521658	66.73576
6	22.99106	10.19354	3.394064	63.42134
7	22.23523	10.55584	3.714680	63.49425
8	21.60903	10.35581	4.698408	63.33675
9	22.61008	13.02161	5.126944	59.24137
10	22.43206	12.90044	5.015025	59.65247
11	22.40501	12.85972	5.110228	59.62503
12	22.06778	13.98333	5.216354	58.73254
Cholesky ordering: IMPL INT M3 CPI				

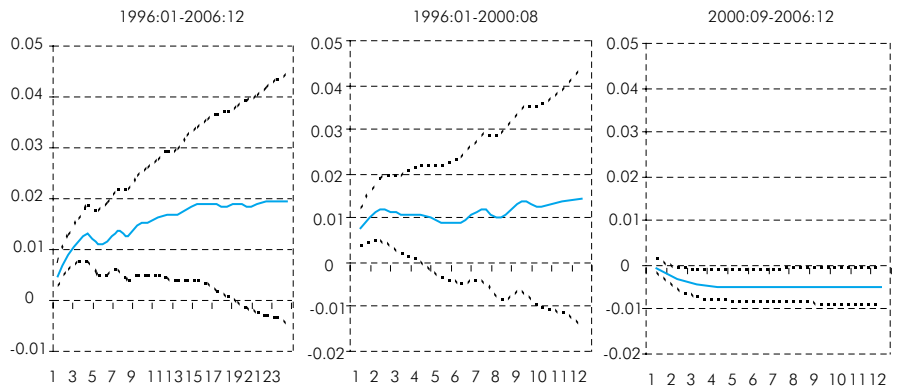
CHANGES IN THE DEGREE OF PASS-THROUGH

A well-known and discussed fact in the literature on pass-through is that the exchange rate pass-through has been declining in developed and developing countries. Low inflation environment and increased credibility in the monetary authority are mentioned as some of the main factors contributing to such development. In a low inflation environment, firms are less willing to reflect shocks in their costs (exchange rate shocks or import prices shocks for example) to consumers, as they expect that the central bank will take the necessary

measures to offset the effect of the shocks. This session presents the discussion of this issue for the case of Albania. The exchange rate pass-through is analyzed in two different sub periods, 1996:01-2000:08 and 2000:09-2006:12. This break[14] is based on the fact that September 2000 corresponds with the month the Bank of Albania switched from direct instruments to indirect instruments for conducting its monetary policy.

Chart 7 compares cumulative responses of consumer prices to a 1 percent increase in NEER in the total period and two sub sample periods (VAR[15] model based on the baseline specification 1). We notice that the reaction of prices is as expected for the first sub-period while for the second sub-period, the reaction is almost insignificant and negative.

Chart 7 Accumulated pass-through of NEER to consumer prices

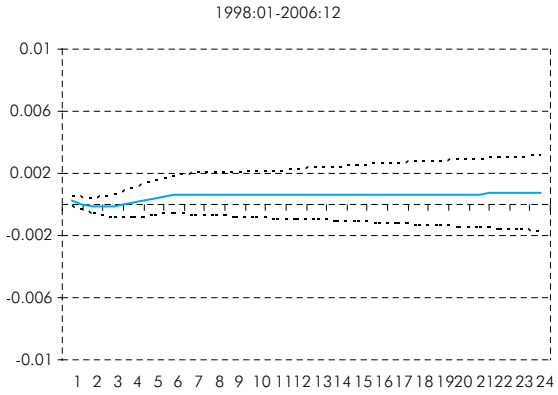


The result for the second sub-period is surprising. In order to shed more light on the relationship between pass-through and consumer prices for the second sub-period we keep analyzing some alternative specifications. From these alternatives, we mention:

i) Δe → gap→Δi →Δm →ΔCPI, where gap represents the output gap;
ii) Δimp →gap →Δi →Δm →ΔCPI_imp, imp, where cpi_imp represents consumer prices of imported goods;
iii) Δimp →gap →Δi →Δm →Δcore, where core represents core inflation and,
iiii) Δimp →gap →Δi →Δm →Δtrade, where trade represents inflation of tradable sector.

The outcomes of the VAR models for all above specifications show almost the same results. Responses of different representatives of consumer prices (CPI, trade, core) towards foreign shocks (import prices, nominal effective exchange rate, nominal exchange rate, All/euro) continue to be mostly

Chart 8 Accumulated pass-through of import prices to core inflation



insignificant and negative. For example, we show the results for the specification iii, where the VAR model in statistical terms presents the best qualities. In this case, the observed period starts in 1998, in order to extend the number of observations. As it is shown in Chart 8, pass-through elasticities are almost zero, while pass-through coefficients do not go beyond 5 percent.

The variance decomposition shows that import prices keep on being the main factor explaining the variance of core inflation when compared with other factors. However, there is a decline compared with the explanation for the entire period. Again, the major part of core inflation variance is explained by its own innovations.

Table 5 Variance decomposition of core inflation

Period	S.E.	DIMPL	GAP	DINT	DM3	DCORE
1	0.001539	2.215126	0.828436	5.220947	0.179239	91.55625
2	0.001637	6.756949	0.879301	5.297578	0.926829	86.13934
3	0.001662	6.565890	1.718146	5.636945	1.495336	84.58368
4	0.001691	8.440145	1.795637	5.897588	1.446207	82.42042
5	0.001718	10.34945	2.010309	5.723915	1.980539	79.93579
6	0.001735	11.64222	2.022650	5.787371	2.157411	78.39034
7	0.001748	11.55436	2.062893	5.821326	3.085596	77.47583
8	0.001749	11.53630	2.105603	5.822906	3.151515	77.38367
9	0.001751	11.52644	2.199362	5.812754	3.225639	77.23580
10	0.001752	11.51847	2.252032	5.824012	3.223327	77.18216
Cholesky ordering: IMPL GAP INT M3 CORE						

Actually, the above results are in line with the conclusions drawn from Muça et al. (2004) relating to the weakness of the effect of the exchange rate on prices in Albania after the 90s. Empirical studies in other countries have also encountered such "indifference" of prices to exchange rate shocks. For example we mention the case of some East Asian countries (Thailand, Malaysia and Singapore), the case of Switzerland etc., where responses of consumer prices to exchange rate shocks have resulted very small and even negative. Tanzania represents another interesting case with no significant pass-through even though the country has experienced large depreciations of the domestic currency. The decline of the exchange rate pass-through is evidenced even in East and Central European countries for the period 1998-2003, compared with 1993-1997 (Bitans, 2004). The results for these countries show a decline by 50 percent in the degree of pass-through. Nevertheless, the exchange rate pass-through in these countries remains relatively high compared with the results for our country and developed countries.

Now we discuss the reasons lying behind the result for a decline in the exchange rate pass-through to consumer prices for the 1999-2006 period.

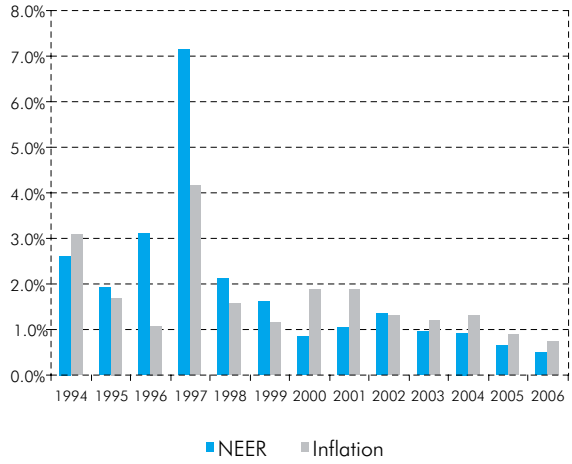
First, the reasons may be related with the chosen empirical methodology. According to Mihailov (2005) the extent of exchange rate pass-through varies to (i) data frequencies, (ii) number of observations (time periods), (iii) econometric methods, (iv) chosen variables, (v) stages along the pricing chains (import prices, export and consumer prices), and (vi) time horizons (a month, a quarter, a year). Consequently, every generalization should be done carefully, taking into account special qualities of each case. However, even though different econometrical methods or proxy variables do matter for the exact extent and time patterns of pass-through, still they agree on general tendencies. In our case, the division of the whole period in sub-periods yields short periods of observations, being one of the factors which might have affected our results.

Second, there are a number of possible micro and macroeconomic reasons to explain the decline of exchange rate pass-through after the 90s. Albania is a small and open economy, and as such it is expected that import prices be determined in the producer currency. As such, the effects of the exchange rate are reflected in a high degree in import prices. However, taking into account additional costs (tax, transport, marketing, etc.,) it is expected that the pass-through weakens through distribution chain up to consumer prices. Even though there is no empirical study, in the Bank of Albania periodicals it is often mentioned the increase of competition in our economy, a factor that helps in weakening the exchange rate pass-through.

Price stickiness could be another reason to explain the weak reaction of prices to changes in the exchange rate. However, consumer prices in Albania for the period 2002-2005 have presented a relatively low stickiness. According to Dushku et al. (2006), about 28 percent of the consumer prices in Albania are sticky, while in Euro zone price stickiness is at 85 percent of the consumer prices.

Low inflation environment and credibility in the Bank of Albania after the 90s seem as good "justifiers" for the decline of exchange rate pass-through to consumer prices. The period 1993-1999 is characterized by high levels of inflation and high inflation volatility compared with the 2000-2006 period. The average annual inflation rate for the first sub-period is 15 percent while it is 2.6 percent for the second sub-period. Thus, a lower degree of the exchange rate pass-through in this period is in line with the overall admitted fact that, the role of the exchange rate in the process of expectations and price decisions of economic agents seem to decline in a low inflation environment.

Chart 9 Volatility[16] of NEER and annual inflation



Furthermore, the NEER itself has been relatively stable during 2000-2006, showing a decreasing volatility year after year (Chart 9). In this period,

Chart 10 The extent and the duration of NEER changes (monthly rates)

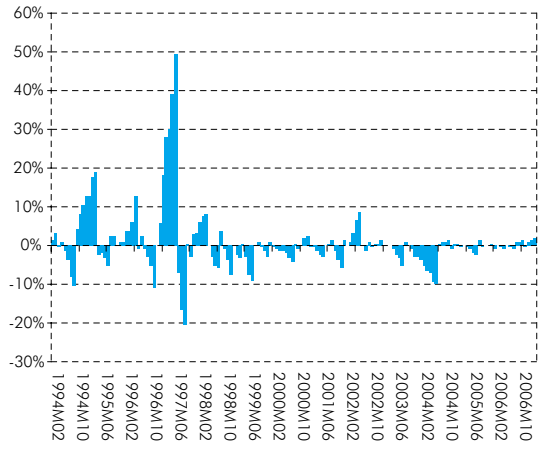
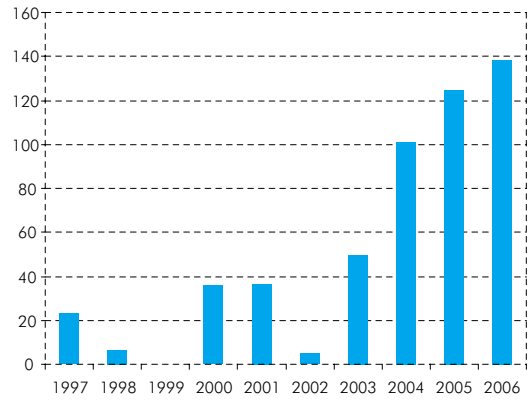


Chart 11 Bank of Albania's foreign interventions (buying) (million US dollar)



there have not been large depreciations of the ALL. On the contrary, this period has been characterized mostly by the appreciation of the ALL against both the USD and the Euro. Chart 10 shows the accumulated depreciation (appreciation) for consecutive periods accompanied by the depreciation (appreciation) of the NEER. This Chart enables the observation of the extent of the depreciation (appreciation) and its duration.

It is noticed that for the 1994-1998 period, there have been large depreciations extended in time. For example, the deprecation started in January 1997 lasted for 6 months, reaching up to 50 percent. Then, after this period depreciations have been in a lower degree and shorter in time. Mostly, this period has been characterized by extended appreciations, for example, the appreciation started in November 2003 lasted about 8 months. So, in times when ALL depreciations are considered low and not permanent, economic agents might have not reacted to temporary increases of their costs.

Furthermore, the Bank of Albania interventions may have indirectly affected the weakening of the relationship between inflation and changes in the exchange rates. During the period 1997-2006, the Bank of Albania has been positioned as a buyer of foreign currency in the FX market, in a certain extent to smooth high volatility in the exchange rate and to increase the level of Net International Reserves of the Bank of Albania, in order to fulfill the quantitative objective for these reserves. The Bank of Albania's presence in the FX market has helped in preserving stability of ALL to foreign currencies.

IV. CONCLUSIONS

Despite being in a flexible exchange rate regime, the Bank of Albania has not ignored exchange rate movements in the ALL, taking into account the importance of exchange rate movements in a small and open economy. The literature on monetary policy in Albania has often considered the exchange rate channel as the most important channel to explain inflationary developments in Albania. Again, this literature has observed the change in the relationship between the exchange rate and inflation after the 90s.

In this paper, we use VAR models and impulse response functions in order to shed light on the transmission of exchange rate movements to consumer

prices. Being in line with the results found in other countries, the exchange rate pass-through in Albania appears almost complete but in decline. The results show that consumer prices react quickly to a shock in nominal effective exchange rate. The pass-through of an exchange rate shock amounts to 42 percent within the first four months. Within the year, the pass-through reaches its maximum in the 9th month, about 99 percent. Furthermore, the exchange rate shocks appear to be relatively important in explaining consumer price variance compared with other variables. Up to 25 per cent of consumer price variance is explained by shocks on the nominal effective exchange rate, while the major part of this variance is explained by its innovations. These results are robust to alternative specifications schemes.

The decline of the pass-through becomes evident when we divide the whole observation sample in two sub-periods. Even in this case, the results are in line with previous conclusions on the weakened effect of exchange rate developments in prices after the 90s. The result is in line even with the empirical results found for developed and emerging countries. Low inflation environment, ALL stability and credibility in the Bank of Albania monetary policy rank as good justifiers for a decrease in the exchange rate pass-through.

Nevertheless, this does not mean that developments in the exchange rate no longer account for consumer price formation in Albania. The performance of the results supports the idea for an asymmetry in the exchange rate pass-through: the pass-through is higher in case of an ALL depreciation and it is lower in case of an appreciation. As such, the monetary authority should be cautious to decide on the appropriate reaction to changes in the ALL exchange rate.

This analysis shows that the exchange rate effect is no more easily captured by direct analyses of data on consumer prices and the exchange rate. During the last five years, the exchange rate volatility has been very low, making it hard to identify significant statistical relationships with other economic variables. If the volatility of ALL exchange rate will increase in the future, we do not have any guarantees that the reaction of the economy will remain the same.

The Bank of Albania has publicly announced its intentions to review its monetary policy framework in the future, mostly toward an inflation-targeting regime. However, if the transition to this new regime will not be clearly understood by the public, it will have an effect on the exchange rate volatility, which in turn might affect expectations. The literature shows that the implementation of inflation targeting can further reduce the exchange rate pass-through to prices. Nevertheless, inflation targeting advocates stress that the role of the exchange rate in price formation should not be ignored, especially in the case of a small and open economy, with dependence on imports of intermediary and final goods.

ANNEX 1 DATA DESCRIPTIONS

Nominal effective exchange rate (NEER) - nominal effective exchange rate calculated toward two currencies, Euro and US dollar, taking into account the share that they represent in trade balance, Euro (0.82 %) and USD (0.18 %). Base year = 2001. In our model, an increase of NEER means the depreciation of ALL. Period of observation: 1994:01 – 2006:12. Source: Bank of Albania.

Nominal exhange rate (Euro) - the nominal exchange rate of ALL to euro. Period of observation: 1994:01 – 2006:12. Source: Bank of Albania.

Consumer Price Index (CPI) - Consumer Price Index with base year December 2001. Seasonally adjusted using the Census X-11 method. Period of observation: 1994:01 – 2006:12. Source: INSTAT.

Broad money (M3) - Money supply in billion of ALL. Seasonally adjusted using the Census X-11 method. Period of observation: 1994:01 – 2006:12. Source: Bank of Albania.

Interest rate (Int) - 3-month deposit interest rate in ALL. Period of observation: 1996:01 – 2006:09. Source: Bank of Albania.

Import price (IMP) - import price (denominated in euro) is calculated based on price index/unit values of export of main partners from which Albania imports. Period of observation: 1994:01 – 2006:12. Source: Bank of Albania.

Core inflation (core) - Core inflation is calculated based on CPI basket, excluding the goods and services that cause temporary fluctuations of prices such as: goods and services with significant seasonal patterns, goods with administrative prices, prices of goods which are generally subject to fiscal policy; goods with prices strongly related to foreign conjunctures. The indicator is calculated using the permanent exclusion method. Period of observation: 1994:01 – 2006:12. Source: Bank of Albania.

Oil price (Oil) - oil price expressed in euro, as it is published in the international stock exchange market. Period of observation: 1994:01 – 2006:12. Source: ECB.

Output gap (Gap) - Output gap is calculated as the difference of real GDP with the trend according to Hodric-Prescott filter. The real GDP is calculated as nominal GDP divided by GDP deflator. The annual nominal GDP (Source: INSTAT) is transformed into monthly GDP by using the Lismans method. Source: Calculation of Research Department at the Bank of Albania.

ANNEX 2 DATA AND VAR MODELS QUALITIES

Table 1 Granger Causality test results

	Lag length in month						
	1	2	3	4	5	6	7
M3							
Interest Rate	0.513	0.13	0.36	0.28	3.14**	2.22**	4.99**
NEER	0.05	0.03	0.43	0.72	0.94	2.02*	2.95***
CPI	4.70**	2.50*	1.41	1.58	2.54**	2.84**	1.73
Core Inflation	0.35	3.248**	0.78	0.49	0.38	0.58	
Int							
M3	6.67**	2.16	1.64	2.87**	2.61**	1.39	13.05***
NEER	3.20***	3.14***	3.78***	2.45**	3.20***	3.14***	3.78***
CPI	13.1***	17.4***	5.9***	5.48***	3.19**	3.72**	
Core Inflation	0.01	0.36	0.15	0.30	1.07	1.32	0.99
NEER							
M3	0.01	1.22	2.66*	3.45**	3.38***	3.17***	3.47**
Interest Rate	2.98***	3.92***	3.92***	6.47**	2.98**	3.92***	3.47***
CPI	13.05***	7.07***	5.22***	4.06***	2.62**	4.02***	4.11***
Core Inflation							
CPI							
M3	0.01	3.12**	2.36**	3.88***	3.58***	3.67***	4.88***
Interest Rate	13.1***	3.39**	0.17	2.4**	2.17*	2.19**	
NEER	4.99**	1.81	3.13**	3.45**	4.00***	4.18***	4.01***

Note: Numbers represent H0 of F-statistics, which means, "First variable no-granger causes second variable". 1, 2 and 3 stars indicate the rejection of null hypotheses with importance level, respectively 10, 5 and 1 per cent. Variables are in first differences. The number of observations for every result depends on data availability.

Table 2 Results of unit root test according to ADF method

Sample	Level	First difference	Level critical value	Differences critical value
	ADF	ADF	ADF	ADF
HCPI	-1.81	-3.30*		1%:-4.03, 5%:-3.45, 10%:-3.15
M3	-2.64	-1.47	1%:-4.02, 5%: -3.44, 10%:-3.14	1%:-3.48, 5%: -2.88, 10%:-2.58
NEER	-2.53	-7.90***	1%:-4.02, 5%: -3.44, 10%:-3.15	1%:-3.47, 5%: -2.88, 10%:-2.58
EURO	-2.36	-8.85***	1%:-4.02, 5%: -3.44, 10%:-3.14	1%:-3.47, 5%: -2.88, 10%:-2.58
Interest Rate	-3.19	-5.91***	1%:-4.03, 5%: -3.44, 10%:-3.15	1%:-3.48, 5%:-2.88, 10%:-2.58
IMP	-2.20	-8.31***	1%:-4.02, 5%:-3.44, 10%-3.14	1%:-3.47, 5%:-2.88, 10%:-2.58
CPI	-1.02	-5.71***	1%:-4.02, 5%:-3.44, 10%-3.14	1%:-3.47, 5%:-2.88, 10%-2.57
oil	-2.21	-10.86***	1%:-4.02, 5%:-3.44, 10%-3.14	1%-3.47:, 5%:-2.88, 10%-2.58

Specification 2: $\Delta i \rightarrow \Delta e \rightarrow \Delta m \rightarrow \Delta CPI$
Specification 3: $\Delta impl \rightarrow \Delta i \rightarrow \Delta m \rightarrow \Delta CPI$
Specification iii: $\Delta imp \rightarrow gap \rightarrow \Delta i \rightarrow \Delta m \rightarrow \Delta core$,

Table 3 Lag length selection criteria of VAR for specification 2

Endogenous Variables: DM3 DINT DNER DICK						
Exogenous Variables: C DOIL DIMPE						
Sample: 1994M01 2006M12						
Included observations: 120						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	1195.989	NA	3.16e-14	-19.73315	-19.45440	-19.61995
1	1250.964	103.5355	1.65e-14	-20.38273	-19.73231*	-20.11859*
2	1271.380	37.09040	1.54e-14	-20.45634	-19.43426	-20.04127

3	1292.875	37.61610	1.41e-14	-20.54792	-19.15418	-19.98192
4	1311.737	31.74989	1.35e-14	-20.59561	-18.83020	-19.87867
5	1345.404	54.42934	1.01e-14	-20.89007	-18.75299	-20.02219
6	1367.684	34.53377	9.24e-15	-20.99474	-18.48599	-19.97592
7	1385.443	26.34197*	9.13e-15	-21.02405	-18.14364	-19.85430
8	1403.974	26.25314	8.94e-15*	-21.06624*	-17.81417	-19.74556
* Lag selection according to criterion.						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						

Table 4 Lag length selection criteria of VAR for specification 3

Endogenous Variables: DIMPl DINT DM3 DICK						
Exogenous Variables: C DOIL						
Sample: 1994M01 2006M12						
Included observations: 120						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	1197.961	NA	2.86e-14	-19.83268	-19.64684	-19.75721
1	1240.654	81.11723	1.84e-14	-20.27756	-19.72006*	-20.05116*
2	1252.142	21.06190	1.98e-14	-20.20237	-19.27320	-19.82503
3	1273.538	37.79999	1.82e-14	-20.29231	-18.99148	-19.76403
4	1290.257	28.42158	1.80e-14	-20.30428	-18.63179	-19.62507
5	1317.895	45.14242	1.50e-14	-20.49825	-18.45409	-19.66811
6	1336.791	29.60432	1.44e-14	-20.54652	-18.13070	-19.56545
7	1351.431	21.95933	1.50e-14	-20.52385	-17.73636	-19.39184
8	1372.805	30.63651*	1.40e-14*	-20.61342*	-17.45427	-19.33047
* Lag selection according to criterion.						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						

Table 5 Lag length selection criteria for specification iii

Endogenous Variables: DIMPL GAP DINT DM3 DCORE						
Exogenous Variables: C DOIL						
Sample: 1998M01 2006M12						
Included observations: 96						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	1127.916	NA	5.28e-17	-23.28992	-23.02280	-23.18195
1	1303.420	325.4127	2.30e-18	-26.42541	-25.49049	-26.04750
2	1514.965	370.2044	4.75e-20	-30.31177	-28.70905	-29.66393
3	1573.479	96.30347	2.39e-20	-31.00997	-28.73945*	-30.09219*
4	1604.087	47.18880*	2.17e-20*	-31.12682*	-28.18851	-29.93911
5	1624.730	29.67407	2.47e-20	-31.03605	-27.42993	-29.57840
6	1652.783	37.40376	2.45e-20	-31.09965	-26.82574	-29.37206
7	1676.243	28.83610	2.73e-20	-31.06756	-26.12585	-29.07004
8	1703.812	31.01528	2.88e-20	-31.12109	-25.51158	-28.85363
* Lag selection according to criterion.						
LR: sequential modified LR test statistic (each test at 5% level)						

FPE: Final prediction error				
AIC: Akaike information criterion				
SC: Schwarz information criterion				
HQ: Hannan-Quinn information criterion				

Table 6 LM test for serial correlation of VAR errors, specification 2

H0: no serial correlation until lag h		
Sample: 1994M01 2006M12		
Included observations: 120		
Lag	LM-Stat	Prob
1	29.28016	0.0221
2	13.74905	0.6174
3	21.25715	0.1688
4	16.35370	0.4286
5	21.41205	0.1632
6	20.98297	0.1792
7	8.727606	0.9242
8	16.50558	0.4183
Probabilities for H2 with 16 freedom degrees.		

Table 7 LM test for serial correlation of VAR errors, specification 3

H0: no serial correlation until lag h		
Sample: 1994M01 2006M12		
Included observations: 120		
Lag	LM-Stat	Prob
1	29.28016	0.0221
2	13.74905	0.6174
3	21.25715	0.1688
4	16.35370	0.4286
5	21.41205	0.1632
6	20.98297	0.1792
7	8.727606	0.9242
8	16.50558	0.4183
9	10.74063	0.8252
Probabilities for H2 with 16 freedom degrees.		

Table 8 LM test for serial correlation of VAR errors, specification iii

H0: no serial correlation until lag h		
Sample: 1998M01 2006M12		
Included observations: 100		
Lag	LM-Stat	Prob
1	24.52600	0.4892
2	24.51227	0.4900
3	34.32383	0.1012
4	24.73718	0.4772
5	28.52036	0.2845
6	26.25691	0.3940
7	24.42930	0.4947
Probabilities for H2 with 25 freedom degrees.		

LITERATURE

1. Agenor, Pierre-Richard (2002). "Monetary policy under flexible exchange rates: An introduction to Inflation Targeting". In: Loayza and Soto, eds. Inflation Targeting: design, performance, challenges. Central Bank of Chile
2. Ariel T. Burstein, Joao C. Neves and Sergio Rebelo, May 2000. "Distribution Costs and Real Exchange Rate Dynamics During Exchange-Rate-Based-Stabilizations", Working Paper No. 473
3. Bacchetta, Philippe & Eric van Wincoop, 2001. "A Theory of the Currency Denomination of International Trade"
4. Ball, Christopher and Reyes, Javier (2004a). "Inflation Targeting or Fear of Floating in disguise: The case of Mexico". International Journal of Finance and Economics
5. Barry Eichengreen, 2002. "Can Emerging Markets Float? Should They Inflation Target?," Working Papers Series 36, Central Bank of Brazil, Research Department
6. Berg, A., et al. (2002). "An evaluation of monetary regime options for Latin America". The North American Journal of Economics and Finance
7. Betts, C.M. and T.J. Kehoe. 2001. "Real Exchange Rate Movements and the Relative Price of Nontraded Goods"
8. Burstein, A., M. Eichenbaum, and S. Rebelo. 2002. "Why Are Rates of Inflation So Low after Large Devaluations?" NBER Working Paper No. 8748
9. Bitans, M, 2005. "Pass-through of Exchange Rates to Domestic Prices in East European Countries and the Role of Economic Environment", Working Paper 4/2004
10. Campa, José Manuel & Goldberg, Linda S, 2002. "Exchange Rate Pass-Through into Import Prices," CEPR Discussion Papers 4391
11. Campa, José Manuel and Linda S. Goldberg (2004), "Exchange Rate Pass-Through into Import Prices: A Macro or Micro Phenomenon?", Federal Reserve Bank of New York
12. Campa, José Manuel & Linda S. Goldberg, 2005. "Exchange Rate Pass-Through into Import Prices," The Review of Economics and Statistics, MIT Press, vol. 87(4), pages 679-690, December
13. Calvo, Guillermo (2001). "Capital markets and exchange rate, with special reference to the dollarization debate in South-America". Journal of Money, Credit and Banking
14. Choudhri, E.U., Faruqee, H. and Hakura, D.S., 2005 "Explaining the Exchange Rate Pass-through in Different Prices," Journal of International Economics
15. Corsetti, G. and L. Dedola. 2002. "Macroeconomics of International Price Discrimination"
16. Darvas, Zsolt, 2001. "Exchange rate pass-through and real exchange rate in EU candidate countries," Discussion Paper Series 1: Economic Studies 2001,10, Deutsche Bundesbank
17. Devereux, Michael B., and Charles Engel (2001), "Exchange Rate Pass-

Through, Exchange Rate Volatility, and Exchange-Rate Disconnect," Working Paper
18. Dornbusch, R., 1987, "Exchange Rate and Prices," American Economic Review 77
19. Dushku, Elona, Gent Hashorva and Marga Peeters "Some Stylized Facts of Goods and Services in the CPI-basket in Albania Are Prices Sticky or Flexible?" Hand-out for the Inflation Targeting Taskforce, January 2006
20. Edwards, Sebastian, 2006. "The Relationship Between Exchange Rates and Inflation Targeting Revisited," NBER Working Papers 12163, National Bureau of Economic Research, Inc.
21. Fraga, Arminio et al. (2003). "Inflation targeting in emerging market economies". In: Gertler, Mark, and Kenneth Rogoff, orgs. NBER Macroeconomics Annual
22. Froot, Kenneth A. & Paul Klemperer, 1989. "Exchange Rate Pass-Through When Market Share Matters," NBER Working Papers 2542, National Bureau of Economic Research
23. Gali, Jordi and Tommaso Monacelli, 2002. "Monetary Policy and Exchange Rate Volatility in Small Open Economy"
24. Hakan Kara, et al. 2005. "Exchange Rate Pass-Through in Turkey: Has it Changed and what Extent?" . Central Bank of the Republic of Turkey, Working paper No 05/04
25. Hausmann, Ricardo, et al. (2001). "Why do countries float the way they float?" Journal of Development Economics"
26. Hooper, Peter, and Catherine L. Mann, 1989. "Exchange Rate Pass Through in the 1980s: The Case of U.S. Imports of Manufacturers"
27. Jane E. Ihrig, Mario Marazzi, and Alexander D. Rothenberg , 2006. "Exchange-Rate Pass-Through in the G-7 countries". Board of Governors of the Federal Reserve System International Finance Discussion Papers Number 851
28. Kasa, K. (1992) Adjustment Costs and Pricing-to-Market: Theory and Evidence, Journal of International Economics
29. Krugman P., 1987, "Pricing to Market When the Exchange Rate Changes," in Real-financial linkages among open economies, Eds. S.W. Arndt and J. David Richardson. Cambridge, MA: MIT Press
30. Kumhof, Michael (2001). "A critical view of Inflation Targeting: crises, limited sustainability and aggregate shocks". Central Bank of Chile. Working Paper no 127
31. Luci, E., Ibrahimi F., 2005, "A review of Albanian monetary targeting regime with insights into the future", Fifth Annual Conference of Bank of Albania
32. Mançellari, Ahmet, Hasan Mytkolli, Tonin Kola "Kurset e këmbimit dhe tranzicioni ekonomik" Tiranë, 1999
33. Marston, Richard C., 1991. "Pricing to Market in Japanese Manufacturing," NBER Working Papers 2905, National Bureau of Economic Research, Inc.
34. McCarthy, Jonathan, 2000. "Pass-through of exchange rates and import prices to domestic inflation in some industrialized economies," Staff Reports 111, Federal Reserve Bank of New York

35. Mihailov, Alexander (2005), "Exchange Rate Pass-Through on Prices in US, German and Japanese Macrodata", University of Essex
36. Minella, Andre et al. (2003). "Inflation targeting in Brazil: constructing credibility under exchange rate volatility". Journal of International Money and Finance
37. Mishkin, Frederic (2004b). "Inflation Targeting or Fear of Floating in disguise: a broader perspective". University of Arkansas Working Paper
38. Mishkin, Frederic S. (2004). "Can Inflation Targeting work in emerging market countries?" In: Festschrift in Honour of Guillermo Calvo, International Monetary Fund
39. Mishkin, Frederic S and Savastano, Miguel (2001). "Monetary policy strategies for Latin America". Journal of Development Economics
40. Muco, M; Sanfey P, and Anita Taci "Inflacioni, kursi i këmbimit dhe roli i politikës monetare në Shqipëri, Working paper No. 88, EBRD
41. Parrado, Eric, and Andrés Velasco, 2001, "Alternative Monetary Rules in the Open Economy: A Welfare-Based Approach," in Inflation Targeting: Design, Performance, Challenges, ed. by Norman Loayza and Raimundo Soto (Santiago:Central Bank of Chile)
42. Peteers, M (2005) "What about Monetary Transmission mechanism in Albania? Is the exchange rate pass-through (still) the main channel? Fifth Annual Conference of Bank of Albania
43. Obstfeld, M. and K. Rogoff. 1995. Exchange rate dynamics redux. The Journal of Political Economy 103(3): 624-660
44. Rabanal, P. and G. Schwartz (2001). "Exchange Rate Changes and Consumer Price Inflation: 20 Months After the Floating of the Real". IMF Country Report: Selected Issues and Statistical Appendix (Section V)
45. Reyes, Javier (2003). "Exchange rate pass-through effect and Inflation Targeting in emerging economies: What is the relationship?" Working Paper, University of Arkansas
46. Schmidt-Hebbel, Klaus and Werner, Alejandro (2002). "Inflation Targeting in Brazil, Chile and Mexico: performance, credibility and the exchange rate". Central Bank of Chile. Working Paper no 171
47. Stulz, Jonas "Exchange Rate Pass-Through in Switzerland: Evidence from Vector Autoregressions", February 2006
48. Stulz, Rene M., 2006. "Financial Globalization, Corporate Governance, and Eastern Europe," NBER Working Papers 11912, National Bureau of Economic Research, Inc.
49. Szapáry, György. (2001) "Maastricht & the Choice of Exchange Rate Regime in Transition Countries during the Run-Up to EMU" ENEPRI Working Paper No. 6, May 2001
50. Taylor, J. (2000), "Low Inflation, Pass-Through and the Pricing Power of Firms"
51. Themeli, E.; Kolasi, G., 2006 "The IT case in Albania, A tentative road-map for implementing IT in Albania".

NOTES

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[1] Albanian Lek.

[2] New member countries that have not adopted the Euro: Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia.

[3] Countries like: Albania, Macedonia, Croatia, Turkey, Bosnia-Herzegovina, Montenegro.

[4] The second phase of monetary integration for the new member countries is participation in ERM II. The participation is voluntary and as such it does not require immediate entrance after EU membership. However, new member countries are expected to join this regime. Participation in ERM II is a necessary but not a sufficient condition for fulfilling the exchange rate convergence criterion.

[5] A detailed description of the data is found in Annex 1.

[6] McCarthy (2000) investigates the exchange rate pass-through and import prices pass-through to inflation for some industrialized countries following a VAR model with this ordering of the variables: oil prices (denominated in domestic currency), output gap, nominal exchange rate, import price inflation, producer price inflation, consumer price inflation, interest rates and a money supply indicator.

[7] Granger Causality test measures if something happens before something else and helps to predict it. A variable X is said to granger cause y, if values of x provide statistically significant information on future variables of y. This test does not provide information on simultaneous relationships between the variables but only on the effect of past observations.

[8] Stationarity of the variables is measured using unit root test according to Augmented Dickey Fuller (ADF). This test suggests that all variables are nonstationary and become stationary after first differencing (dlog). These results are presented in Table 2, Annex 2.

[9] Impulse responses trace out the response of current and future values of each of the variables to a one unit increase in the current value of one of the VAR errors, assuming that this error returns to zero in subsequent periods and that all other errors are equal to zero.

[10] According to INSTAT estimations, the ratio of imported goods in the basket of consumer goods is 36 percent.

[11] The VAR model is subject to all necessary diagnostic tests. These tests are shown in Annex 2.

[12] Official statistics in Albania do not provide data on import prices in Albania. In this paper, we use proxy data on import prices (denominated in euro). For more details, see Annex 1 and Shllaku, R "Index of foreign unit values/prices of Albanian imports" Discussion Paper, 2007

[13] Pass-through coefficient is defined as: $PTt,t+j = Pt,t+j / IMPt,t+j$, where $Pt,t+j$ is the cumulative change in the consumer prices and $IMPt,t+j$ is the cumulative change in import prices between months t and t+j.

[14] The break point is in line with the break point in Muça et al. (2004).

[15] Statistical properties of VAR models in sub-periods do fulfill stability conditions but some of them do not fully fulfill the normality criteria for residuals. As such the results of these models should be interpreted with reserves.

[16] Volatility measured as standard deviation.

NEW CORE INFLATION MEASURES: THEIR USAGE IN FORECASTS AND ANALYSIS

Kew words: core inflation; measure methods; forecasting

ABSTRACT

The practice of core inflation measures provides various approaches. Is there any perfect and universal method to measure it? Until now, no such thing has been concluded. Selecting a method on whose basis a proper core inflation series is constructed is a debatable issue in academic circles and in those of central bankers. Central banks employ different core inflation measures based on the fact: (1) whether their ultimate target is the core or the headline inflation; (ii) whether they use it or not to forecast the headline inflation. In all cases, it is aimed at selecting those methods that inform more clearly the decision-makers, economic agents and the broad public on the long-term inflation trends. This research brings about arguments related to on-going discussions at the Bank of Albania on forecasting inflation in general and core inflation in particular. This paper examines several measures of core inflation. A summary of methods, of corresponding priorities and problems is made with regard to each measure. Then, based on the outcome of some statistical criteria, on tests about the degree of basic component persistency, on the predictive abilities of core inflation measures for the headline inflation, efforts are made to evidence the optimal measure to be used under Albania's case. Based on a complete estimation process, this paper presents forecasting models of various core inflation measures, exploring the possibility to obtain through them the most accurate headline inflation forecast. Making a balance between priorities and problems of the alternatives of various core inflation measures, it is drawn the conclusion that the most appropriate measure – which simultaneously meets the statistical criteria and enables the headline inflation forecasting – is the one that permanently excludes some items from the basket. This model is preferred to be applied largely by different central banks, because of the high degree of transparency and better understanding by the public. The research concludes by providing concrete proposals for encompassing information on core inflation measures to Bank of Albania's periodical analyses on the developments of the economy in general and of prices in particular.

1. MOTIVATION

The following section aims to clarify some important issues about using current measures of core inflation at the Bank of Albania. Until the end of the year 2006 the measuring of core inflation as a trimmed mean[1] has been used, for two main purposes: to advocate monetary policy analyses; to forecast headline inflation by means of modelling the underlying and non-underlying

components. It is argued from the statistical and empirical viewpoint (*Schiesser 1998; Çeliku, 2005*), that the core inflation measured by trimmed mean is a qualitatively better indicator in comparison to other measures of this category. Its use is valuable in the monetary policy decision-making process, while its involvement in forecasting headline inflation[2] constitutes a debatable issue to Bank of Albania's forecasting staff. The technique of computing the core inflation through the trimmed mean approach imposes the use of various weights across time periods for underlying and non-underlying component. This specifics has created difficulties in modelling and constructing the aggregate headline inflation from these components, because it has induced another element of uncertainty, compared to other existing models. It has turned out that a part of errors in forecasting headline inflation by means of the corresponding model comes from the presence of various weights across time periods.

In an effort to reflect in the most argumentative way about the discussions related to recommendations on inflation forecasting and more concretely on using core inflation for forecast[3], other alternative core inflation measures will be presented in this material, which are also applied by other central banks with experience in this area. Exploring the approaches, their priorities and problems in measuring various variants of core inflation is done in view of the degree of usefulness of each method in the analysing and forecasting process of the headline inflation at the Bank of Albania. The results from various statistical criteria have backed the process of estimating the degree of usefulness of the proposed methods for measuring the core inflation in Albania's case.

The assessment period is extended from January 1998 to December 2007. December 2007 coincides with the moment of introducing the reviewed CPI basket and the rebasing process of CPI. Preliminary estimates made in 2008 indicate that changes in CPI basket weights have not brought about any statistically significant changes in the assessment of core inflation measures.

2. CORE INFLATION AND DECISION-MAKING IN MONETARY POLICY

The literature defines core inflation as the permanent, long-term part of the headline inflation. From the central bank's viewpoint, core inflation constitutes that part of headline inflation, which is caused mainly from monetary factors. Based on previous theoretical considerations, the core inflation would result after excluding from the headline inflation the short-term or transient movements, which are usually caused by factors beyond the monetary policy scope.

The practice of measuring core inflation provides a variety of approaches. The selection of the approach on whose basis an appropriate series is provided for the core inflation is a debatable issue in academic circles and in those of central bankers (Silver, 2006). The central banks use various measures to

core inflation, depending on the fact: whether they have the core inflation or the headline inflation as their ultimate target; and whether they use it or not in the headline inflation forecasting process. In all cases it is aimed to select those methods that:

- Manage to prevent at maximum the transient fluctuations from the headline inflation. Though such fluctuations do not remain beyond inflation analysis, their treatment should not be determinant in the monetary policy decisions;
- Have a high degree of transparency, so that communication of this indicator is as comprehensible as possible to the public.

Application of sophisticated methods is estimated to generate qualitatively better measures of core inflation. But, such methods are less transparent and less comprehensible to the public and frequently the core inflation figure remains somewhat in the "ownership" of a very close circle of economy experts.

Albers (2006), discussing the monetary policy at the Bank of Albania, the importance of the forecasting process and the inflation forecasting performance, emphasized that there might exist a very clear distinction between the results of the inflation forecasting models and the monetary policy decision-making process. In this context, he stresses the idea that never should the forecasts be mechanically related to the decision-making process. In the analysis he makes about the models, he comments that the forecasting model of the aggregate headline inflation (core and non-core) is useful. But, like the authors of the paper[4], he assesses that the trimmed mean approach increases the difficulties in the headline inflation forecasting process (various weights across the time) and in the public understanding of the core inflation (low transparency).

3. PROPOSED METHODS

The methods of measuring core inflation vary from the simplest to the most sophisticated ones[5]. This paper reveals the results of two new measuring methods: the permanent exclusion-based method and the reweighting one. The application of these methods is based on statistical distribution features of inflation rate deviations, according to basket items and magnitude of these deviations[6].

3.1. PERMANENT EXCLUSION-BASED METHOD

Measuring core inflation in central banks of various European countries indicates that the trimmed mean approach is optimal due to statistical features (Vega, Wynne, 2001). Notwithstanding this fact, the European Central Bank and other central banks prefer permanent exclusion-based method (PE) of some basket items. In comparison with other methods, it is easily applicable, much more transparent and comprehensible to the public. Its application

would prevent the problem of weights change in the forecasting process. For these reasons, Albers and Allen (2006) assess that the use of such method is much more promising to the Bank of Albania.

Based on the permanent exclusion method, on other central bank's experiences and on economic analysis of our consumer basket price behaviour, it is assessed that the following items may be excluded from the latter one: highly seasonal services and goods that cause temporary price fluctuations (usually unprocessed food items), administered prices items; goods whose prices are frequently subject to fiscal policy; goods whose prices are closely related to the foreign conjuncture.

Table 1 List of excluded items

Fruit	(high seasonality)	unprocessed products
Vegetables, potato included	(high seasonality)	unprocessed products
Fresh fish	(seasonality)	unprocessed products
Coffee		excise good
Alcoholic beverages		excise good
Tobacco		excise good
Power		at administrated price
Water supply		at administrated price
Services to personal transport vehicles - fuel/oil		excise good; at a price influenced by international market conjuncture

Their weight to CPI basket is about 22 percent. Hence, the core inflation measurement includes almost 78 percent of basket goods and services[7]. The fact that the weights are fixed for the "core inflation" and "non-core" inflation, makes the permanent exclusion-based method simpler in forecasting the headline inflation[8]. The forecasting assumes that the core and non-core parts do not affect each-other. In a simpler sense, the part of core inflation is not expected to be affected by factors outside the monetary policy. This assumption helps include in the headline inflation forecast, such elements as: price changes of goods with a high seasonality, which are forecasted based on autoregressive models; administered price changes, based on their assumptions; excise goods price changes, based on their assumptions; fuel price changes, modelling them on the basis of international market forecasts. Each of the above components is weighted to the corresponding weight in the CPI basket.

As long as external elements have not been involved in the past[9] specifically in the forecasting process the alternative of permanent exclusion brings about a novelty, even on the headline inflation forecasting process. Relations to monetary factors, involvement in a more structured way of the external factors to the headline inflation, would help both the forecasting process and the analysis one[10].

Notwithstanding the above priorities, the concerning aspects of such a method relate to whether the excluded part carries over or not the information about the monetary/core inflation or the permanent inflation. Cechetti (2006), discussing the core USA inflation, underlines the idea that permanent exclusion

of some items does not always carry within itself only the transitory inflation. It may contain information about monetary inflation, which is reflected even in the long-term inflation trend. Another limitation appears in modelling: to obtain the headline inflation, it is assumed to neglect the relations among core inflation parts, a fact that may weigh down on a more complex treatment of the interdependence among inflation components.

3.2 REWEIGHING THE CPI BASKET APPROACH

By means of the reweighing approach, none sub-item is excluded permanently[11] from the consumer basket, on which the CPI is computed. This set of methods does not fully ignore casual or transient price movements (either positive or negative), since in certain cases they may represent an internal inflationary process that should not be neglected by the monetary policy. The estimation technique of core inflation according to this method consists in trimming the contribution of sub-items that present high price volatility across the time, in the re-calculated price index. Such core inflation indices are used by the Central Bank of Canada and the Bank of England. Referring to respective approaches, we will present below the endeavours made for new measures to core inflation in Albania.

3.2.1. "Double weighting" method (DW)

In "double weighting" model (DW), every sub-item of the consumer basket is assigned a double weight, along with the official weights to the consumer basket. The rationale here is that a smaller weight is given to sub-items, whose prices have a high volatility. The standard deviation is used as an indicator for inflation volatility. The double weight assigned to these sub-items is the inverse of the standard deviation of relative price changes. Hence, the greater the standard deviation, the smaller is the weight of the sub-item. (See Table 2)

Table 2 Sub-items, whose weights have changed more in double weighting measure

Sub-items	Weight in CPI (1)	Weight in DW (2)	Ratio (2/1)
Bread and grains	7.5	14.9	1.9
Fruit	3.9	1.2	0.3
Vegetables, potato included	6.7	2.2	0.3
Rent	1.5	0.8	0.5
Imputed rent	16.9	9.5	0.6
Energy	4.6	2.0	0.4
Services to personal transport vehicles	1.6	0.6	0.4

The table depicts that "Fruit" is a high volatility sub-item. "Vegetables, potato included" in the new index, π^{DW} account for a weight three times smaller than their official weight in the CPI basket. The opposite takes place in low volatility sub-items, such as "Bread and grains", whose prices are regarded as almost "frozen" or "negotiable". Core inflation index measured by double weighting method will be calculated as follows:

$$\pi_t^{DW} = \sum_{i=1}^{n} \pi_{it} * dw_{it}$$

where: dw_{it} is the double weight. These weights get normalised, so that their sum is equal to 1; π_i is the annual inflation rate of each sub-item *i*.

$$dw_{it} = \left\{ \frac{w_{it} * \frac{1}{\sigma^i}}{\left[\sum_{i=1}^{n} w_{it} * \frac{1}{\sigma^i} \right]} \right\}$$ where: σ_i is the standard deviation.

The main advantage of this method relates to the fact that each basket item is included in measuring core inflation. Along with this positive aspect, this method is loaded with subjective elements reflected in the selection of the period under which the standard deviation of relative price changes is calculated, and therefore, it is reflected in the reweighting process.

3.2.2. "Persistent weights" method (PW)

In 'persistent weights' (PW) approach, the historical 'persistence' of inflation determines the weight of each sub-item. Cutler (2001) and Blinder (1997) identify core inflation as the long-term (or persistent) component of aggregate inflation. The inflation persistence is a measurement that indicates how slowly the inflation changes in the corresponding sub-item. According to this method, the economic importance of the items (estimated by their weight to consumer basket) bears no significance in the construction of this indicator.

In order to find persistence weights, each sub-item of the basket will be estimated by a first order autoregressive model AR (1).

$$\pi_{i,t} = \alpha_i + \rho_i \pi_{i,t-12}$$

where, π_i is the inflation of the sub-item *i*.

The ρ_i coefficient is a persistence inflation indicator of each sub-item. The sub-items with $\rho_i > 0$ are included in calculating the PW core inflation index, giving an equal weight to the autoregression coefficient. These weights get normalised so that their sum is equal to 1. The sub-items with the coefficient $\rho_i < 0$ are not included in the index (assigning a zero weight)[12], because their inflation returns immediately to its mean.

Core inflation index, π^{DW}, with the persistent weight method, is calculated as follows:

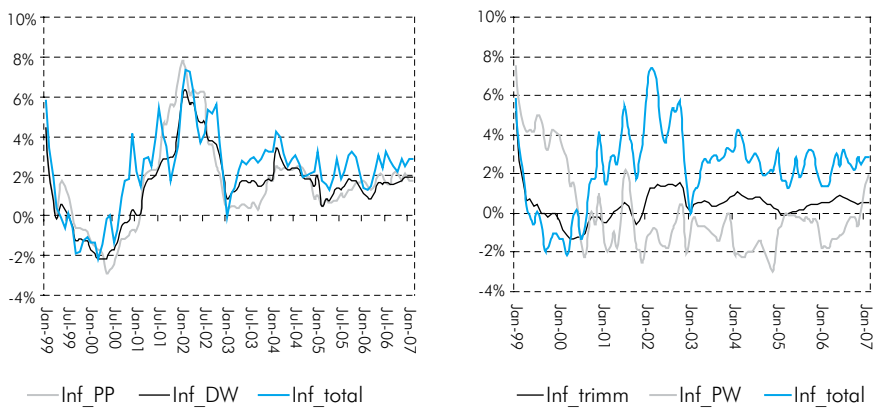
$$\pi_t^{PW} = \frac{\sum_{i \in \rho > 0} \rho_i * \pi_i^t}{\sum_{i \in \rho_{i>0}} \rho_i}$$

The persistence weights are changed each year using a rolled-forward monthly data set. The need for a lengthy time series for the estimate means that much of the data on which the estimates are based are quite unrelated to the period of the price comparison. This is problematic since the data are treated symmetrically in the estimator, with just as much influence given to remote past periods, as to past and near ones. Second, the data are overlapping so that any change in the estimated coefficients will be smoothed.

4. CORE INFLATION – A GOOD INDICATOR OF CURRENT AND FUTURE HEADLINE INFLATION TRENDS

"Ideal" core inflation is an indicator which is a good predictor of the trend of headline CPI inflation. The following section will analyse how "ideal" the above-mentioned core inflation measures are, based on the outcome of some statistical indicators.

Chart 1 Various measures of core and headline inflation on an annual basis (in %)



Source: INSTAT and authors' estimates

4.1. DOES CORE INFLATION CAPTURE PERSISTENT INFLATION MOVEMENTS OR IS IT VOLATILE?

The tables 3 and 4 show the results of statistical indicators (monthly mean, standard deviation of monthly changes and the coefficient of variation)[13] on headline inflation and on various core inflation measures. It results that in terms of volatility, for the whole period of 1999-2007, (table 3), core inflation computed on the basis of permanent exclusion-based method and the one based on double weighting present a lower volatility than the

headline inflation. Both other inflation measures have a very low mean and a high standard deviation. Table 4 shows the same statistics for 2002m1-2007m12, to see how various core inflation measures perform over a low and stable inflation period. Concerning such period, core inflation volatility measured according to trimmed mean drops sharply, while the one measured according to permanent exclusion method presents a lower volatility than any other measures. The core inflation computed by persistence weights continues to be the most volatile.

Table 3 Some statistical data (period: 1999m1-2007m12)

	Mean (1)	Standard deviation (2)	Variation coefficient (2)/(1)
Monthly headline inflation	0.2	1.3	6.5
Trimm_Infl	0.02	0.26	11.4
PE_Infl	0.13	0.45	3.6
DW_Infl	0.12	0.56	4.5
PW_Infl	0.03	2.60	84.6

Source: Authors' estimates

Table 4 Some statistical data (period: 2002m1-2007m12)

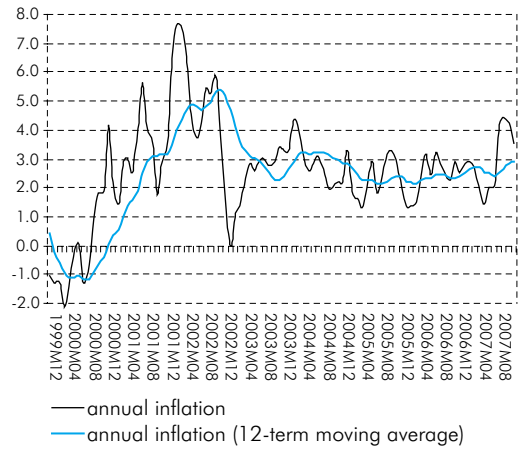
	Mean (1)	Standard deviation (2)	Variation coefficient (2/1)
Monthly headline inflation	0. 2	1.0	5.0
Trimm_Infl	0.04	0.11	3.0
PE_Infl	0.11	0.30	2.5
DW_Infl	0.14	0.49	3.5
PW_Infl	0.04	2.87	79.0

Source: Authors' estimates

Numerous studies use the 12-term moving average benchmark of headline inflation. This benchmark will be used to calculate various measures of core inflation even in Albania's case.

Table 5 depicts the results of RMSE[14] and MAD[15] indicators, which express various forms of deviation between core inflation measures and 12-month headline inflation trend. It comes out of the comparative analysis that the permanent exclusion and double weighting methods provide better statistics on core inflation, testifying a larger approximation to inflation rate trend. It is assumed here that the latter one changes gradually. To compare the descriptive statistical results of the whole period with those of a low and stable inflation period, the same analysis is made, starting from January 2002. Shortening the calculation period does not bring about obvious changes in the outcome.

Chart 2 12-month trend and overall annual inflation in % for 1999 – 2007



Source: INSTAT and authors' estimates

Table 5 RMSE and MAD

Measuring core inflation	RMSE	MAD	RMSE	MAD
	1998m1 – 2007m12		2002m1 – 2007m12	
Trimm_Infl	0.05	0.05	0.04	0.03
PE_Infl	0.02	0.02	0.02	0.02
DW_Infl	0.02	0.02	0.02	0.01
PW_Infl	0.07	0.06	0.09	0.07

4.2 DO CORE INFLATION MEASURES HELP FORECASTING LONG-TERM INFLATION TREND?

To assess whether core inflation measures predict future inflation trend, initially, the simple linear correlation coefficient between the core inflation and the total one is computed for 6, 12 and 18 coming months.

Table 6 Correlation coefficient

		CPI		CPI		CPI		CPI	
		Monthly	Annually	Monthly	Annually	Monthly	Annually	Monthly	Annually
Trimm_Index	Annually		0.64		0.64		0.64		0.64
	Monthly	0.68		0.68		0.69		0.70	
PE_Index	Annually		0.76		0.76		0.76		0.76
	Monthly	0.39		0.39		0.39		0.40	
DW_ Index	Annually		0.90		0.90		0.90		0.90
	Monthly	0.86		0.86		0.86		0.86	
PW_Index	Annually		0.09		0.09		0.13		0.09
	Monthly	0.74		0.74		0.73		0.73	

Results of the correlation coefficients are mix, referring to (monthly/annual) change rate. The correlation coefficients for three first measures of core inflation on annual basis are relatively high, indicating that the core inflation contains information about future overall inflation movements. DW core inflation proves to be superior, both in monthly and annual terms. PW core inflation turns out to be useless for forecasting on annual basis, but it is ranked second on a monthly basis. It is worth mentioning that the correlation coefficients are generally stable over the time, indicating stability of the relation between these measures and the overall inflation.

4.2.1 A simple model on the predictive ability of core inflation measures

To better understand the predictive ability of various measures to core inflation, a simple auto-regressive model will be applied, including past information on the headline inflation, along with past information on core inflation. According to Lafléche (1997), this simple method may analyse whether a core inflation measure contains additional information that improves the overall inflation forecast.

$$\pi_t^{CPI} = \alpha_0 + \alpha_1 \pi_{t-1}^{CPI} + \alpha_2 \pi_{t-2}^{CPI} + \alpha_3 \pi_{t-1}^{Core}$$

Where, π_t^{ICK} is the overall annual inflation and π_{t-i}^{core} is the annual rate of various measures to core inflation for the period *t-1*.

Table 7 shows the results according to various core inflation measures

*Table 7 Regression results**

π^{Core}	α_0	α_1	α_2	α_3	$\bar{R}^2$	S.D
ΔCPI	0.006 (2.4)		0.71 (7.6)		0.51	1.4
Trimm_Inf	0.003 (2.2)	0.96 (17.9)		-0.39 (-3.3)	0.80	0.8
PE_Infl	0.007 (2.3)		0.4 (2.6)	0.4 (3.2)	0.61	1.2
DW_Infl	0.005 (2.4)	0.87 (8.3)	-0.36 (-3.4)	0.41 (3.1)	0.82	0.8
PW_Infl	0.006 (2.4)		0.7 (7.6)	-0.008 (-0.4)	0.51	1.4

Note: Regression coefficients; in parentheses, t-statistic; corrected coefficient (R^2) and standard deviation (S.D) for each regression.

Judging from R^2 magnitude, it results that the core inflation measured according to trimmed mean, permanent exclusion, and double weighting-based methods, contains information on future headline inflation trend. Such a thing not only is not verified by core inflation measured according to persistent weights-based method, but above all it results statistically insignificant.

4.2.2 Characteristics of excluded components

In an effort to statistically estimate the ability of various core inflation alternatives to predict the headline inflation movements, the following regression form, proposed and applied by Rich, Steindel (2005)[16], including even past rates of the headline and core inflation, will be used:

$$\pi_{t+h} - \pi_t = \alpha_0 + \alpha_1 \pi_L + \alpha_2 \pi_L^{Core} + ß\,(\pi_t - \pi_t^{Core}) + \varepsilon_t$$

Where, π_{t+h} is the annual rate of the headline inflation for the period *t+h and* π_t^{Core} is the annual rate of various core inflation measures, whereas *L* is an indicator of different lags, concretely *(1,2,3,4)*. Each regression is estimated for *h*= 6, 12 and 18.

This simple regression indicates how "the current core inflation deviation" may explain the future headline inflation movements. Testing the null hypothesis *H0*: ß=-1 we may verify whether the deviation of the core inflation or the non-underlying component of the headline inflation expressed by the term (π_t - π_t^{Core}), measures accurately the transitory movements of the latter one. If the coefficient ß is higher (smaller) than 1 in absolute value, then it is concluded that the deviation of the core inflation underestimates (overestimates) inflation changes, hence the amplitude of current transient movements. Tables 8-10 depict statistical information respectively for the periods *h=6, 12, 18*. The assessed information indicates that only the trimmed mean-based method may provide a signal about the overall inflation trend for 6 coming months.

It is obvious that extending the time horizon until 18 months ahead, it is the other measures (reweighting- and permanent exclusion-based methods) that provide the signal on long-term headline inflation trend.

Tables 8 – 10 Results of regression and null hypothesis

	Trimm_ind	PE_ind	DW_ind	PW_ind
	0.67	0.53	0.41	0.40
	-0.85 (-6.9)	-0.31 (-2.3)	-0.52 (-1.9)	-0.6 (-7.5)
P- value*	0.22	0.00	0.09	0.00

	Trimm_ind	PE_ind	DW_ind	PW_ind
	0.80	0.33	0.35	0.60
	-1.3 (-11.4)	-0.45 (-2.1)	-0.92 (-3.0)	-0.90 (-10.5)
P- value*	0.00	0.01	0.80	0.24

	Trimm_ind	PE_ind	DW_ind	PW_ind
	0.70	0.52	0.45	0.70
	-1.6 (-10.2)	-0.63 (-2.3)	-1.3 (-3.4)	-1.0 (-12.6)
P- value*	0.00	0.17	0.43	0.96

Note: P – value, has resulted after performing the Wald test.
Δ- annual rate

4.2.3 Forecasting headline inflation through individual core inflation components

Until now the core inflation behaviour is analysed as an isolated measure. This section will include other variables, which may contain additional information on future inflation performance. The data are obtained in the form of 12-month changes, or in DLOG form (Variable, 0, 12) and the estimate period is extended from M1:1998 to M12:2007.

Permanent exclusion-based method allows headline inflation forecasting, aggregating the CPI's underlying and non-underlying components. The underlying component (CPI_PE); the unprocessed food component of high seasonality (CPI_UP), the country's fuel prices component (CPI_F) are forecasted by means of models, whereas the administered prices and the excise ones are entered as information of the addition in aggregating the forecasted CPI, taking into account the government's projects in terms of changes in corresponding prices and tariffs.

a) CPI_PE – the underlying consumer price index, according to permanent exclusion-based method[17]:

DLOG(CPI_PE,0,12) = -0.004 - 0.009*DLOG(12_TB yield(-5),0,12) + 0.6*DLOG(CPI_PE (-1),0,12)
(-3.3) (-2.7) (13.1)
-0.09*DLOG(UN(-2),0,12) + 0.1*DLOG(CPI_PE(-5),0,12)
(-6.5) (3.1)
R^2 = 0.96; S.E.= 0.005; DW= 2.1;

The annual change of the TB 12-month yield, being evidenced for the first time, as a monetary factor that explains core inflation performance, is related negatively to the latter one, with 5 months lag. Until now the M1 has served as a monetary factor used for core inflation forecasting[18]. The M1 role in core inflation forecasting approaches is questionable, under the conditions of structural changes of the banking market over two last years. Along with problems presented by M1, a more important reason that supports the presence of interest rates in core inflation forecasting is related to the fact that monetary policy makes decisions on interest rates and not on monetary aggregates, in order to put inflationary pressures under control. Annual changes of the unemployment rate turn out to be statistically significant.

b) CPI_UP – the unprocessed products index is forecasted more appropriately by an ARIMA (1,1,12) process.

DLOG(CPI_UP,0,12) = 0.04+0.73* AR(1)+0.56*MA(6)
(1.8) (10.6) (6.3)
R^2 = *0.63; S.E. = 0.05; DW=1.9*

Such a form allows the forecasting process of this component, taking into account historical movements in prices of high seasonality products.

c) CPI_F – the country's fuel price index:

DLOG(CPI_F,0,12) = 0.02 + 0.71*DLOG(CPI_F (-1),0,12) + 0.12*DLOG(Oil_Abroad(-1),0,12)
(4.2) (7.0) (9.0)
+0.19*DLOG(lek/usd(-1),0,12) - 0.29*DLOG(CPI_F (-2),0,12)
(6.3) (-3.3)
R^2 = 0.95; S.E.=0.01; DW= 1.9;

The country's oil prices are positively related to the international oil price performance (Oil_*Abroad*) with one month lag and to the (lek/usd) exchange rate with the same lag.

Finally, weighing the annual change rates of the forecasted indices of components with their weights, the total annual inflation is obtained[19].

INF_CPI=(INF_CPI_PE*w_PE)+(INF_CPI_UP*wUP)+(INF_CPI_F*w_F)+(INF_CPI_ADM*w_ADM) +(INF_CPI_EXCISE*w_EXCISE)

Where, w_*PE*, w_*UP*, w_F , w_*ADM* , w_EXCISE are unchangeable weights of the corresponding components index (Table 11) and INF_component is the annual inflation on a monthly basis of the corresponding components.

Table 11 Weights according to components

Components	Weights
w_Core	0.783
w_UP	0.114
w_F	0.016
w_ADM	0.050
w_EXCISE	0.037
Total	1.000

The forecast is made for the period M12:2006 to M12:2007, in order to test the performance of the forecasting model explained above. The estimation of forecasting errors in a 12-month horizon (RMSE), with the core inflation measured as a trimmed mean, resulted about 1.5, whereas with the PE measure (according to ECB approach) it turned out to be 0.5. Sometimes the forecasting overestimates the actual rate and sometimes it underestimates it quite moderately, standing close to actual rate trajectory. The forecasting error series (actual rate deviation from the one predicted for forecasts carried out 12 months ago) has almost a normal distribution with N~(0,1) parameters, suggesting casual deviations and not systematic ones, in one direction or another, which would put into doubt the econometric suitability of the model.

Given that the reweighting method does not allow the calculation of non-underlying component, only core inflation is modelled for these two measures, depending on monetary and real indicators. Concerning core DW inflation, M1 and unemployment rate turn out to be variables and exponents.

DLOG(DW,0,12) = -0.0001 + 0.90*DLOG(DW (-1),0,12) + 0.008*DLOG(M1 (-12),0,12) - 0.036*DLOG(UN(-4),0,12)
(-0.14) (31.5) (1.7) (-4.3)
R^2= 0.94 and S.E =0.4

Results of core inflation forecasts according to double weighting measure reveal lower rates of this measure than the headline inflation, suggesting the presence of systematic deviations and a positive sign in forecasting. The forecasting results indicate that this core inflation measure does not bring about an added value to the overall inflation forecasting, because it does deviate from the statistical estimating features of forecasts. In the meantime, the core inflation according to PW measure indicates an insignificant statistical relation to the monetary aggregates. The discrepancy of this criterion (relation to monetary aggregates) makes this core inflation measure useless.

5. CONCLUSIONS

Core inflation measurement and forecast constitute important information for the decision-making process of a central bank. The selection of an appropriate measure is a debatable issue, since it is related to the purpose of using the core inflation series. Core inflation measuring approaches and methods are various. The sophisticated methods tend towards more accurate measures, but at the same time they have a low degree of transparency and require a qualitatively better and more complete database. Under the conditions when the meeting of these criteria is difficult in Albania's case, the material reveals new core inflation measures, based on the economic behaviour of CPI components criteria and on statistical distribution of relative price deviation of basket goods and services from their mean.

Based on the rich experience of different central banks in core inflation measures and forecasting, along with existing measures of the core inflation according to trimmed mean approach, the material reveals the results of core inflation measure according to permanent exclusion-based method, as well as two measures that operate according to the logics of re-weighting the basket items, i.e., not excluding the basket items. Each of the methods is associated with judgement on their advantages and disadvantages. The permanent exclusion-based method is simpler in understanding. It prevents the problem of various weights and what is more important, based on it we can generate forecast for the headline inflation. On the other hand, its problems relate to the exclusion aspect, which permanently neglects a part of basket goods, which frequently contain information on monetary/core inflation.

This problem is not experienced in the category of reweighting methods. Moreover, their positive aspect rests mainly on this point, on non-permanent exclusion of some basket items. On the other hand, these methods are charged with subjective elements, a fact that raises doubts concerning measures carried out by means of them. Another concerning aspect related to them is that inflation forecasting does not go beyond core inflation forecasting. These measures provide forecasts only for the long-term headline inflation trend, through a simple core inflation modelling.

Based on the performed tests, the new core inflation measures (the permanent exclusion-based method and the reweighting one) indicate that the core inflation informs on the headline inflation trend for a period of 18 months ahead. The core inflation measured as a trimmed mean informs better on the short-term overall inflation trend (till 6 coming months). Though the permanent exclusion-based method meets more completely the criteria, it suggests that for analysis purposes, other core inflation categories should be followed.

6. PROPOSALS

- The drawn conclusions indicate that the measure that qualitatively meets the statistical criteria and those of transparency and forecasting, is the one provided according to permanent exclusion-based approach. The main priority stands in the forecasting process. The underlying component is significantly affected by the developments of interest rate and treasury bills yield of 12-month maturity and by unemployment rate. The modelling of other components provides more complete information about the impact of non-monetary factors on non-underlying parts of the headline inflation, which were not previously taken into account in a structured way. Given the above considerations, it is proposed that the existing set of forecasting models is added with the headline inflation forecasting model from the core inflation according to the permanent exclusion-based method.
- Core inflation generated by the exclusion-based method ensures a transparent and understanding means of communication for the broad

public. Reporting it, along with headline inflation and other core inflation measures, aims to inform about monetary inflation components. The publication and analysis of this inflation indicator would help economic agents and the broad public to accurately understand the monetary policy decisions. Therefore, it is proposed to include core inflation reporting and analysis to periodical reports of the Bank of Albania's monetary policy.

LITERATURE

Albers, R., Comments on "Inflation forecasting and forecasting estimation", Round Table "Inflation targeting 2", December 1-2, 2006, Bank of Albania.

Allen, B., Comments on "Estimating total inflation forecasts for April 2005 – September 2006", Round Table "Inflation targeting 2", December 1-2, 2006, Bank of Albania.

Allen, B., "Recent developments in inflation targeting", technical seminar at the Bank of Albania, December 2006.

Cecchetti, Stephen G., "Core Inflation is an unreliable guide", Comment. Financial Time, September 12, 2006.

Cutler, "Core Inflation in the UK", External MPC Unit, Discussion Paper No.3

Çeliku, E., "Core inflation: its measuring and relation to monetary aggregates", Discussion Paper, 2005/2, Bank of Albania.

Çeliku, Shtylla, Hashorva, Hoxholli and Kota "The portfolio of econometric models for inflation forecasting at the Bank of Albania", Discussion Paper presented at Round Table Inflation Targeting 2, December 1-2, 2006, Bank of Albania.

Hogan, Seamus, Marianne Johnson, and Thérèse Laflèche (2001). "Core Inflation." Technical Report 89, Bank of Canada

Kota, Hashorva, Peeters, and Çeliku "Evaluation of the Headline Inflation Forecasts made in April 2005 – September 2006", presented at Round Table Inflation Targeting 2, December 1-2, 2006, Bank of Albania.

McNeilly, Schiesser, "Reducing Inflation: Lesson from Albania's Early Success", WP/98/78, IMF Institute, May 1998.

Rich Robert, Steindel Ch. "A Review of Core Inflation and an Evaluation of Its Measures" Staff Report no. 236, December 2005

Silver, M., "Core Inflation Measures and Statistical Issues in Choosing Among Them", WP/06/97, IMF.

Vega, Wynne, "An Evaluation of some Measures of Core Inflation for the Euro Area", WP/ No. 53, ECB, April 2001.

Wynne, "Core Inflation: A Review of some conceptual issues", www.bis.org WP, nr. 5, April 1999.

ENDNOTES

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[1] Applying the trimmed mean approach (Çeliku, 2005), currently there are excluded about 30% of the basket items (sub-items): from the CPI basket, by 15% in each side of distribution of deviations.

[2] Two forecasting models (on a monthly and quarterly basis) currently used at the Bank of Albania have been constructed on the concept of core inflation as a trimmed mean.

[3] The Bank of Albania, Round Table "Inflation targeting 2", December 2006

[4] Çeliku, Shtylla, Hashorva, Hoxholli and Kota "Portfolio of inflation forecasting models at the Bank of Albania", Discussion Paper, presented at Round Table "Inflation Targeting 2", December 2006, BoA.

[5] The trimmed mean stands by the middle of methods, and the statistical criteria assume a significant weight in selection (Sivler, 2006).

[6] Econometric methods have not been treated due to low degree of transparency and high requirements they have in terms of database quality.

[7] In the reviewed consumer basket (December 2007), these weights are respectively 23% and 77%, that is, they do not present essential changes.

[8] Moreover, it is transparent, which is a stronger requirement in the case of inflation targeting regime, when the core inflation is targeted.

[9] Until end of 2006.

[10] For simplicity reasons, this core inflation measure will be referred to as PE-Inf in the material.

[11] As it happens in the case of the trimmed mean approach.

[12] In this aspect, this method is similar to the trimmed mean approach.

[13] It is a statistical indicator that serves to make comparisons about volatility.

[14] Root mean square error.

[15] Mean absolute deviation.

[16] Used also in various researches, such as Clark (2001), Hogan, Johnson and Laflèche (2001), Cutler (2001) and Cogley (2002).

[17] According to ECB approach.

[18] As a positive relation to core inflation, at 8 –month lag.

[19] The other components are included on the basis of assumed series for the administrated prices (energy, water) and excise goods prices.

MEASURING IMPORT AND EXPORT FUNCTIONS IN ALBANIA*

ABSTRACT

This paper uses an error correction model to measure the elasticity of merchandise import (export) flows to (from) Albania with respect to domestic (foreign) real demand, developments in relative prices abroad and at home, and local currency market fluctuations. The model specification is intended to find out whether trade flows respond differently to the explanatory variables in the long and short run. The estimated trade elasticities are useful for forecasting future trade flows as well as to policymakers who need to evaluate commercial policies or exchange rate devaluation options to improve the merchandise trade balance.

1. INTRODUCTION

The developments in foreign trade flows could have large implications for small open economies, therefore their trends are followed closely by markets and policy makers designing macroeconomic policies. To maintain internal and external economic stability, a negative balance between exports and imports has to be financed by an equal positive amount of net capital inflows. The prediction of both export supply and import demand find thus an important practical use in the production and balance of payments models for policy purposes. In addition to that, the degree of imports and exports elasticities are useful for policy makers who need to choose between commercial policies or exchange rate devaluation options in order to improve the position of foreign trade with the rest of the world.

The conventional economic theory on international trade links the long-run quantity demanded for imports (exports) to domestic (foreign) income growth, developments of prices at home and abroad, and the changing value of local currency. Indeed, the early contributions focused primarily on the relative price effects on trade flows. Two comparable studies in this regard are the analyses made by Orcutt (1950) and Kreinin (1967), who attempted to explain the import and export elasticities for a number of countries as a function of prices.

Later econometric analyses, however, realized that income effects were also at least as important as price elasticities in explaining developments in trade balance, especially in a growing economy. In a two-country model, even if prices remain constant and income grows at same rates, the trade balance in each country would theoretically change if income elasticities of import demand differ between them. In this case, supposing initially balanced trade account, the country with higher import elasticity will experience a larger import growth

than its exports, thus worsening foreign trade balance and putting downward pressure to the local currency value. Houthakker and Magee (1969) estimated the income and price elasticities for a number of developed countries and the results showed that even if their production and prices increased at the same rate the trade balance improvement or deterioration in some countries was influenced by disparities in income elasticities of their demand for imports.

The collapse of the Bretton Woods system, however, ended the period of fixed exchange rates and researchers and policy makers everywhere were unfamiliar with the possible reversals in the trade balances due to foreign exchange fluctuations. Previous intuition used to rely on the assumption that the magnitude and timing of floating exchange rate effects on the trade flows would resemble the reaction to relative prices. Searching for empirical evidence on price and exchange rate influences in foreign trade, many studies have since then used both variables by altering or adjusting them in order to check for combined or separate effects (see for example Junz and Rhomberg (1973); Wilson & Takacs (1979); Warner & Kreinin (1983); Bahmani-Oskooee (1986); Bahmani-Oskooee & Niroomand (1998); Bahmani-Oskooee & Kara (2003, 2005).

Using data from six major industrial countries for the period 1957-71, Wilson and Takacs (1979) found that (i) the full reaction of imports and exports to exchange rate changes tended to be shorter than for changes in prices; and (ii) trade flows were initially much more sensitive to exchange rate fluctuations than to price changes. The results, however, are based on a sample period in which exchange rates were fixed because of the Bretton Woods agreement; hence the magnitude and size of the responses might not be very conclusive.

Another comparable study by Warner and Kreinin (1983) showed that the separation of prices into prices and exchange rate components yielded more accurate results than the composite relative price variable. Comparing the performance of imports and exports in several major economies pre- and post-Bretton Woods era, they concluded that floating exchange rates are an important determinant of import and export flows.

Bahmani-Oskooee (1986) estimated the speed and size of relative price and exchange rate effects in Brazil, Greece, India, Israel, Korea, South-Africa and Thailand for the 1971-80 period. The results showed that trade flows reacted faster to exchange rate movements than to price changes, which is consistent with the Wilson and Takacs' (1979) findings; however, the magnitude and size of the response estimated by Bahmani-Oskooee (1986) – unlike the Wilson and Takacs's (1979) results – indicated that import and export demand in these developing countries were more sensitive to prices than exchange rate fluctuations.

As for Albania, Shtylla and Sojli (2006) have combined the effects of relative prices and exchange rate on trade flows together into a single real exchange rate variable, therefore making no distinction between their elasticities. Using

quarterly data from 1997 to 2003 they found that the long-run impact of the real effective exchange rate on the volume of imports is slightly higher than that of domestic GDP. In the export equation, the relationship between current exports and the real exchange rate with one time lag was in opposition to expectation in both the long and the short run, which could have entailed a test on likely J-curve effects.

Another paper by Agolli (2004) analyzed the response of bilateral trade flows in Albania as a function of income, relative prices and a variable measuring exchange rate uncertainty. The empirical results indicated that in the long run, the volume of Albanian exports and imports with Greece, Germany and Italy were a lot more sensitive to the exchange rate uncertainties than relative price changes, although the degree of the response was more related to countries' specifics.

This paper uses an error correction model to measure the elasticity of merchandise import (export) flows to (from) Albania with respect to domestic (foreign) real demand, developments in relative prices abroad and at home, and fluctuations in local currency value. The model specification is also intended to find out whether trade flows respond unevenly to the explanatory variables in the long and short run. The next section briefly introduces the methodology used in the error correction model and then discusses the elasticity estimates, which are useful for forecasting future trade flows and throw some light on economic policies aiming at curbing trade deficits.

2. MEASURING THE IMPORT DEMAND AND EXPORT SUPPLY FUNCTIONS

2.1 METHODOLOGY

To estimate the import demand and export supply in Albania we have taken the respective functional forms from Bahmani-Oskooee (1986), where the volume of merchandise imports (exports) is determined by domestic (foreign) demand, relative prices and the exchange rate. In the simplest form, the long-run relationship in each equation can be estimated as follows:

$$\log(x_t) = \lambda_0 + \lambda_1 \cdot \log(y_t) + \lambda_2 \cdot \log(p_t) + \lambda_3 \cdot \log(e_t) + v_t \qquad (1)$$

where

t = quarterly period;

x_t = merchandise imports (exports) in domestic currency at quarter t;

y_t = i) in the import equation, it is the quarterly domestic real GDP in leks, ii) in the export equation, it is the foreign real GDP based on export weights with Italy, Greece, Germany and Turkey;

p_t = relative prices measured as the ratio of foreign[1] over domestic price index (PF/PD); i) in the import equation, CPI indices are used, whereas ii) export equation uses the ratio of tradable prices;

e_t = average exchange rate: i) import equation uses the lek effective exchange rate based on trade weights with Italy, Greece, Turkey, Germany and China; while ii) export equation uses the Lek/Euro exchange rate;

λ_1, λ_2, λ_3 are the long-run parameters;

v_t = the error term.

Equation (1) outlines the long-run relationship among the variables in the import and export equations. Because all data series are in logs, the parameters indicate the elasticity of trade flows with respect to the explanatory variables. Parameter λ_1 in front of the output variable captures the sensitivity of import demand (export supply) to domestic (foreign) output. A rise in real (foreign) output should, theoretically, cause an increase in the demand for imported (supply of exported) goods, hence a positive relationship.

The λ_2 and λ_3 parameters are expected to be negative in the import equation since a rise in the price ratio and a depreciation of the effective exchange rate should lead to a smaller amount of imports. If domestic products would become expensive relative to goods sold in international markets, there could be a shift in consumption spending in favor of foreign goods. The same argument goes for the impact of local currency appreciation on the demand for imports. A fall in the effective exchange rate of the Albanian lek would make foreign goods more attractive since locals can purchase more goods abroad with less money.

On the other hand, the relative prices and the Lek/Euro exchange rate should have a positive impact on the quantity of exports, hence positive λ_2 and λ_3. A relatively faster growth in domestic prices would lower the price ratio and make domestic products more costly to international importers. Foreign demand for merchandise goods produced in Albania will also fall in response to appreciating value of the lek currency, since more money are now needed to buy the same amount of goods priced in leks.

It is generally agreed, however, that trade flows do not instantaneously adjust to their long-run equilibrium but they might respond to changes in the short-run also. Therefore, if the long-run relationships among the variables are cointegrated, both equations should be estimated in an error-correction modeling format. This enables us to find the long-run behavior of the endogenous variables while allowing for short-term adjustment dynamics. Import (export) changes in every period are thus estimated in the log-linear form as follows:

$$\Delta\log(x_t) = \beta_0 + \beta_1 \cdot \Delta\log(y_{t-l}) + \beta_2 \cdot \Delta\log(p_{t-l}) + \beta_3 \cdot \Delta\log(e_{t-l}) + \alpha_1 \cdot v_{t-l} + \beta_4 D'^{97} + \beta_5\, @seas(1) + \beta_6\, @seas(2) + \beta_7\, @seas(3) + u_t \qquad (2)$$

where the 'Δ' sign indicates a change; l shows the number of lags (up to 4 lags were used); β_1, β_2, β_3 are the short-term parameters; v_t is the residual obtained from the long-run relationship in equation (1); α_1 measures the speed of adjustment of imports (exports) towards the long-run equilibrium; D'^{97} is a

dummy for 1997 quarters; @seas are seasonal dummies; β_0 is a constant; β_5, β_6, and β_7 are parameters that capture seasonal effects; u_t is the error term.

In long run equilibrium, the error correction term measured from equation (1) should equal zero. However, a deviation of output, relative prices and exchange rate from the long-run equilibrium should cause the error correction term to be nonzero and each variable will have to adjust to partially restore the equilibrium relation. The speed of this adjustment is captured by the parameter α.

The import and export equations were each estimated in a two step procedure following the Engle and Granger's (1987) cointegration approach. In the first step (as indicated in Eq. (1)), the import and export equations measure only the long-run parameters of the cointegrating vector together with the dummy variables of concern. This measure serves as a test of the existence of any cointegration or long-run relationship between imported/exported goods and their explanatory variables.

The estimated long-run parameters from equation (1) are then used in the second step (Eq. (2)), which measures the short-run sensitivity of trade flows in a parsimonious error correction model. The estimation in this step starts by introducing a maximum of 4 lags for the differenced variables (because of the small sample size at hand), and then gradually dropping the statistically insignificant variables. In both steps, regression equations have been estimated using the least square method, covering the period from 1996Q1 to 2005Q4.

2.2 EMPIRICAL RESULTS

The modeling of import and export equations in an error correction format requires that each of the variables be integrated of order one. The unit root tests based on ADF and Phillips-Perron tests were therefore used to determine the stationarity level of each variable. Table I and II displays that almost all variables in levels appear to be *I*(1) variables. The high probabilities indicate that we can reject the null hypothesis of unit roots at the 5 percent level. Although some variables appear to be stationary in levels (i.e. *I*(0)) in one test, the results in the other test contradict that outcome and indicate they could be *I*(1) variables. Given the unit root tests, standard regressions in level form may be spurious.

Table 1 Unit Root Tests for Import Variables

	ADF test results				Phillips-Perron test results			
	Null Hypothesis: Unit root				Null Hypothesis: Unit root			
	Levels		1st difference		Levels		1st difference	
Variables	Prob.	Lag[a]	Prob.	Lag[a]	Prob.	Bandwidth[b]	Prob.	Bandwidth[b]
With constant								
Imports	0.13	7	0.00	4	0.55	39	0.00	14
Real GDP	0.93	0	0.00	0	0.93	3	0.00	5
Relative CPI	0.00	9	0.23	7	0.08	4	0.01	1

NEER	0.64	3	0.14	2	0.83	2	0.00	1
With constant and trend								
Imports	0.61	5	0.00	6	0.00	15	0.00	14
Real GDP	0.14	1	0.00	0	0.26	2	0.00	5
Relative CPI	0.33	7	0.01	6	0.33	3	0.01	1
NEER	0.02	5	0.32	2	0.19	2	0.00	1
Without constant and trend								
Imports	1.00	5	0.09	7	1.00	13	0.00	20
Real GDP	1.00	0	0.00	0	1.00	3	0.00	0
Relative CPI	0.01	6	0.03	7	0.01	4	0.00	1
NEER	0.54	3	0.02	2	0.48	2	0.00	0

[a]Automatic selection of lags based on AIC; [b]Newey-West bandwidth selection using Bartlett kernel

Table 2 Unit Root Tests for Export Variables

	ADF test results				Phillips-Perron test results			
	Null Hypothesis: Unit root				Null Hypothesis: Unit root			
	Levels		1st difference		Levels		1st difference	
Variables	Prob.	Lag[a]	Prob.	Lag[a]	Prob.	Bandwidth[b]	Prob.	Bandwidth[b]
With constant								
Exports	0.70	9	0.00	8	0.38	1	0.00	4
Foreign GDP	0.69	4	0.52	7	0.30	13	0.00	13
Relative Price	0.00	8	0.03	8	0.29	3	0.00	1
Lek/Euro	0.30	3	0.04	2	0.37	1	0.00	3
With constant and trend								
Exports	0.00	0	0.02	8	0.00	3	0.00	5
Foreign GDP	0.91	4	0.54	7	0.00	0	0.00	12
Relative Price	0.00	8	0.11	9	0.91	2	0.01	3
Lek/Euro	0.37	5	0.08	2	0.70	3	0.00	6
Without constant and trend								
Exports	1.00	9	0.00	0	1.00	6	0.00	2
Foreign GDP	0.98	4	0.27	7	1.00	11	0.00	16
Relative Price	0.60	9	0.00	8	0.12	3	0.00	0
Lek/Euro	0.69	3	0.00	2	0.72	1	0.00	3

[a]Automatic selection of lags based on AIC; [b]Newey-West bandwidth selection using Bartlett kernel

The long-run relationship among the variables in import and export functions was determined by employing the Johansen test and Engle and Granger's (1987) cointegration approach. The results of the former test (as reported in Table III) indicate that there are at most two cointegrating equations for both imports and exports to and from Albania at the 1% and 2% level of significance, respectively.

Table 3 Johansen Test for Cointegration

Series: ln *Imports*, ln *Real_GDP*, ln *Relative_CPI*, ln *NEER*					
Exogenous series: dum97 @seas(1) @seas(2) @seas(3)					
Unrestricted Cointegration Rank Test					
Lags interval (in first differences): 1 to 4*					
Hypothesized		Trace		Max-Eigen	
No. of CE(s)	Eigenvalue	Statistic	Prob.	Statistic	Prob.
None	0.846560	130.3872	0	74.97782	0
At most 1	0.630302	55.4094	0.0018	39.80280	0.0004
At most 2	0.266288	15.6066	0.5244	12.38556	0.3801
Trace and Max-eigenvalue tests indicate 2 cointegrating equations at the 1% level					

Series: ln *Exports*, ln *ForeignGDP*, ln *Relative_Tradable_Prices*, ln *Lek/Euro*					
Exogenous series: dum97 @seas(1) @seas(2) @seas(3)					
Unrestricted Cointegration Rank Test					
Lags interval (in first differences): 1 to 1*					
Hypothesized		Trace		Max-Eigen	
No. of CE(s)	Eigenvalue	Statistic	Prob.	Statistic	Prob.
None	0.673901	93.6309	0	47.06325	0.0004
At most 1	0.522179	46.5677	0.0206	31.01777	0.0094
At most 2	0.199793	15.5499	0.5291	9.36115	0.6868
Trace test indicates 2 cointegrating equations at the 2% level					
Max-eigenvalue test indicates 2 cointegrating equations at the 1% level					
*Lag order selected by the LR criterion					

The Engle and Granger's (1987) test for cointegration is based on the stationarity of the error terms estimated in the long-run equations [Equation (1)]. The residuals obtained from each of the trade flow equations were stationary at the 1 percent level of significance, indicating that there exists a long-run relationship between merchandise imports (exports) and domestic (foreign) GDP, relative prices, and exchange rate in Albania. Also, the dynamic equations estimated in the error-correction form in the second step are in line with the theoretical expectations for all parameters. The elasticities of import and export volumes in the long- and short-run are presented in Table IV.[2]

Table 4 Elasticities of Trade Flows

Elasticities of Import Quantity Demanded (1996Q1:2005Q4)						
Real GDP		Relative CPI Prices		Effective Exchange Rate		EC
Long-run (t)	Short-run (t)	Long-run (t)	Short-run (t-2)	Long-run (t)	Short-run (t)	(t-1)
1.33 (3.65)	1.93 (2.50)	-.99 (-3.52)	-2.95 (-4.52)	-0.74 (-1.83)	-0.57 (-1.44)	-0.79 (-5.78)
Elasticities of Export Quantity Supplied (1996Q1:2005Q4)						
Real Foreign GDP		Relative Tradable Prices		Lek/Euro		EC
Long-run (t)	Short-run (t-1)	Long-run (t)	Short-run (t-2)	Long-run (t)	Short-run (t-1)	(t-1)
6.95 (7.81)	10.37 (3.08)	0.45 (1.25)	0.32 (0.48)	1.32 (2.60)	2.39* (3.77)	-0.65 (-4.04)
*A combined parameter for quarters at period t-1 [1.72 *(3.77)*] and t-3 [0.67 *(1.63)*].						
Note: Foreign GDP = GDP for Italy, Greece, Germany and Turkey; Relative prices = ratio of foreign to domestic prices; EC = error correction term; t = current quarter; t-statistics are shown in brackets.						

The elasticity estimates in the import equation show that merchandise imports are in the long run chiefly determined by domestic income (which is proxied by real GDP performance). An increase of one percent in real GDP should cause Albanian demand for foreign goods to increase by 1.3 percent, which may imply a crucial role of imports in satisfying the shortage of domestic commodities consumed or used up as inputs in production.

The relationship between import demand and relative prices appear to be unit elastic in the long run and very elastic in the short run. This could reflect the high competition that Albanian goods face domestically and how easily they could be traded off for foreign commodities in case local prices increase

(*ceteris paribus*). This is especially true in the short run, where a rise of one percent in domestic prices relative to foreign inflation could spur a flow of foreign goods by almost three percent into Albania with a time lag of only two quarters.

Movements in the effective exchange rate seem to have a measured impact on the domestic demand for foreign goods. Though not statistically significant, the inelastic parameters emphasize the indispensability of the bulk of imports in the Albanian economy and call attention to policymakers of the ineffectiveness of exchange rate policies in restraining import growth in the long as well as short run.

The final parameter of interest in the import equation is that of the error correction term, which has the expected negative sign and is significant. The magnitude of the EC indicates that nearly 80 percent of the previous period's divergence is corrected for in the current period. Hence, a relatively fast adjustment around the long-run equilibria. In short, the volume of merchandise imports in Albania are strongly related to real gross domestic production, developments in relative consumer prices, adjustments to long-term equilibria, and less to exchange rate fluctuations.

As with imports, Albanian merchandise exports are firmly determined by foreign income (economic activity), particularly Italy where about three-forth of total exports are headed for. In the long run, exports are estimated to expand by approximately 7 percent for every percent growth in foreign demand, which is comparable to the long-run export elasticity with respect to Italian income estimated by Agolli (2004). In the short run the foreign income effects could be even larger and occur within the next quarter. Although the income elasticity of export demand seems to be sizable, the magnitude of parameters are fairly persuasive, given the trivial size of Albanian exports compared to the combined demand from Italy, Greece, Germany and Turkey (which are Albania's main trading partners).

The changes in relative prices appear to have insignificant effects on the performance of export volume. In both the long and short run, domestic exports are estimated to contract by 0.3 to 0.5 percent in response to 1 percent increase in domestic tradable prices – assuming constant foreign prices. The price inelastic foreign demand suggests that currently exported goods from Albania (consisting mainly of custom-made re-exports to Italy) can still exercise some degree of cost competitiveness against international rival goods until their prices converge to a more sensitive range.

On the other hand, movements in the Lek/Euro exchange rate appear to significantly determine the domestic supply of exports. The appreciation of lek against euro by one percent for an extended time period should discourage foreign demand from Albanian exports by 1.3 percent. The estimated effects of exchange rate changes are larger in the short run, pointing to heightened sensitivity of re-exports to local currency fluctuations.

The coefficient of the error correction term in the export equation carries a negative sign and falls between 0 and 1 in absolute value as expected. The size of the error correction term shows that almost 65 percent of departures from equilibrium in the previous period are rectified in the current period. These results indicate that Albanian exports are in the long and short run determined by the performance of foreign economic activity, changes in the Lek/Euro exchange rate, and adjustments of error correction term around the long-term equilibria.

Now we can examine the Marshall-Lerner condition to evaluate whether exchange rate policies would have a positive impact in trade balance. According to the condition, for a currency devaluation to be effective, the sum of price elasticities of import and export demand (in absolute value) must be greater than 1. The corresponding price elasticities of trade flows in Albania were found 0.99 and 0.45, respectively, and their sum exceeds unity. This could prompt policymakers of the effectiveness of a lek depreciation as a means of bringing down the external trade deficit. Any inference on the magnitude of the effects, however, has to be drawn with caution inasmuch as the latter coefficient is not statistically very significant.

Finally, the reliability of the elasticities estimated in both models is assessed through a set of specification and diagnostic test. As reported in Table V, the import and export equations pass quite well the Ramsey RESET test of misspecification in the functional form. The LM test indicates no serial correlation in the import equation; however, that seems to be present in the case of exports. The error terms, anyhow, appear to be normally distributed in both equations, as shown by the Jarque-Bera test. Checking for heteroskedasticity, the Park test reveals that is present in the import equation, but not for the disturbances in the exports equation.

To correct the OLS standard errors for serial correlation (in exports) and heteroskedasticity (in imports) both equations were re-estimated using the Newey-West method. The HAC results denoted that OLS estimation might have overestimated the true standard error for the exchange rate elasticity in import equation (hence, significant at 5 percent level); the corresponding standard error, however, was modestly underestimated when measuring the export equation.

Table 5 Specification and Diagnostic Statistics for the Import and Export Equations

Diagnostic Tests	Imports	Exports
Breusch-Godfrey Serial Correlation LM Test:		
Obs*R-squared	18.7625 (0.0001)	0.8354 (0.3607)
Ramsey RESET Test:		
F-statistic (1,29)	0.8228 (0.3718)	1.0413 (0.3163)
Normality Test of the Residuals:		
Jarque-Bera	0.2674 (0.8749)	0.0865 (0.9577)
Park Test for Heteroskedasticity*:		

t-Statistic	1.4999 (0.1467)	2.6045 (0.0162)
*Based on the regression of squared residuals on squared fitted values. Note: probability values of the tests are shown in parentheses.		

Chart 1 CUSUM and CUSUM Square of Recursive Residuals

Import Equation

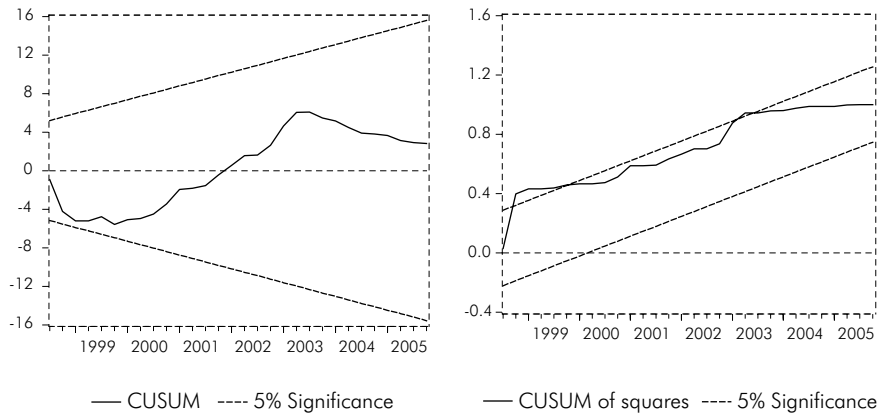
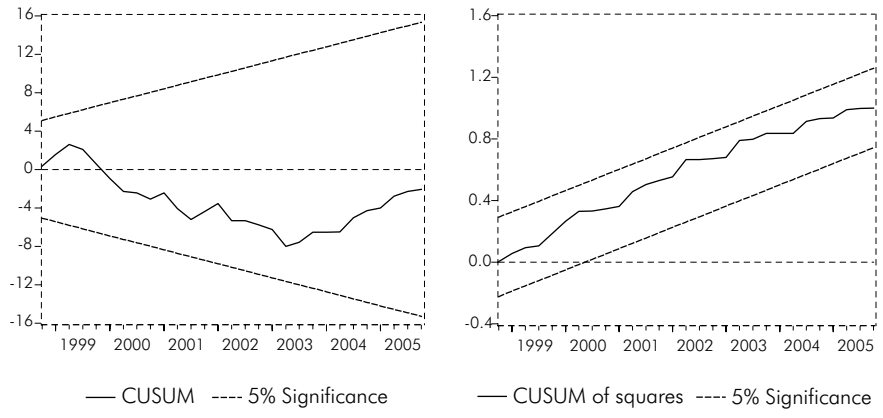


Chart 1 CUSUM and CUSUM Square of Recursive Residuals

Export Equation



Furthermore, the cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ) tests were employed to discern the stability of parameter estimates in the error correction models (Chart 1). In the import equation, although slight departures outside the 5% significance level zone are noticed using the CUSUMSQ test, it can be stated that coefficient estimates show patterns of overall stability during the sample period.

4. CONCLUDING REMARKS

This paper tries to analyze the relative responsiveness of trade flows to changes in income, relative prices and exchanges rate in Albania. The empirical findings reveal that real income (as proxied by real GDP) is the main determinant of trade flows in the long run, particularly for exports. This suggests that Albania could potentially benefit from export promotion policies. Furthermore, changes in relative prices appear to have a larger impact than exchange rate fluctuations have on the volume of merchandise imports. The opposite is true for the export supply, which seems to react greater and faster to changes in the Lek/Euro exchange rate than to relative prices.

Apart from estimating the elasticity of merchandise imports and exports for prediction purposes, the paper also sheds light upon domestic economic policies aiming at curbing the trade deficit with the rest of the world. The imposition of import tariffs is not going to produce the desired effects anymore since Albania is undertaking a series of Free Trade Agreements with the European Union and other important trading partners. For that reason, exchange rate policies will eventually be a valuable leverage together with export oriented plans to hold in check the external trade deficit. The sum of the estimated price elasticities of trade flows (in absolute value) in Albania are greater than 1, indicating that the Marshall-Lerner condition is satisfied and therefore a currency devaluation might have positive effects on the trade deficit.

REFERENCE

Agolli, Mimoza (2004), "Exchange Rate Volatility Effect on Trade Variations," Albanian Center for International Trade, Research Papers, May 2004. (http://www.acit-al.org/publications/Research_papers/may_2004_MAgolli.pdf)

Aydın, M. F. & U. Çıplak & M. E. Yücel (2004), "Export Supply and Import Demand Models for the Turkish Economy," The Central Bank of the Republic of Turkey, Research Department Working Paper No: 04/09, June 2004.

Bahmani-Oskooee, Mohsen (1986), "Determinants of International Trade Flows: The Case of Developing Countries," Journal of Development Economics 20 (1986) 107-123, North-Holland.

Bahmani-Oskooee, M. & O. Kara (2003), "Relative Responsiveness of Trade Flows to a Change in Prices and Exchange Rate," International Review of Applied Economics, Vol. 17, No. 3, July 2003.

_____ & _____ (2005), "Income and Price Elasticities of Trade: Some New Estimates," The International Trade Journal, Vol. XIX, No. 2, Summer 2005.

Bahmani-Oskooee, M. & F. Niroomand (1998), "Long-run price elasticities and the Marshall-Lerner condition revisited," Economics Letters 61 (1998) 101-109.

Coşar, Evren E. (2002), "Price and Income Elasticities of Turkish Export Demand," Central Bank of the Republic of Turkey, Central Bank Review 2 (2002) 19-53.

Engle, R. F. & C. W. J. Granger (1987), "Co-Integration and Error Correction: Representation, Estimation, and Testing," Econometrica, Vol. 55, No. 2 (March 1987), pp. 251-276.

Fullerton, T. M. & Jr. R. L. Sprinkle (2005), "An Error Correction Analysis of U.S.-Mexico Trade Flows," The International Trade Journal, Vol. 19, No. 2, Summer 2005.

Goldstein, M. & M. S. Khan (1978), "The Supply and Demand for Exports: A Simultaneous Approach," The Review of Economics and Statistics, Vol. 60, No. 2 (Apr, 1978), pp. 275-286.

Houthakker, H. S. & S. P. Magee (1969), "Income and Price Elasticities in World Trade," The Review of Economics and Statistics, Vol. 51, No. 2 (May, 1969), pp. 111-125.

Junz, H. B. & R. R. Rhomberg (1973), "Price Competitiveness in Export Trade Among Industrial Countries," The American Economic Review, Vol. 63, No. 2, Papers and Proceedings of the Eighty-fifth Annual Meeting of the American Economic Association, (May, 1973), pp 412-418.

Kreinin, Mordechai E. (1967), "Price Elasticities in International Trade," The Review of Economics and Statistics, Vol. 49, No. 4 (Nov, 1967), pp. 510-516.

Marquez, Jaime (1990), "Bilateral Trade Elasticities," The Review of Economics and Statistics, Vol. 72, No. 1 (Feb, 1990), pp. 70-77.

Orcutt, Guy H. (1950), "Measurement of Price Elasticities in International Trade," The Review of Economics and Statistics, Vol. 32, No. 2 (May, 1950), pp. 117-132.

Pesaran, M. H. & Y. Shin & R. Smith (2001), "Bounds Testing Approaches to the Analysis of Level Relationships," Journal of Applied Econometrics, 16: 289-326.

Razafimahefa, I. F. & S. Hamori (2005), "Import Demand Function: Some Evidence from Madagascar and Mauritius," Journal of African Economies, Vol. 14, No. 3, pp. 411-434.

Senhadji, Abdelhak (1998), "Time-Series Estimation of Structural Import Demand Equations: A Cross-Country Analysis," IMF Staff Papers, Vol. 45, No. 2 (June 1998).

Shtylla, D. & E. Sojli (2006), "Parashikimi i Bilancit të Pagesave," Banka e Shqipërisë, Material Diskutimi 1 (17) 06.

Warner, D. & M. Kreinin (1983), "Determinants of International Trade Flows," The Review of Economics and Statistics, Vol. 65, No. 1 (Feb, 1983), pp. 96-104.

Wilson, J. F. & W. E. Takacs (1979), "Differential Responses to Price and Exchange Rate Influences in the Foreign Trade of Selected Industrial Countries," The Review of Economics and Statistics, Vol. 61, No. 2 (May, 1979), pp. 267-279.

ENDNOTES

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The author is grateful to Altin Tanku (Research Dept., BoA), Marga Peeters (IMF Monetary Policy Advisor at BoA) and Argita Frashëri (Statistics Dept, BoA) for their invaluable comments and suggestions. The views in this paper are of the author and do not necessary reflect those of the Bank of Albania.

[1] The foreign price indices are constructed by taking the prices for Germany, Greece, Italy and Turkey, and then the series have been weighted according to each country's share in the imports (for the import equation) and exports (for the export equation) of Albania.

[2] For small sample data, as in the present case, the correctness of the results of unit root and cointegration tests remains often questionable. For that reason, Pesaran et al. (2001) propose a different approach to the cointegration analysis which allows for estimating a long-run relationship among variables irrespective of whether they are I(0) or I(1). Nevertheless, the results following the Pesaran et al.'s approach (not shown in the paper) were fairly similar to the elasticity estimates displayed in Table IV.

BANK OF ALBANIA NEWS OVER JULY-SEPTEMBER 2008

'At the Bank of Albania: Learning through work'

On 29 July 2008, the Governor of the Bank of Albania, Mr. Ardian Fullani, met with intern students who do their internship at the Bank. The meeting, which was held at the central bank's hall, was intended to be an open discussion between the Governor, interns and new employees at the Bank of Albania.

In his opening speech, Mr. Fullani considered human resources as the key to success of the central bank. In addition, the Governor noted that internship programs, which have now become a tradition at the Bank of Albania, are among others an opportunity to absorb new capacities.

Further, Mr. Fullani invited some of the new employees at the Bank and intern students to give their impression on the work, life and people at the central bank. The interns noted that the internship at the central bank provides them with the opportunity to learn about central banking and meet devoted and hard-working people.

The number of interns at the Bank of Albania has reached to 70 in the last three years, hence doubling compared to the previous years.

Training seminar for high school professors of Vlora city

On 8 September 2008, the Bank of Albania finalized the training seminar for high school professors of Vlora city for academic year 2008-2009. This seminar is part of the educational programme 'The Central Bank in Everyday Life'. While it has been held only in Tirana, it will expand to other cities in Albania as well. For academic year 2008-2009, this programme will involve the cities of Vlora and Shkodra.

The activities to be held in the context of this educational programme involve the training seminars for high school professors, meetings with high school students, distribution of educational brochures to high schools and the organization of the competition 'The Real Value of Money' between high schools in Vlora, which aims at enriching the students' knowledge on the central bank's monetary policy.

This first phase, which consists in an intensive one-week training seminar for high school professors, was closed at Vlora International Hotel with the meeting that the Governor Fullani had with high school professors and the certificate distribution ceremony to the participants. This meeting gathered about 50 high school professors, representatives of the Educational Directory of Vlora District, as well as heads and experts of the Bank of Albania.

During the training seminar, the Bank of Albania experts introduced the professors to the activity of the central bank, its objective and functions and its role and impact on the economy and on everyone's life. Professors expressed their interest in acquiring knowledge on the Bank of Albania's responsibility in achieving and maintaining price stability, safeguarding financial stability and on its impact on economy. In addition, they required other similar programmes to be held and additional literature and other publications.

Topics lectured during the training seminar:

No.	Topic	Date
1.	Education – Bank of Albania's new challenge	1 September
2.	Bank of Albania – our central bank	1 September
3.	What is monetary policy? The various regimes.	2 September
4.	Monetary policy instruments	2 September
5.	Inflation. What should we know about it?	2 September
6.	Banks and their functions and usefulness	3 September
7.	The Albanian banking system. Its supervision and transparency with the customer.	3 September
8.	Credit Registry	3 September
9.	Bank of Albania's function and responsibility in making ALL payments	4 September
10.	Currency issue – the earliest function of central banks. Safety features (lek and euro).	4 September
11.	How to minimize losses in our savings from the passing of time?	4 September
12.	Introduction to competition 'The Real Value of Money'	8 September

Regional meeting entitled: 'The banking system: Promoter of economic development'

On 12 September 2008, the Governor of the Bank of Albania, Mr. Ardian Fullani, held in Kukës town a regional meeting entitled 'The banking system: Promoter of economic development'. Participants in this meeting were the Governor of the Central Bank of the Republic of Kosovo, Mr. Hashim Rexhepi, the Mayor of Kukës and other representatives of the local government, head of the Chamber of Commerce and Industry of Tirana, Mr. Gjok Uldedaj and other representatives, Mayor of Prizren municipality, senior officials of the Albanian banking sector and officials and professors of the branch of Tirana Economic Faculty in Kukës.

This meeting is a follow-up of the similar meetings held in the cities of Korça, Gjirokastra, Shkodra and Saranda. The Bank of Albania aims not only to introduce itself as a reliable partner in the regional economic development but also to establish and consolidate communication bridges with all the players and stakeholders.

The main speech in this meeting was held by Mr. Ardian Fullani, Governor of the Bank of Albania. In his speech, Mr. Fullani dwelled on issues that relate to the latest developments in the global economy and to the economic situation in Albania, with special focus on the overall economic, financial and cultural development of the District of Kukës.

The Governor of the Central Bank of the Republic of Kosovo, Mr. Hashim Rexhepi, expressed his belief that both sides of the border will progress alongside in the path of multilateral development.

The meeting later continued with open discussions with the participants on the possible projects and the potentials this region offers. Business representatives encouraged the increase of co-operation with commercial banks, which represent a strong support for the further development of their economic activity. They noted that the expansion of the banking system in the District of Kukës has naturally triggered the increase of business value in this area.

During the regional visit in Kukës town, the Governor of the Bank of Albania, Mr. Ardian Fullani, had a meeting with the Governor of the Central Bank of the Republic of Kosovo, Mr. Hashim Rexhepi. The two governors discussed the further enhancement of the bilateral co-operation between the two institutions, more specifically, in the area of banking supervision, payment systems, human resources trainings for both central banks, etc. The intensification of co-operation in the area of public education was another key topic discussed in this meeting. The Governor of the Central Bank of the Republic of Kosovo, Mr. Hashim Rexhepi, assessed the Bank of Albania experience in this context as very useful and remarkable.

Further to his visit in Kukës town, the Governor of the Bank of Albania, Mr. Ardian Fullani, and heads and employees of the Bank of Albania organized 'Bank of Albania Day' in the branch of Tirana Economic Faculty in Kukës.

'Bank of Albania Day' is held in special days of the year and so far it has been organized in the cities of Tirana and Elbasan. This day provides students with the opportunity to listen to presentations and have open discussions and meetings with the Governor of the Bank of Albania and heads and experts of the central bank. In addition, the Bank of Albania organizes mini-fairs in the universities' halls with its publications, periodical reports, conference books, papers and educational brochures.

Open Forum with the Albanian banking system's players

On 29 September 2008, the Bank of Albania held the second Open Forum with the Albanian banking system's players, as a follow-up of the debate on the ways to further bolster the banking system's stability in Albania.

This forum intended to analyse the banking system's activity, in particular in the context of the recent developments in the global financial markets.

Providing an outline of the banking sector's financial situation, the Governor of the Bank of Albania, Mr. Ardian Fullani, said that the Albanian banking system is lucrative, well-capitalized and liquid. With respect to the extent of the impact of developments in the international financial market on the Albanian banking system, Mr. Fullani noted that no risks that may be materialized or which may harm abruptly and severely the activity of the financial system are identified. However, any negligence with regard to the serious assessment of the latest developments in these markets is inexcusable.

Although scenario-based risk analyses confirm that the banking sector has the capacity to cope with the various risks that may arise as a result of the unwelcome shifts in the exchange rates and interest rates, prudent monitoring of assets' quality is required and time is ripe to pay greater attention to the performance of liquidity indicators.

In addition, Governor Fullani highlighted the need of strengthening the control on commercial banks' activity. He required from the bank's managers to promptly make a 'cost/risk' analysis of all its activities and expand the information technology systems, at least to those areas of the activity where there is greater risk in terms of absence of accuracy in processes; place all branches and its activity in a 'net'; strengthen the human control structures in all the business processes, in particular in the treasury operations, deposit collection, credit extension and execution of transfers and payments; and document and keep track of the entire process, evidencing clearly the responsible structures and people, and regulating the process of delegation of responsibilities.

LEGAL EVENTS OVER JULY-SEPTEMBER 2008

FINANCIAL STABILITY

On 16 July 2008, the Supervisory Council of the Bank of Albania approved upon Decision No. 41 'Financial Stability Report for 2007'. The purpose of this Report is to detect and assess the risks the financial system and its infrastructure are faced with, and in order to provide the public authorities with the opportunity to identify the relevant measures for the necessary corrections. The analysis of the characteristics of risks in the Albanian financial activity attests to an increased general level of risk during the year 2007. The same tendency is expected to be maintained during the present year as well. Although the Albanian financial system is by and large protected from risks arising from internal risks and regional and global ones, the Report recommends to the regulatory authorities of the financial market, the financial institutions and the public to enhance their supervisory prudence.

PAYMENT SYSTEMS

On 16 July 2008, the Supervisory Council of the Bank of Albania approved upon Decision No. 42, the Regulation 'On the structure and use of the International Bank Account Number (IBAN)'. The purpose of this Regulation is to set out the structure of the International Bank Account Number - IBAN, the relationships between the bank and/or branch of foreign banks and their customers relevant to the generation, capture, recognition and use of IBAN in the Republic of Albania as well as the procedures for the validation of the latter. IBAN is the international bank account number and it is set out in compliance with the International Standard ISO and amended with Standard ECBS EBS 204, which is used internationally to identify the account of a customer at a bank.

MONETARY OPERATIONS

On 16 July 2008, the Supervisory Council of the Bank of Albania approved upon Decision No. 43, the Regulation 'On the minimum required reserve held with the Bank of Albania by commercial banks'. The purpose of this Regulation is to set out the rules for calculating, reporting, holding, using and remunerating the required reserve held with the Bank of Albania. Required reserve is a monetary policy instrument employed by the Bank of Albania, which aims at regulating the banking system's liquidity and stabilizing the interest rates in the money market.

On 16 July 2008, the Supervisory Council of the Bank of Albania approved the Decision No. 44 'On approving the use of required reserve in lek by banks'. Pursuant to this Decision, the Supervisory Council of the Bank of Albania decides to allow banks and branches of foreign banks to use on daily basis up to 20 (twenty) percent of the required reserve held in lek.

On 16 July 2008, the Supervisory Council of the Bank of Albania approved the Decision No. 45 'On approving the required reserve rate held with the Bank of Albania by commercial banks'. This Decision stipulates that the required reserve rate held with the Bank of Albania by commercial banks and branches of foreign banks must be 10 (ten) percent for the liabilities included in the required reserve basis, to which the 0 (zero) percent rate of the required reserve is not applied.

On 16 July 2008, the Supervisory Council of the Bank of Albania approved the Decision No. 46 'On approving the interest rate for the remuneration of the required reserve'. Pursuant to this Decision, the interest rate on the required reserve held in lek is 70 (seventy) percent of the repurchase and reverse repurchase agreement interest rate approved by the Supervisory Council of the Bank of Albania in the last day of the base period; the interest rate on the required reserve held in U.S. dollar is 70 (seventy) percent of the Federal Reserve key interest rate in the last day of the base period; and the interest rate on the required reserve held in EUR is 70 (seventy) percent of the ECB's key interest rate in the last day of the base period.

BANKING SUPERVISION

On 30 July 2008, the Supervisory Council of the Bank of Albania approved the Decision No. 54 'On approving the acquisition of 12.5 percent of shareholders capital of Union Bank by the European Bank for Reconstruction and Development'. With this Decision, the Supervisory Council of the Bank of Albania approves the request of the European Bank of Reconstruction and Development (EBRD) for the acquisition of 12.5 percent of shareholders capital of Union Bank, which will issue new shares for this purpose. In the Albanian banking system, EBRD holds also shares in National Commercial Bank and American Bank of Albania.

On 29 August 2008, the Supervisory Council of the Bank of Albania approved upon Decision No. 59 the Regulation 'On the transparency of banking and financial products and services'. This Regulation sets out requirements on the way and mode on providing information to customers on banking and financial products and services, on the publication of effective interest rates on deposits and loans, on the method of calculating the effective interest rate on loans, on the constituent elements to be specified in loan and deposit contract, on the marketing of products and services, on dealing with the customer's complaints and on their identification, etc.

On 29 August 2008, the Supervisory Council of the Bank of Albania approved upon Decision No. 60 the Regulation 'On minimum requirements for disclosing information from banks and branches of foreign banks'. This Regulation sets out minimum requirements on the ways and timeliness related to the information to be disclosed in the periodical reports of banks and branches of foreign banks, in view of enhancing transparency and promoting discipline across the banking market, as well as ensuring the banking system's sustainability and credibility.

On 29 August 2008, the Supervisory Council of the Bank of Albania approved upon Decision No. 61, some amendments to the Regulation 'On credit risk management'. These amendments mainly envisage the administrative and prudence-related measures for monitoring the risk arising from lending in foreign currency or indexed to foreign currency, which mainly occurs when borrowers have their income in ALL.

On 29 August 2008, the Supervisory Council of the Bank of Albania approved upon Decision No. 62, some amendments to the Regulation 'On risk management in the activity of branches of foreign banks'. The purpose of these amendments is to set more limited market shares for branches of foreign banks, in at least one of the following indicators in two consecutive quarters, from four quarters that the previous regulation envisaged: 6.25 percent of total banking system's assets; or 6.25 percent of total banking system's deposits.

On 29 August 2008, the Supervisory Council of the Bank of Albania approved upon Decision No. 63, some amendments to the Regulation 'On capital adequacy ratio'. The amendments to this Regulation are a consequence and reflection of rules set on credit risk management, which need to be considered during the calculation of capital adequacy ratio given that they affect their components – risk-weighted assets and bank's regulatory capital.

INFORMATION TECHNOLOGY

On 29 August 2008, the Supervisory Council of the Bank of Albania approved upon Decision No. 64 the Regulation 'On the functioning of the SWIFT system at the Bank of Albania'. The purpose of this Regulation is to establish the role and responsibilities of the Bank of Albania in relation to the SWIFT system, and the rules and procedures on the management, operation, monitoring and control of this system by the Bank of Albania. The SWIFT system is an information technology and communication system at the Bank of Albania, which allows the interbank financial communication of the Bank of Albania with financial and banking institutions.

ECONOMIC POLICY

On 2 July 2008, the Council of Ministers approved the Decision No. 995 'On the minimum wage in Albania'. According to this Decision, the minimum

base wage for Albanian employees, obligatory to be applied by all natural and legal persons, native or foreign, has been increased to 17 000 lek per month. Minimum base wage per hour has been increased to 98 lek.

On 17 July 2008, the Parliament of the Republic of Albania ratified upon Decision No. 9954 'The financing agreement between the Republic of Albania and the International Development Association (IDA) for the project on the secondary and national roadways'. The purpose of this project is to upgrade the access to main services and economic markets, through the improvement of priority sessions of the secondary (regional) and local road network throughout the territory of Albania and the strengthening of this road network management. For the purpose of this project, IDA extends to Albania a loan of SDR 12 200 000.

On 24 July 2008, the Parliament of the Republic of Albania ratified upon Law No. 9964 'The loan agreement between the Council of Ministers of the Republic of Albania and the Japan Bank for International Cooperation for the financing of the project 'Upgrade of the canalization system in Tirana e Madhe''. The purpose of this project is to improve the quality of groundwater and local rivers' waters, through the development of sewage water and canalization infrastructure in Tirana e Madhe, hence contributing to the improvement of public hygiene in this area. For the purpose of this project, Japan Bank for International Cooperation extends to the Government of the Republic of Albania a loan of ¥ 11 121 000 000.

On 24 July 2008, the Parliament of the Republic of Albania ratified upon Law No. 9965 'The financing agreement between the Republic of Albania and the International Development Association (IDA) for the project 'Safety of dams''. The purpose of this project is to contribute to the safety of the largest hydro-electrical dams on Drin and Mat river cascades, enhance the operational efficiency of these hydro-electric dams and improve the stable supply with energy to the regional market. For the purpose of this project, IDA extends to Albania a loan of SDR 21 700 000.

On 24 July 2008, the Parliament of the Republic of Albania approved the Law No. 9966 'On some amendments and changes to the Law No. 9396, dated 12 May 2005 'On financial leasing', amended'. These changes consist in the supervision of financial leasing to be carried out by the Bank of Albania pursuant to the Law 'On banks in the Republic of Albania' and other by-laws.

On 28 July 2008, the Parliament of the Republic of Albania approved the Law No. 9974 'On the title repurchase contract'. The purpose of this Law is to establish the necessary legal framework for the binding and application of repurchase and reverse repurchase agreements of titles, in the form of title repurchase contract, in which at least one party is licensed to conduct banking activity or non-bank financial activity, hence enhancing the efficiency and long-term stability of financial markets development in the Republic of Albania.

On 28 July 2008, the Parliament of the Republic of Albania approved the Law No. 9975 'On national taxes'. The purpose of this Law is to establish the types of national taxes applicable in the Republic of Albania, the level of national taxes, the calculation and collection procedures, the transfer to the State Budget or to the budget of local government units, as well as the responsibilities of national tax agents. In addition, this Law groups the national taxes in 7 types and passes a number of other taxes to the local government.

On 20 August 2008, the Council of Ministers approved the Instruction No. 1 'On approving the average cost of residential buildings built by the National Housing Agency for 2008". This Instruction determines the average construction cost of residential buildings built by the National Housing Agency at a national level for 2008, which is 33 464 lek/m^2.

On 2 September 2008, the Ministry of Finance approved upon Decision No. 24 the Instruction 'On tax procedures in the Republic of Albania'. Pursuant to the Law No. 9920, dated 19 May 2008 'On tax procedures in the Republic of Albania', the purpose of this Instruction is to set out the rules and procedures for the management of tax obligations and the organization and functioning principles of tax administration in the Republic of Albania. This Instruction aims to unify and establish contemporary standards to guarantee fair competition, equal and unbiased treatment and transparency in the proper and uniform implementation of procedures and rules.

On 4 September 2008, the Ministry of Finance approved the Instruction No. 26 'On national taxes'. Pursuant to Law No. 9975, dated 28 July 2008, this Instruction determines that the national taxes be paid to the state budget and that the annual taxes be collected by the tax agents and paid to the State Budget within the 30th day of the month in which taxes have been collected.

On 8 September 2008, the Parliament of the Republic of Albania approved the Law No. 9981 'On approving the customs duties levels'. This Law approves the customs duties levels according to the breakdown of combined nomenclature of goods in 2008, which determines the tariffs of goods according to the positions and rules of the nomenclature for 2008.

On 8 September 2008, the Parliament of the Republic of Albania ratified upon Law No. 9979 'The financial cooperation agreement between the Council of Ministers of the Republic of Albania, represented by the Ministry of Finance, and the Government of the Austrian Republic, represented by the Federal Ministry of Finance'. Through this agreement, the governments of these two countries commit to foster and enhance financial cooperation between them, in accordance with their respective legal, regulatory and political framework and with their international obligations.

On 11 September 2008, the Parliament of the Republic of Albania ratified upon Law No. 9984 'The Memorandum of Understanding between the Republic of Albania and the European Community, formalizing the Republic of Albania's entry to the EIP, the entrepreneurship and innovation pillar of the

Competitiveness and Innovation Framework Program (EIP), which runs from 2007 to 2013'. EIP fosters the competitiveness of enterprises for example by providing co-guarantees and co-investments for local banks and risk capital funds so that they can improve access for SMEs to loan and venture capital finance. EIP also supports providers of business and innovation services in all EU regions or helps to link innovation actors and clusters in European networks.

BANK OF ALBANIA MANAGEMENT, 30 SEPTEMBER 2008

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ARDIAN FULLANI	*Chairman*
FATOS IBRAHIMI	*Vice Chairman*
TEFTA ÇUÇI	*Member*
LIMOS MALAJ	*Member*
KSENOFON KRISAFI	*Member*
ADRIAN CIVICI	*Member*
ARJAN KADAREJA	*Member*
HALIT XHAFA	*Member*
BENET BECI	*Member*

GOVERNOR

ARDIAN FULLANI

GOVERNOR'S OFFICE

GENC MAMANI

DEPUTY GOVERNORS

FATOS IBRAHIMI	*First Deputy Governor*

GENERAL INSPECTOR

TEUTA BALETA

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MONETARY POLICY DEPARTMENT	*Gramoz Kolasi*
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ELBASANI	*Valentina Dedja*
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LUSHNJA	*Shpresa Meço*

** Appointed on 2 September 2008.*
*** Appointed on 18 September 2008.*
**** The Printing House of the Bank of Albania closed on 30 September 2008.*

LIST OF ALL ENTITIES LICENSED BY THE BANK OF ALBANIA*

BANKS AND BRANCHES OF FOREIGN BANKS

1. RAIFFEISEN BANK (JOINT-STOCK COMPANY)
Licence No. 2/1998, dated 11.01.1999
Approved by the Supervisory Council Decision of the Bank of Albania No. 163, dated 11.12.1998.
Certificate No. 2 "On Deposit Insurance".
Director: Oliver WHITTLE
Address: Bulevardi "Bajram Curri", European Trade Center, Tirana, Albania
Tel.: 222 66 99, 222 45 40, 222 26 69, 222 54 16
Fax.: 227 55 99, 222 35 87, 222 36 95, 222 40 51

2. UNITED BANK OF ALBANIA (JOINT-STOCK COMPANY)
Licence No. 3/1998, dated 11.01.1999
Approved by the Supervisory Council Decision of the Bank of Albania No. 165, dated 11.12.1998.
Certificate No. 3 "On Deposit Insurance".
Director: Abdul Waheed ALAVI
Address: Bulevardi "Dëshmorët e Kombit", Nr. 8, Tirana, Albania
Tel.: 222 84 60, 222 38 73, 222 74 08
Fax: 222 84 60, 222 83 87

3. ITALIAN BANK OF DEVELOPMENT (BANCA ITALIANA DI SVILUPPO)
Licence No. 5/1998, dated 11.01.1999
Approved by the Supervisory Council Decision of the Bank of Albania No.164, dated 11.12.1998. Certificate No.4 "On Deposit Insurance".
Director: Libero CATALANO
Address: Bulevardi "Dëshmorët e Kombit", Ndërtesa Kullat Binjake, Tirana
Tel.: 228 03 51 / 2 / 3 / 4 / 5
Fax: 228 03 56

4. NATIONAL COMMERCIAL BANK (JOINT-STOCK COMPANY)
Licence No. 6/1998, dated 11.01.1999
Approved by the Supervisory Council Decision of the Bank of Albania No. 162, dated 11.01.1999.
Certificate No. 5 "On Deposit Insurance".
Director: Seyhan PENCAPLIGIL
Address: Bulevardi "Zhan D'Ark", Tirana, Albania
Tel.: 225 09 55
Fax.: 225 09 56

5. TIRANA BANK (JOINT-STOCK COMPANY)
Licence No. 07, dated 12.09.1996
Approved by the Supervisory Council Decision of the Bank of Albania No. 9, dated 12.09.1996.
Certificate No. 6 "On Deposit Insurance".
Director: Bedri ÇOLLAKU
Address: Rruga "Dëshmorët e 4 Shkurtit", Tirana, Albania
Tel.: 226 96 16/7/8; 223 34 41/42/43/44/45/46/47
Fax.: 223 34 17

** As of September 30, 2008.*

6. NATIONAL BANK OF GREECE (JOINT-STOCK COMPANY) – TIRANA BRANCH
Licence No. 08, dated 25.11.1996
Approved by the Supervisory Council Decision of the Bank of Albania No. 4, dated 14.03.1996.
Certificate No. 7 "On Deposit Insurance".
Director: Ioannis LEIVADITIS
Address: Rruga "Durrësit", Godina Comfort, Tirana, Albania
Tel.: 227 48 02; 227 48 22
Fax.: 223 36 13

7. INTERNATIONAL COMMERCIAL BANK (JOINT-STOCK COMPANY)
Licence No.09, dated 20.02.1997
Approved by the Supervisory Council Decision of the Bank of Albania No. 9, dated 30.04.1996.
Certificate No. 8 "On Deposit Insurance".
Director: Mahendra Sing RAWAT
Address: Qendra e Biznesit, Rruga "Murat Toptani", Tirana, Albania
Tel.: 225 43 72 / 225 62 54
Fax.: 225 43 68

8. ALPHA BANK (JOINT-STOCK COMPANY) – ALBANIA
Licence No.10, dated 07.01.1998
Approved by the Supervisory Council Decision of the Bank of Albania No. 01/03/96, dated 27.12.1997.
Certificate No. 9 "On Deposit Insurance".
Director: Andreas GALATOULAS
Address: Bulevardi "Zogu I", Nr.47, Tirana, Albania
Tel.: 223 35 32; 223 33 59; 234 04 76/77
Fax.: 223 21 02

9. AMERICAN BANK OF ALBANIA (JOINT-STOCK COMPANY)
Licence No.11, dated 10.08.1998
Approved by the Supervisory Council Decision of the Bank of Albania No. 105, dated 10.08.1998.
Certificate No. 10 "On Deposit Insurance".
Director: Lorenzo RONCARI
Address: Rruga "Ismail Qemali", Nr. 27, P.O. Box 8319, Tirana, Albania
Tel.: 224 87 53/4/5/6
Fax.: 224 87 62

10. PROCREDIT BANK (JOINT-STOCK COMPANY)
Licence No. 12, dated 15.03.1999
Approved by the Supervisory Council Decision of the Bank of Albania No. 22, dated 03.03.1999.
Certificate No. 11 "On Deposit Insurance".
Deputy Director: Anila DENAJ
Address: Rruga "Sami Frashëri", Tirana e Re, P.O. Box. 2395, Tirana, Albania
Tel.: 227 12 72/3/4/5
Fax.: 227 12 76

11. EMPORIKI BANK OF ALBANIA (JOINT-STOCK COMPANY)
Licence No. 14, dated 28.10.1999
Approved by the Supervisory Council Decision of the Bank of Albania No.105, dated 19.10.1999.
Certificate No. 13 "On Deposit Insurance".
Director: George CARACOSTAS
Address: Rruga "Kavajës", Tirana Tower, Tirana, Albania
Tel.: 225 87 55/ 56/ 57/ 58/ 59/ 60
Fax.: 225 87 52

12. CREDIT BANK OF ALBANIA (JOINT-STOCK COMPANY)
Licence No. 15, dated 28.08.2002
Approved by the Supervisory Council Decision of the Bank of Albania No. 66, dated 28.08.2002.
Certificate No. 14 "On Deposit Insurance".
Director: Kamal Abdel MONEIM
Address: Rruga "Perlat Rexhepi", Al-Kharafi Group Administration Building, Kati 1&2" Tirana, Albania
Tel.: 227 21 68, 227 21 62
Fax.: 227 21 62

13. CREDINS BANK (JOINT-STOCK COMPANY)
Licence No. 16, dated 31.03.2003
Approved by the Supervisory Council Decision of the Bank of Albania No. 22, dated 26.03.2003.
Certificate No.15 "On Deposit Insurance".
Director: Artan SANTO
Address: Rruga "Ismail Qemali", Nr. 21, Tirana, Albania
Tel.: 222 29 16, 223 40 96
Fax.: 222 29 16

14. POPULAR BANK (JOINT-STOCK COMPANY)
Licence No. 17, dated 16.02.2004
Approved by the Supervisory Council Decision of the Bank of Albania No. 06, dated 11.02.2004.
Certificate No.16 "On Deposit Insurance".
Director: Henri Maus de ROLLEY
Address: Bulevardi "Dëshmorët e Kombit", Ndërtesa Kullat Binjake, Kulla 1, Kati 9, Tirana, Albania
Tel.: 227 27 88 / 89 / 90 / 91
Fax.: 227 27 81; 228 04 41

15. UNION BANK (JOINT-STOCK COMPANY)
Licence No. 18, dated 09.01.2006
Approved by the Supervisory Council Decision of the Bank of Albania No. 101, dated 28.12.2005.
Certificate No.17 "On Deposit Insurance".
Director: Gazmend KADRIU
Address: Bulevardi "Zogu I", Pallati 13-katësh, përballë Stacionit të Trenit, Tirana, Albania
Tel: 225 06 53; 225 80 81
Fax.: 225 06 54; 227 28 80

16. FIRST INVESTMENT BANK (JOINT-STOCK COMPANY)
Licence No. 13, dated 16.04.1999
Approved by the Supervisory Council Decision of the Bank of Albania No. 35, dated 27.06.2007.
Certificate No. 12 "On Deposit Insurance", dated 18.07.2007.
Director: Bozhidar TODOROV
Address: Bulevardi "Dëshmorët e Kombit", Kullat Binjake, Kulla 2, Kati 14, Tirana, Albania
Tel.: 225 64 23/4; 228 02 10
Fax.: 225 64 22

*In addition to banks and branches of foreign banks, the Bank of Albania has as of 30 September 2008 licensed the following entities**:*

NO.	ENTITIES
6	NON-BANK INSTITUTIONS
171	FOREIGN EXCHANGE BUREAUS
2	UNIONS OF SAVINGS AND CREDIT ASSOCIATIONS
133	SAVINGS AND CREDIT ASSOCIATIONS
1	REPRESENTATIVE OFFICES OF FOREIGN BANKS

*** The full list of these entities may be found in section "Banking Supervision" of the official website of the Bank of Albania www.bankofalbania.org*