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**The Monetary Policy Program
of the Republic of Armenia**

Quarter 1, 2011

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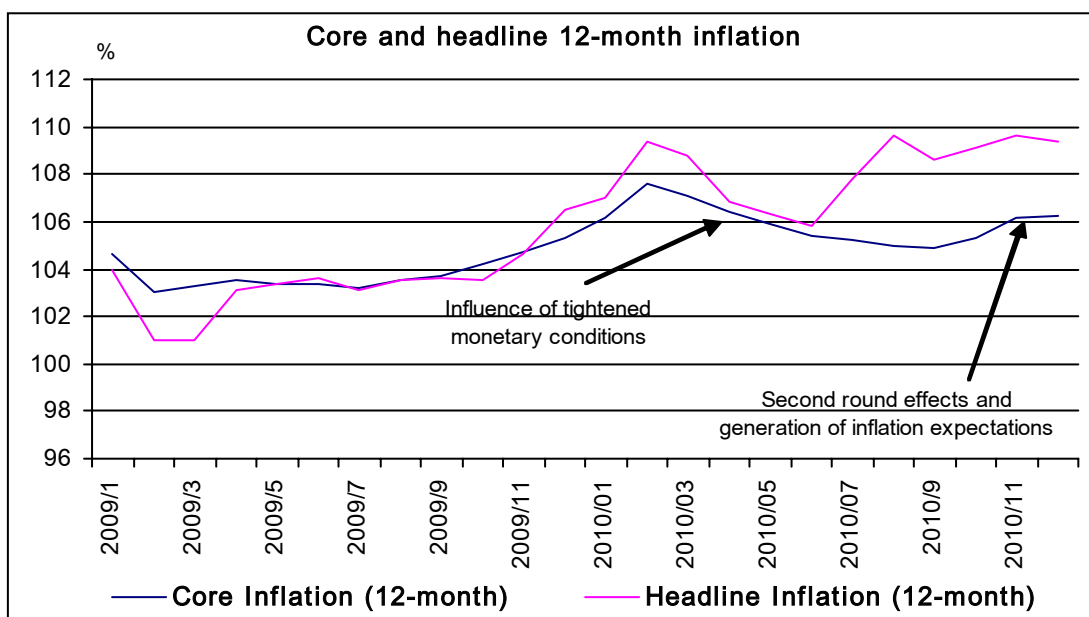
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Q4 2010 ACTUAL INDICATORS AND DEVELOPMENTS

In the beginning of 2011 the macroeconomic situation was characterized by high inflationary environment as influence of expansionary **fiscal and monetary policies implemented in 2009** began to appear at the yearend 2009, and it was expected that in the first quarter of 2010 it would reach its peak. The other factor contributing to the inflationary environment **were increased international prices of food and primary goods** since the second half of 2009 amid economic recovery. The impact of price increases on the Armenian economy was expected primarily in the first quarter of 2010. The next factor was an increase of **gas and water tariffs since April 1 2010**, which affected inflation both directly (through such tariffs increase) and indirectly (through cost increases on other goods). In a situation like this, the Central Bank implemented a tightened monetary policy since January 2010, keeping on raising the refinancing rate in the first five months (a total of 2.5 pp), while taking on action to reduce dollarization.

The 12-month inflation of 9.4 percent recorded in February kept on declining and reached the upper border of the target in June, making up 5.8 percent. The situation, however, changed drastically, making more room for prices to inflate dramatically. Core inflation¹, nevertheless, continued to fall, reflecting the tightened monetary conditions at the start of the year.

The first factor, which sent new inflationary impulses to the economy, was a **sharp increase in international wheat price, followed by price increases on other food products**. The next major factor was a **deep decline in agriculture** which was demonstrated by an abrupt decrease in supply of agricultural products. It was obvious that inflationary environment was solely due to supply factors, which are not subject to the monetary regulation. In this situation, despite the acceleration of inflation, the Central Bank avoided to raise the refinancing rate because all assessments were showing that the slow pace of domestic demand recovery would not create inflationary pressures. In other words, high inflation was not due to demand factors subject to an influence of monetary policy. So, starting from June 2010, the Central Bank has left the key rate unchanged.



¹ The core inflation calculation methodology developed by the Central Bank is detailed in the CBA Review (Q1, 2008). The paper regularly publishes core inflation indicators.

Inflation during 2010 was 9.4 percent, 7.5 pp of which alone was due to growth in food prices: the growth of domestic prices of agricultural goods contributed around 5 pp to inflation and imported food, more than 2 pp. The contribution of food prices to headline inflation has increased in the fourth quarter. During the quarter inflation was 4.5 percent; food prices rose by 8.1 percent (with 4.4 pp contribution to headline inflation), non-food prices, by 1.5 percent (contribution, 0.2 pp), whereas service tariffs dropped by 0.2 percent (contribution, 0.05 pp). Average inflation recorded in the period January-December was 8.2 percent in relation to last year's average.

Some intensification of the secondary effects and inflationary expectations from continued supply side driven inflation has been observed in the period November-December, which were reflected also in the core inflation indicator. During the quarter core inflation was 3.0 percent while the 12-month inflation reached 6.26 percent at the end of the year.

External environment

According to revised IMF estimates, in 2010 the global output growth (by purchasing power parity) will be 5.0 percent against 0.6 percent decline recorded in the previous year². Over 2010 inflation accelerated in both developed and emerging countries; it was particularly intensive during the fourth quarter. The 2010 estimates show that inflation was 1.5 percent in developed countries and 6.5 percent in emerging countries (previous year's inflation indicators were 0.1 percent and 5.2 percent, respectively). In addition, inflation in the CIS countries was an average 10.0 percent³ (see Appendix).

In the fourth quarter of 2010, international markets of primary goods recorded substantial price fluctuations due to expectations for possible restrictive policy implementation in the face of inflation in China, the QE 2 exercise of the Federal Reserve System and mounted tension over debt issues in Euro-area. Despite certain volatilities in commodity markets, considerable inflationary pressures persisted there. In particular, at the end of the quarter international prices of almost all primary goods showed their last two-year highs.

In the fourth quarter, oil prices reported 13.6 percent growth q-o-q, with an average quarterly price of Brent crude amounted to USD 86.8 a barrel (y-o-y growth - 15.8 percent). It should be noted that at the end of the quarter international oil price exceeded the USD 90 threshold for the third time during the year, resting at its last 26-month peak, determined by rapid growth in global demand due to cold winter, as well as U.S. crude oil supply reduction.

The fourth quarter posted price increases in base metals and precious metals markets. At the London Metal Exchange, the copper price rose by 18.4 percent q-o-q to make up an average USD 8617 per ton (y-o-y growth - 29.5 percent). Also, attributable to the global demand outpacing the supply, the tension in the market at the end-quarter drove the copper price to exceed the USD 9000 limit. International molybdenum prices recorded around 3.1 percent growth on average, exceeding the previous year average indicator by around 42.6 percent. International gold prices this quarter also posted continued growth as average quarterly gold price grew by 11.6 percent in relation to the previous quarter, making up USD 1370 per Troy oz (y-o-y growth - 24.3 percent).

International grain prices, too, kept on increasing during the fourth quarter, recording new peaks. As reported by the Chicago Commodity Exchange, average quarterly price of grain was USD 7.7 a bushel, which is an 18.5 percent increase in

² IMF, "World Economic Outlook: Update", January 25 2011.

³ This indicator excludes Turkmenistan and Uzbekistan, the data of which are not available yet. The indicator was calculated as an arithmetic mean.

relation to the previous quarter's average, and a 38.2 percent increase compared with the same quarter of the previous year. With the tension persisting in the market, at the end of the quarter international grain prices topped the USD 8.5 a bushel level. International prices of rice in the fourth quarter rose by 26.6 percent q-o-q to USD 14.1 US hundredweight (45.3 kg), which is lower from the previous year's indicator by around 4.9 percent, largely due to steep inflation recorded in the end 2009.

According to the New York Board of Trade release of international sugar prices index, in the fourth quarter of 2010 the sugar price has grown by 34.2 percent q-o-q, resulting in average quarterly sugar price of US cents 35.6 a pound (y-o-y growth - 50.4 percent). The inflationary environment persisting in international sugar market is due to an unprecedented demand that faces difficulty in satisfying the current production volumes.

In the fourth quarter the Euro-area again faced escalated debt problems. Though other EU countries in cooperation with the IMF made an initiative to provide a support package to Ireland in order to prevent further spread of the problems, the EURUSD depreciated considerably at end-quarter amid concerns over further escalation of problems in other vulnerable countries in the Euro-area. Attributable to high level of exchange rate persisted in October-November, the Euro exchange rate versus the US dollar appreciated by 5.2 percent q-o-q to reach USD 1.36 for one Euro (Euro's depreciation - 8.0 percent y-o-y).

In the fourth quarter the US Federal Reserve System and the European Central Bank kept monetary policy rates low. At the same time, in view of a slow pace of recovery of the US economy and employment as well as concerns over economic development outlooks, in November the Fed announced a new QE exercise (as much as USD 600 billion in volume). This made a three-month LIBOR to fall during the quarter to 0.29 percent.

As a result, demand in China, India and a number of emerging economies, on the one hand, and expansionary policies implemented by developed countries, on the other, contributed to the intensification of inflationary pressures in international commodity markets, which gradually spills over to domestic commodity markets.

Aggregate supply⁴

As it was expected, economic growth in January-December reached 2.6 percent y-o-y⁵.

In **Industry** the value added has increased by 9.5 percent primarily due to the increased volumes in *metal ore mining* (24.7 percent), *food production* (9.7 percent), *beverage production* (31.6 percent), *building materials production* (12 percent), *metallurgy* (6.4 percent) and *jewelry manufacturing* (15.1 percent), which is a result of consistent improvement in external demand as domestic and world economies recover.

Despite about 10.3 percent decline in the generation of *electricity* and *natural gas*, the production of electricity, when expressed in kind, has increased by about 14.5 percent y-o-y, reflecting noticeable growth in export volumes of electricity.

In **Construction** the value added has grown by 3.7 percent. The growth in construction volumes financed by *local budgets* (4-fold), *humanitarian aid* (3.4-fold) and *organizations* (35.3 percent) was concurrent with reduction in volumes financed by *international loans* (-43.1 percent), *households* (-38.5 percent) and *state budget* (-1.7percent).

⁴ The indicators of branches and sub-branches of the economy represent a period spanning January-December of this year relative to January-December of the previous year.

⁵ See the Monetary Policy Program, Q4, 2010.

There has been marked growth in construction volumes in *agriculture, processing industry, transport, water supply, public administration and defense*.

In **Services** the value added has increased by 4.6 percent primarily due to 12 percent increase in *wholesale trade turnover* and 0.6 percent increase in *retail trade turnover*. The volume of services delivered has increased by 3.8 percent. As such, growth was reported in regard to all spheres of provision of service. Even more so, *financial* and *insurance* services reported the largest growth, 3 percent, followed by *transport* services, 1.7 percent, and *information and communication* services, 1.1 percent.

In **Agriculture** the decline in value added has been 13.4 percent y-o-y, almost entirely due to declines in *plant growing* (-20.3 percent). The decline was attributable to the spoilage of crops because of reduced sowing areas and unfavorable weather conditions.

Labor Market⁶

According to the Central Bank estimates, in the fourth quarter of 2010 the growth of average nominal wages was 7.2 percent, with an average nominal wage increase reaching 6.8 percent in 2010. The average nominal wage increase recorded in the fourth quarter reflected an increase in wages in private sector and some budget-supported organizations, fuelled by bouncing economic activity. In the fourth quarter, average nominal wages in the private sector grew primarily due to the growth of wages in *industry* and *service*.

In the time of recovering economy, demand for labor continued increasing, thus pushing the average quarterly unemployment rate downward by 0.2 pp to 6.8 percent, and to 7 percent, based on yearly results. In the fourth quarter, concomitant with economic growth, labor productivity grew to make up 2 percent.

As a result of these developments, unit labor costs have increased by around 5 percent, creating slight inflationary pressures in the economy, which are estimated to be 0.3 percent.

Aggregate Demand⁷

According to Central Bank estimates, in the fourth quarter of 2010 private spending has increased by around 2 percent. It should be noted that growth rates of private spending weakened as economic growth rates slowed down. The growth of private spending has been offset by reduced public expenditures, and domestic demand has not changed considerably in relation to the same period of the previous year, as a result. Annual growth of private spending in 2010 was 3.7 percent which led to about 3 percent increase in domestic demand amid 2.7 percent reduction in public expenditures⁸.

In the fourth quarter private consumption has increased by around 3 percent in real terms as a result of slight rise in household incomes and recovering consumer confidence.

There have been more purchases of machinery and equipment by companies as well as further construction activity thanks to increased lending to the economy and company resources. In the fourth quarter, however, the volumes of private

⁶ The labor market data for 2010 are the Central Bank estimates which are based on actual figures of the third quarter of 2010 and October and November 2010 figures, as published by the National Statistics Service of Armenia. The growth indicators represented in this sub-section are relative to the same quarter of the previous year, unless otherwise specified.

⁷ The data on real growth of private sector consumption and investments for 2010 are the Central Bank estimates. Actual figures of these indicators are as of the third quarter of 2010, as published by the National Statistics Service of Armenia. The growth indicators represented in this sub-section are relative to the same quarter of the previous year, unless otherwise specified.

⁸ Reduction in public expenditures in 2010 was recorded as the public expenditures deflator was rather high.

investment have not changed much, compared with the previous year, as the construction branch is recovering slowly⁹.

Composite economic indexes computed and published by the Central Bank also point to the aforementioned developments¹⁰. In the fourth quarter of 2010 *consumer confidence index* rose by 8 percent, *current conditions index*, by 6.8 percent and *future conditions index*, by 8.7 percent. *Economic activity index* and *business activity index* have increased by 14.5 percent and 7.7 percent, respectively.

Though private spending has increased over the fourth quarter, it still had a restrictive impact on inflation. According to the Central Bank, the estimated level of real private spending has been below its potential by 0-1 percent. This created deflationary pressures in consumer market, pushing inflation down by 0.2-0.4 pp.

In the fourth quarter of 2010 current account further tended to improve y-o-y amidst developments in world and domestic economies. Over the quarter growth rates of international prices of base metals accelerated, exceeding expectations. As a result, in the fourth quarter the growth of export of goods and services in dollar terms amounted to 31.2 percent¹¹ y-o-y while the growth of volumes in real terms reached 9.1 percent y-o-y. Based on annual results of 2010, the growth of export of goods and services in dollar terms and real terms reached 35.4 percent and 12.1 percent, respectively.

In the fourth quarter the growth of import of goods and services in dollar terms was as low as 2.6 percent y-o-y¹², primarily attributable to a large amount of machinery and equipment imported in the same period of the previous year. The reduction of import of goods and services in real terms in the fourth quarter was considerable – 7.0 percent y-o-y. This is explained by accelerated growth rates of import prices in light of budget constraints among economic agents. Based on annual results of 2010, the import of goods and services in dollar terms and real terms has grown by 14.3 percent and 4.3 percent, respectively.

High y-o-y growth rates of inflow of non-commercial remittances persisted over the fourth quarter, too. The inflow of such transfers has increased by 20.7 percent y-o-y in the face of 7.7 percent y-o-y increase of outflow. So, net inflow of non-commercial remittances has grown by 23.5 percent y-o-y in the fourth quarter and 15.4 percent over 2010.

As a result of the aforementioned developments, the current account has improved over 2010 and is estimated to reach about 14.0 percent of GDP, against 16.2 percent in the previous year.

Consolidated budget¹³

In the fourth quarter of 2010 the fiscal policy's impact on aggregate demand has been a little bit more expansionary than forecast, making up 4.6 pp. This was attributable to the expansionary impulses of both revenues and expenditures.

Overall in 2010, the fiscal policy of the government can be characterized as efforts spent to reduce deficit in GDP, which was shown up in the form of over-performed revenues and some savings on expenditures. The fiscal policy's impact on aggregate demand has been 3.5 pp expansionary, reflecting a slightly restrictive nature of revenues impulse and an expansionary nature of expenditures impulse. As

⁹ Gross output in construction has reduced in the fourth quarter yet the branch reported an increase in value added.

¹⁰ See http://www.cba.am/CBA_SITE/statistics/complex_index.html?_locale=hy.

¹¹ In January-December of 2010, the growth of export of goods (FOB) has been 42.4 percent. The fourth quarter indicators of export of services are forecasts.

¹² In January-December of 2010, the growth of import of goods (FOB) has been 13.9 percent. The fourth quarter indicators of import of services are forecasts.

¹³ The fiscal policy impulse has been estimated against Q4 2008 consolidated budget indicators (taking 2008 as a base year), since the fiscal policy in 2009 had a considerable impact, which was determined by anti-crisis measures taken at that time. The impact of revenues has been calculated against the actual nominal GDP indicator, and the impact of expenditures, against estimated potential GDP indicator.

such, the expansionary impact was felt prominently over the first and third quarters of the year.

The revenues and expenditures sides of the budget posted growth of 12.3 percent and 1.6 percent, respectively. The growth of tax revenues of the budget was about 13.7 percent.

To sum up, in the fourth quarter of 2010 the fiscal sector had an expansionary impact on aggregate demand which was attributable to a large amount of public expenditures made primarily in December. Also, taking into account deflationary pressures due to weak inflationary pressures in the labor market and still a fragile demand, one may conclude that net impact of domestic demand and labor market in the fourth quarter has been inflationary and is estimated to have been in the range of 1.6–1.8 percent.

Money and credit

In October-November 2010, it was apparent that inflation, driven by supply shocks for months, had started creating inflationary expectations and that it was putting secondary effects on headline inflation. Although the Central Bank left the refinancing rate unchanged in the fourth quarter it, however, sent certain signals, starting November, to further toughening of monetary conditions.

After such signals to the financial market, the picture in the fourth quarter was as follows: in interbank and intrabank repo markets the average interest rate rose by 0.48 pp in relation to the third quarter, making up 7.61 percent; in interbank repo market the average interest rate increased by 0.23 pp to 6.83 percent. In primary market of treasury bills interest rates tended to fall, which was determined by high liquidity levels due to a large state budget deficit and developments in foreign exchange market. In particular, the average interest rate of up to 1-year bonds dropped by 1.19 pp to make up 9.10 percent.

In the foreign exchange market in the fourth quarter, relative to the third quarter, the AMDUSD appreciated by 1.33 percent, reaching AMD 360.73 for one US dollar; the AMDEUR depreciated by 3.72 percent, comprising AMD 490.43 for one Euro; and the AMDRUR depreciated by 0.85 percent, making up AMD 11.75 for one Ruble.

During the fourth quarter broad money grew by 12.5 percent; dram broad money, by 14.0 percent. Similarly, monetary base and dram base increased by 15.8 percent and 14.1 percent, respectively. During the quarter currency in circulation increased by 11.9 percent; dram deposits, by 17.0 percent and foreign currency deposits, by 10.6 percent (around 10 percent, when the impact of change in exchange rate is excluded). As a result, the level of dollarization subsided by 1.6 percent against the previous quarter. In this period of time the indicator of economy lending has grown by 10.1 percent.

Generally, the exercised tightening of monetary conditions in early 2010 as well as the changed reserve requirement mechanism (whereby reserve requirement against 50 percent of foreign currency funds attracted shall be kept in dram) exactly reflected the annual behavior of monetary indicators. Thus, while dram base has grown by 12.8 percent and monetary base has reduced by 0.8 percent, dram broad money and broad money have grown, respectively, by 15.7 percent and 11.8 percent, instead. Also, currency in circulation has increased by 7.7 percent; dram and foreign currency deposits have increased, respectively by 29.0 percent and 7.0 percent (11.4 percent, when the impact of change in exchange rate is excluded). This resulted in a subdued level of dollarization (reduced by 4.2 percent). Lending volumes have increased, as well (as much as 26.7 percent growth, in which dram loans grew by around 14.0 percent and foreign currency loans, by 37.7 percent, or 43.2 percent, when the impact of change in exchange rate is excluded).

UPCOMING 12-MONTH PERIOD FORECASTS

External environment¹⁴

According to updated January forecasts of the IMF, in 2011 the world output growth rate is expected to reach 4.4 percent, just 0.2 pp higher from the October forecast. World inflation forecasts for 2011 have been adjusted upside. High inflation rates will persist in developed and emerging countries over 2011 and will reach, respectively, 1.6 percent and 6.0 percent. Though the world economy is entering a territory of steadier and slower growth after a fast recovery phase, the world economic growth rate for 2011 is around 0.6 pp higher from the average figure recorded for the last five years. In 2011 emerging countries will remain the main driver of the world output growth, as it was in 2010 when domestic demand of these economies accounted for about 46 percent of world economic growth that year. Economic growth in Euro-area is expected to be 1.5 percent instead of an estimated 1.8 percent for 2010. Economic growth rate in the USA will be slightly higher, to reach 3.0 percent, instead of 2.8 percent projected for 2010. Economic growth rate in Russia is expected to exceed the previous year's estimated 3.7 percent level to amount to 4.5 percent in 2011.

In commodities markets in 2011 prices will persist at a high level, and their average annual growth rates will post even higher figures. At the same time, developments inherent in individual commodity markets will determine risks to possibly higher or lower inflationary pressures.

In 2011 there will be some room for oil prices to grow, which is going to be around USD 98 a barrel recorded back in January. According to International Energy Agency's estimations, over 2011 the world will maintain a high level of demand for oil, an estimated 89 million barrels a day, which is almost consistent with expected extraction volumes. Given this, OPEC's unutilized effective stocks will be resting, for the first time in the last two years, at a level lower than 5 million barrels a day. In the meantime, recent developments in the Middle East are containing risks to higher oil pricing.

Prices of base and precious metals are mainly to show upward trends. The copper price is expected to reach USD 9000 per ton; the behavior of the price will be driven by huge demand from emerging countries (China, in particular), low stock levels and a limited supply. Nevertheless, the tightness of the market will not lead to considerable price increases as these were already high enough (compared with the production costs) in end-2010 and early in 2011 and because substitution opportunities are in place (aluminum is a good example as there is some reported excess of this commodity in the world market currently).

Gold price is expected to stabilize within USD 1360-1370 per troy oz. due to persisted demand for gold amidst low interest rates in developed countries.

Grain price will keep on rising at a moderate pace. This will be determined mainly by substantial reductions in expected crops due to an unfavorable weather in Southern hemisphere (Australia in particular, as the country suffers drought to the west and heavy rains to the east) as well as persisted uncertainties in connection with autumn wheat harvest in Northern hemisphere. According to January estimations of the US Department of Agriculture, some 646 million tons of grain stock is expected for 2010/2011 against around 683 million tons recorded in the previous period 2009/2010. Because consumption is estimated to be around 665 million tons, largely due to persisting demand from China, the world grain stock is predicted to decrease by around 20 million tons, to make up 178 million tons, reflecting reduced stocks of Russia and the EU. As a result, grain prices in 2011 will be around USD 8.5 a bushel.

¹⁴ The forecasts of external sector have been based on the information provided from the IMF, World Bank, The Economist, Global Insight, Financial Times, US Department of Agriculture, РосБизнесКонсалтинг and other sources.

The price of sugar will also demonstrate upward-trending patterns, driven by unprecedented world demand. According to the US Department of Agriculture data, the world stock of sugar for the marketing year 2010/2011 is expected to amount to 161.9 million tons. If an expected 158.9 million is consumed the final stock figure will be 26.5 million. Expected tension in the market may intensify further by some political issues (EU, India) as well as low crop expectations in Brazil in 2011. As a result, the price of sugar in 2011 will be around 38 cents/pound. In the rice market, the prices will remain mostly at a level they were at the beginning of the year, with some upward trends, however. Growing world demand for rice will amount to 452.7 million, which is estimated to be exceeding world production volumes. The price of rice in 2011 will be around 14 cents/pound, as a result.

In financial markets in 2011 the Euro exchange rate is expected to depreciate slightly, reflecting uncertainties in the market amid concerns over possible escalation of debt issues in the Euro-area.

Main impediments to rapid growth of world economy in 2011 may include escalation of debt issues in Europe, restriction of stimuli for economies under fiscal consolidation at a global level, possible sharp increases on international prices of food and primary goods. Exchange rate and price developments in emerging countries triggered by large-scale and mostly short-term capital flows to these countries due to low interest rates in developed economies may serve as destabilizing factors, as well. Under such conditions, priorities in the context of economic policies for 2011 will be, among others, shaping adequate economic stimuli in line with fiscal consolidation, carrying out structural reforms to tackle employment problems and strengthening financial sectors in developed countries, managing tremendous capital flows in emerging countries. In this regard, monetary policy in developed countries will carry on at relatively a moderate pace, while inflationary pressures in emerging countries will be a reason for tightening monetary conditions.

To sum up, amid expected world economic growth in 2011, the main markets of primary goods will be seeing moderate inflationary pressures, and prices will mostly remain at their end-year high levels.

Aggregate Supply

Economic growth forecasts made in the first quarter of 2011 are not much different from those of Q4 2010 figures, as macroeconomic developments had been mainly consistent with projections. As a result, economic growth in 2011 is expected to be within 4.1 - 5.7 percent¹⁵.

For **Industry**, forecasts show about 6-8 percent growth of value added due to expected growth in *ore mining* and *metallurgy* as prices of base metals in international markets persist at high levels; expected increase of volumes in production of *food* and *beverage* driven by continued recovery of world and domestic economies; effective technologies introduced to heat stations during the previous year; as well as expected increases in electricity generation owing to investment in projects, both former and new ones, in renewable energy.

For **Construction**, some acceleration in growth rates is anticipated yet the value added remains relatively small, in the range of 2-4 percent, mostly owing to increased construction volumes in energy, agriculture, transport and communications. No significant changes are expected in construction volumes financed by households.

¹⁵ See the 30 percent interval in the real GDP growth (cumulative) projection probability distribution chart below in this paper.

For **Services**, forecasts of value added are in the range of 3.5-5.5 percent, primarily due to expected growth in private spending and public expenditures, which will be reflecting both the volumes of trade turnover and other services rendered.

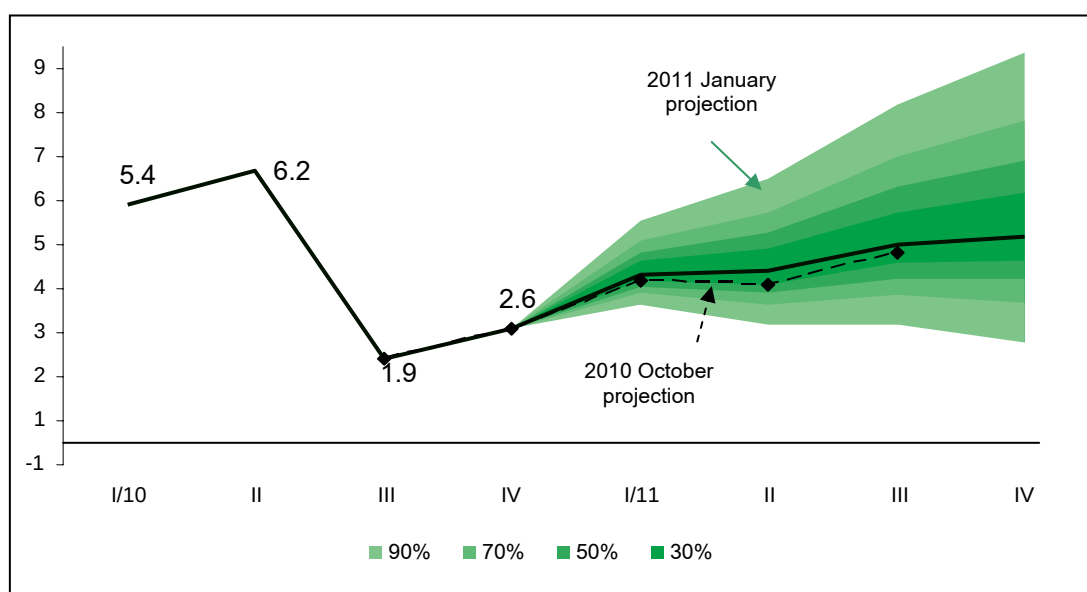
For **Agriculture**, forecasts of value added are in the range of 7-9 percent, which will be driven by expected growth in plant growing and animal breeding.

Because of the lack of high-value investments, productivity in agriculture remains almost unchanged, and under such conditions output in plant growing depends primarily on the weather¹⁶. Therefore, the least risky option has been taken in forecasting the growth in agriculture.

Risks to economic growth are dual-sided and associated with exogenous and indigenous factors. As such, upside risks are prevailing, reflecting both accelerated recovery rates of global economy and higher-than expected growth of domestic demand. There is likelihood of upside risks to forecast indicators in all branches of the economy.

In particular, upside risks may prevail in industry determined by quicker recovery in the world economy as well as faster realization of planned investment projects in construction and services. Risks are upside in agriculture, too, albeit its heavy reliance on weather conditions, which may result in dual-sided risks. Upside risks prevail however, which is associated with the increase of sowing area for wheat and planned investment in the framework of the program 'Rural Capacity Building'.

Real GDP Growth (Cumulative) Projection Probability Distribution¹⁷



¹⁶ Because the planned measures in agriculture are developed in the light of medium-term perspective, their impact on the productivity of this branch will not be significant yet.

¹⁷ From now on, the probability distribution chart will be presented, using real GDP cumulative growth indicators instead of previously published quarterly growth indicators of real GDP.

Economic Growth Projection Probability Distribution

Economic growth interval	Probability of economic growth interval	
	Q2, 2011	Q4, 2011
< 1%	0.00%	0.44%
1 – 3%	5.98%	8.66%
3 – 7%	89.84%	67.81%
7 – 9%	4.00%	17.39%
9% <	0.13%	5.65%

<i>Real GDP growth forecast probability distribution</i>				
Period	90 percent probability interval		30 percent probability interval	
	min	max	min	max
January-March 2011 to January-March 2010	3.1	5.1	3.7	4.1
January-June 2011 to January-June 2010	2.7	6.0	3.6	4.4
January-September 2011 to January-September 2010	2.7	7.7	4.1	5.2
January-December 2011 to January-December 2010	2.3	8.9	4.1	5.7

Labor Market¹⁸

Forecasts of demand for labor for the period January-December 2011 have been revised downside. In the forecast period nominal wages are predicted to grow higher and the level of unemployment even lower, in comparison with previous forecasts.

In particular, over 2011 average nominal wages are expected to increase by nearly 7.8 percent due to continued growth of productivity in the private sector and moderate growth of wages in some budget-supported organizations. In the forecast period, reduced unemployment and persisting inflationary environment in the first quarter of 2011 will be notably affecting the growth of nominal wages in the economy.

Over 2011, demand for labor will keep on growing mostly due to the output growth in industry and service sectors. This would push the number of the unemployed down, and the average level of the officially unemployed in the economy would reduce by 0.4 pp to 6.6 percent.

Attributable to the aforementioned factors, over 2011 the growth rate of nominal wages will slightly outpace the productivity growth rate, leading to some increase in unit labor costs. This will create minor (0.2-0.4 percent) inflationary pressures in the economy.

¹⁸ The labor market data for 2011 are the Central Bank estimates which are based on actual figures of the third quarter of 2010 and actual October and November figures, as published by the National Statistics Service of Armenia. The growth indicators represented in this sub-section are relative to the same quarter of the previous year, unless otherwise specified.

Aggregate Demand¹⁹

Private Sector Spending

Estimations of private sector spending for the period January-December 2011 have been forecast slightly upside, on a basis of expected economic growth rate and persisted inflow of remittances as well as increased volumes of private sector lending.

According to revised estimations, in the period January-December 2011 private expenditures are expected to grow by about 9 percent, which is determined by both increased private consumption and private investments. The domestic demand will increase by 5.5 percent in the event private spending grows and public expenditures grow a little.

In the structure of private spending, private investment will grow by nearly 20 percent, reflecting improved expectations of economic agents, growth of inbound remittances and sustainable recovery of external and domestic demand. Own funds and loans made available to private sector will remain the main source of financing for private investment.

Private consumption will grow by 6 percent due to increased disposable private income, fuelled by real GDP growth and inbound money transfers.

In the first quarter of 2011, continued growth of private spending will lead to neutralization of the gap between private spending and their potential level (which was caused by the crisis in 2009). In the period from the second quarter up to the fourth quarter of 2011 the private spending gap will be close to zero (positive). As a result of these developments, over 2011 private spending will be rather close to the potential level and will have a neutral impact in inflation. It should be noted, however, that the private spending gap could grow wider and thus create inflationary pressures in the economy in the event the volumes of economy lending increase (owing to foreign funds).

Current Account

Forecasts of current account components of Balance of Payments for 2011 have been revised in the face of new developments in global and domestic economies. The increases of export of goods and services in dollar terms and real terms have been revised upside, reflecting persistently high prices of base metals in world markets and expected high growth rates in domestic industry. Over 2011 the growth of export of goods and services will be in the range of 13-15 percent in dollar terms and 6-8 percent in real terms. Risks to export could be both upside and downside which would be determined by the developments in world economy, international prices of base metals and developments in domestic industry. The indicator of growth rate of import of goods and services has been revised upside, too. For 2011, the forecast for import of goods and services is in the range of 9-11 percent, in dollar terms, as import prices are expected to persist at a high level while positive developments are anticipated in the domestic economy. In the first half of 2011 real volumes of import of goods and services are expected to shrink whereas in the second six months these are expected to increase. As a result, a slight increase will be posted in real volumes of goods and services in 2011. Risks to import are dual-sided, either.

Forecasts for non-commercial remittances by individuals have not changed, and it is expected that at the end of 2011 these would be in a 9-13 percent interval, which will be determined by the developments in the Russian economy. Recent IMF

¹⁹ The data of real growth of private consumption and investments for 2011 are the Central Bank estimates. Actual figures of these data are as of the third quarter of 2010 and published by the National Statistics Service of Armenia. The real growth indicators represented in this sub-section are relative to the same quarter of the previous year, unless otherwise specified.

forecasts show that the economic growth indicator in Russia in 2011 will reach 4.5 percent, a slight increase from the last projected indicator.

All aforementioned developments suggest that over 2011 the *current account / GDP* ratio will improve and will be in the range of 11.5-13.5 percent.

Consolidated Budget²⁰

In 2011 the Government will continue moving to a balanced policy from the one designed to take anti-crisis measures while trying not to contribute to the creation of additional inflationary pressures and not to impede to the recovery of economic growth. The 0.3 pp growth mark of tax revenues in GDP against the previous year as well as making public expenditures in compliance with established proportions is the main item in the to-do-list of public spending. The planned growth of public expenditures is on the current expenditures mostly, while capital expenditures will report reductions. It is noteworthy that the deficit to GDP ratio will reduce by 1 pp in relation to 2010.

So, for 2011 the impact of the fiscal policy on aggregate demand will be almost neutral, which is a consequence of little expansionary expenditures and slightly restrictive revenues impacts. However, in the first six months of 2011 the fiscal policy will have somewhat an expansionary impact on aggregate demand due to a lagged effect of the expansionary impulse transmitted in the end-year 2010. The effect, however, will be neutralized during the second half of 2011.

To sum-up, the first half of 2011 will incur the lagged effect of the expansionary budget policy of the fourth quarter of 2010. This, coupled with minor inflationary pressures coming from the labor market and neutral impact of private spending, will create certain inflationary pressures, which is estimated to be within 1.4-1.7 pp for the first half.

For the second half of 2011, the net impact of these sectors on inflation is estimated to be within 0.3-0.4 pp, taking into account the fiscal sector's neutral influence, weak inflationary pressures coming from the labor market and neutral impact of the private spending.

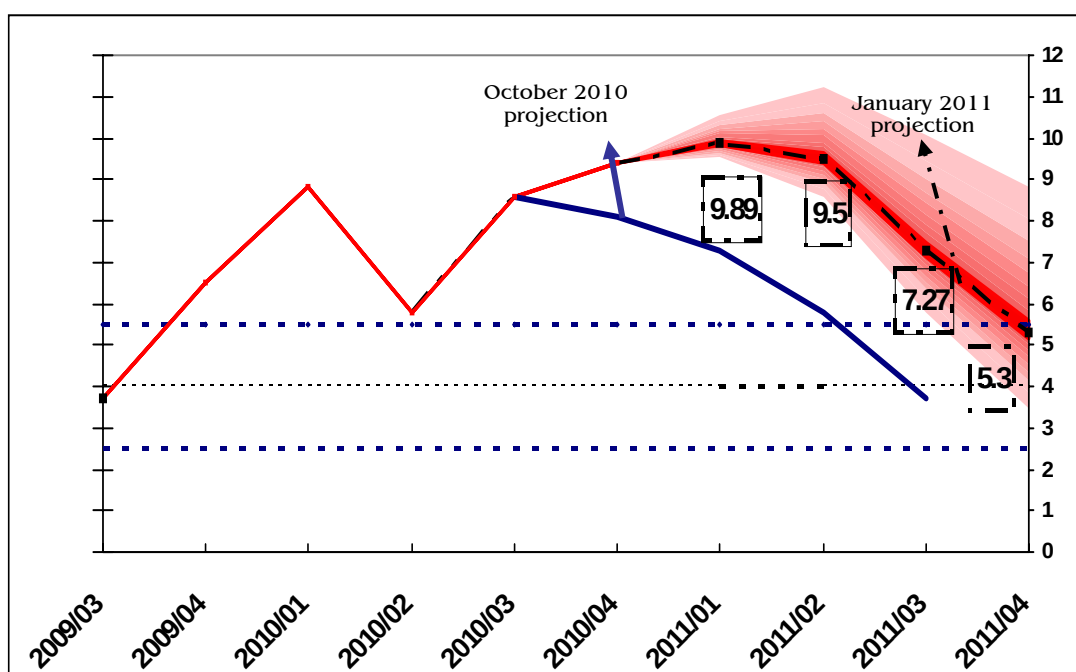
²⁰ *The fiscal sector's impact has been estimated using consolidated budget indicators based on the proportions laid down in the Republic of Armenia Law on State Budget 2011. The fiscal impulse has been estimated against consolidated budget indicators of 2010 as a base year, which was determined by positive trends for economic recovery and the return move to a more balanced fiscal policy from an expansionary one. It should be noted that the revenues impulse has been calculated against an estimated nominal GDP indicator and the expenditures impulse has been calculated against an estimated potential GDP.*

INFLATION FORECASTS AND MONETARY POLICY DIRECTIONS IN THE PROJECTED 12-MONTH PERIOD

Inflation and monetary policy directions for the 12-month horizon have been projected through inflation model by commodity groups and the Quarterly Projection Model, based on actual and projected macroeconomic conditions.

The results of the inflation model by commodity groups were based on an assumption of constant market rates during the forecast horizon, which means that likely inflation developments have been estimated under currently implemented accommodative monetary policy. According to forecasts built on such an assumption, in the first six months of 2011 the 12-month inflation will persist at a high level – the central value is projected to be 9.5 percent in the end of the first half – determined by supply shocks transmitted from the end of the year, including unprecedented growth of prices of agro-products and price increases on the main food products and primary goods in world markets. Starting from the third quarter, as the said shocks come to an end, the inflation rate will slow down, and the central value of inflation will make up 5.3 percent in an end-year projection²¹, which will still be higher from the central target of 4 ± 1.5 percent inflation band. Further, existing uncertainties imply that there is a high probability that inflation indicator may deviate from the central value: at approximately 41 percent probability, in the end of the year the 12-month inflation could be in the 5.5-7.5 percent range.

*Inflation Projection Probability Distribution Chart
(12-month)*



²¹ In producing results of the inflation model by commodity groups, existing weights of goods and services in the consumer basket have been used, which are most probably to undergo changes starting from March of 2011.

The 2010 Inflation Projection Probability Distribution

Inflation interval	Probability of inflation interval	
	Q2, 2011	Q4, 2011
< 3.0%	0.00%	1.4%
3.0 - 4.0%	0.00%	7.1%
4.0 - 5.5%	0.00%	31.0%
5.5 - 7.5%	0.04%	40.9%
7.5 - 9.5%	41.4%	16.5%
9.5% <	53.9%	2.6%

The inflation projection probability distribution chart

The chart shows not only point values of projection but also ranges of possible deviation from such values in future, based on the Central Bank estimations. The central value corresponds to the forecasts generated by the use of the Inflation Forecast Model by commodity groups. These are estimated on the assumption of constant interest rates in the market and other macroeconomic developments. Then there is a focus on risks that may cause the projected inflation to deviate from the central value; in other words, it measures the risk balance which determines the distance from the central value. The enclosed table denotes the probability at which inflation will be in one or another interval. An analytic material on the inflation projection probability distribution chart is available on the Central Bank website at:

www.cba.am/CBA_SITE/downloads/verluc/1.1.pdf:

Upside risks to the inflation indicator to deviate from the forecast value in the foreseeable time horizon are prevailing because: i) international prices of primary goods and food products may surpass projections amid rapid recovery of the world economy; and ii) the domestic demand recovering at a faster pace as well as the legislative change to bring excise duty and the tobacco tax on to the general taxation framework may lead to inflationary pressures internally. Also, depending on how developments would evolve in agriculture, there may emerge both upside and downside inflation risks, but the downside risks are prevailing in this case.

Taking into account the above, in order for the inflation indicator to bring closer to the central value of the target, i.e. 4 percent, monetary conditions will need to be tightened while further taking action to conquer dollarization.

Inflation forecast through the Quarterly Projection Model and projected monetary policy directions fare generally in line with the Inflation Model by commodity groups into account. The QPM results have been produced based on the Q4 2010 actual macroeconomic conditions. It was estimated that persisting high inflationary environment had been attributable to supply shocks and that in the fourth quarter inflationary pressures coming from the external sector had intensified.

Forecasts carried out in consideration of initial macroeconomic conditions suggest that the aggregate demand will keep on recovering in the forecast time horizon yet GDP will remain below its equilibrium in the face of still slow economic

growth rates. Under such a circumstance, no extra inflationary pressures driven by aggregate demand are anticipated. On the other hand, high inflationary environment persisting in the external sector will carry on affecting domestic commodity markets, influencing headline inflation through prices of imported goods. Generally, the QPM results also point to the likelihood that the impact of supply shocks on the inflation behavior would be prevailing over the first six months of the year, keeping it high, and the 12-month inflation rates would only subside starting from the second half. At the end of the year these rates would, however, be above the central value of the target.

Conclusion is the same: the monetary conditions need to be tightened and further measures taken to downscale dollarization in order to bring inflation closer to the central value of its target. In the meantime, existing uncertainties may come along with variations to expected inflation developments, hence the projected monetary policy directions.

In this context, the 2011 monetary indicator forecasts are based on the actual macroeconomic environment of the previous year, macroeconomic developments projected for the next year and the fiscal policy scenario envisaged for the same period of time. Further, in the light of de-dollarization measures, forecasts have been made to suggest that dram broad money would be growing faster than broad money in 2011, by 22.2 percent and 16.0 percent, respectively, while the growth rate of monetary base would amount to 12.3 percent. Similarly, dram deposits are forecast to be surpassing foreign currency deposits in their growth rates, by 35.2 percent and 7.6 percent, respectively (29.0 percent and 7.0 percent in the previous year). The de-dollarization measures would also be reflected in the behavior of currency in circulation, as the latter's growth would amount to 13.0 percent, which is almost twice as faster from the previous year's indicator.

Over 2011 the financial sector will remain active in economy lending. High growth rates in lending to businesses are anticipated in line with some refreshing in the mortgage lending market. In 2011, however, the growth in economy lending will be growing at a modest rate, 18 percent, in comparison with 27 percent recorded in the previous year. The decline will mostly be attributable to the intended tightening of monetary conditions.

Inflation in CIS in 2010*

Country	CPI	Food products
Armenia	109.4	114
Belarus	109.9	114.1
Ukraine	109.1	110.6
Moldova	108.1	107.1
Kazakhstan	107.8	110.1
Russia	108.8	112.9
Kyrgyz Republic	119.2	NA
Tajikistan	110.0	114.2
Azerbaijan	107.8	NA
CIS, average	110.0	
Georgia	111.2	122.8

* Source: official websites of national statistics services of these countries.