

The Monetary Policy
PROGRAM
| 2005 |
of the Republic of Armenia

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TABLE OF CONTENTS	
INTRODUCTION	5
THE MACROECONOMIC ENVIRONMENT	6
FISCAL POLICY	9
EXTERNAL SECTOR	13
INFLATION	19
DIRECTIONS AND TRENDS OF THE 2004 MONETARY POLICY	22
MAIN OBJECTIVES AND DIRECTIONS OF THE 2005 MONETARY POLICY	26
RISKS IN IMPLEMENTING THE MONETARY POLICY PROGRAM	29
DEVELOPMENTS IN THE BANKING SYSTEM	31

DEVELOPMENTS IN PAYMENTS AND SETTLEMENTS	36
ANNEXES	39

INTRODUCTION

The Monetary Policy Program of the Republic of Armenia (the Program) has been prepared in compliance with the provisions of the Armenian Law on the Central Bank of the Republic of Armenia (ALCB). It consists of the following sections:

1. The macroeconomic environment;
2. Fiscal policy;
3. External sector;
4. Inflation;
5. Directions and trends of the 2004 monetary policy;
6. Main objectives and directions of the 2005 monetary policy;
7. Risks in implementing the monetary policy program;
8. Developments in the banking system; and
9. Developments in payments and settlements.

All sections of the Program, except for the section on monetary policy, outline the main trends in the respective areas in 2004 and the main directions of development laid out for 2005. The monetary policy, as a key instrument for achieving the main objective of the Central Bank of the Republic of Armenia (the CBA), is presented in the Program in two sections. The first section gives a detailed account of the monetary policy indicators and trends of 2004, and the second section provides the main directions and set of instruments of the monetary policy to be implemented in 2005.

Annexes to the Program provide a forecast of the main macroeconomic indicators for 2005 covering all sectors of the economy, and the methods which were used to make the forecast.

Overall, the macroeconomic environment in 2005 will evolve as follows:

Economic growth is forecast to be 8% according to the Armenian Law on the State Budget (ALSB) for 2005. The GDP deflator will exceed the annual average consumer price index (CPI) and reach 4%.

In the external sector, the share of the current account deficit of the balance of payments in the GDP will continue to decline to 3.4% in 2005 against 4.0% in 2004. The deficit of the balance of trade will show similar patterns; though it will rise in absolute terms by 12.1%, its share of the GDP will shrink to 12.0% against 13.2% in the previous year.

As a result of implementing the fiscal policy, the state budget deficit in GDP will be 2.3%. Despite a low deficit level, conversion at the CBA and spending of large-scale foreign exchange (FX) funds,

disbursable through the state budget, will draw a marked expansionary impact on the monetary aggregates.

Considering these developments in the macroeconomic environment, and the effects which would be generated from certain measures towards reducing dollarization in 2005, much higher growth rates are anticipated for broad money (annual average 17.0%) and the monetary base (annual average 13.6%) compared with 6.1% and 7%, respectively, in 2004.

In the outcome of such a scenario of the monetary policy, and by using economic and mathematical models for inflation forecasts, the CBA has projected up to 3% as the inflation indicator as of the end of the period, and an annual average of 2.2% for the inflation indicator.

THE MACROECONOMIC ENVIRONMENT

Economic Growth and Inflation

In general, the macroeconomic environment in 2004 was favorable in terms of ensuring medium-term steady economic growth. Continuing upward trends of household income were primarily stimulated by a large inflow of private transfers. In terms of aggregate demand components, these developments have resulted in increased expenditures by the private sector which, on the part of aggregate supply, stimulated the growth of services and construction.

During the year, the fiscal policy contributed to economic growth less than in previous years. An altered branch structure of the economy, due to unprecedented growth in agriculture and, notably, slowed growth rates in industry, made a distinction in the spectrum of macroeconomic developments.

Under these conditions, the CBA pursued the strategy set forth in the Program.

As a result, the real GDP growth reached 10.1%¹ outstripping the projected indicator. The 3% inflation target was fulfilled, inflation at year's end was 2%, and the annual average was 7%. The growth of the GDP deflator exceeded the projected level by 2 percentage points (pp.) to 6% due to a notable increase in the industry deflator index which, in turn, was caused by a rise in international prices of certain commodities.

It is expected that the main trends in macroeconomic environment development will carry on into 2005. Growth rates of household income, hence private consumption and investment, will remain high leading to sustained growth in services and construction. A rise in productivity is anticipated in some sectors of the economy, owing to the inflow of foreign direction investment (FDI) expected for the year and domestic investments fuelled by domestic savings.

Based on these developments, the CBA projects 8% economic growth² and up to 3% inflation for 2005.

Aggregate Supply

During 2004 developments in various sectors of the economy, though somewhat different from previous trends, have ensured higher than projected economic growth. While in services and construction the trends of the previous years continued, notable changes were seen in agriculture and industry.

During the year growth rates of industry somewhat slowed down, ending up with a real growth of 2.1% and contribution to economic growth of 0.4 pp. compared with 2.9 pp. in the previous year. Relatively high growth was seen in the mining industry that also promoted an increase in exports. The processing industry, however, reported smaller growth as

¹ The 2004 annual indicators are the data of the National Statistics Service of Armenia (NSSA). The annual indicators of aggregate demand are the CBA estimations.

² The estimation of real growth of various sectors of the economy for 2005 is provided in Annex 3.

compared with previous years, mainly due to decreased output in diamond processing and metallurgy.

Essential inflow of foreign investment is expected in 2005 in the chemical industry and metallurgy, to improve and re-activate the available production capacities. In 2005, the value added in industry is expected to grow by 3.8% in real terms, which would make a 0.7 pp. contribution to economic growth.

Over the past 6 years, an unprecedented 14.5% growth has been recorded in agriculture, with a resultant contribution to economic growth at 3.1 pp. It was mainly attributable to favorable weather and enlarged sowing areas. Growth was seen in both cattle breeding and planting. In the area of planting, growth occurred mostly due to increased yields of cultured grain and legumes (real growth of 47.5% in January-November); grapes (real growth of 31.1% in January-November); and potatoes (real growth of 37.2% in January-September).

In 2005 agriculture may see some investments which should prop up growth in its productivity. The value added of this branch is expected to grow by 5.1%, in which case its contribution to economic growth will be 1.1 pp.

Despite the lack of Lincy Foundation's funds, which served as a reason for a notable increase in the volume of construction over the last two years, construction growth in 2004 beat the program indicator of 13.4%. This growth occurred due to increased volumes in construction financed by the private sector. Growth trends are expected to continue in 2005 also, with capital construction volumes to grow by at least 11.5% and contribute to economic growth by 1.8 pp.

A 12.5% growth in services was generally consistent with growth in household income. Among all the services, communication services increased notably facilitated by continuous investments in the sector. In the medium run they, along with other investments in infrastructure, will lead to a steady rise in productivity in all sectors of the economy. In 2005 services are expected to grow in real terms by 11.1% and contribute to economic growth by 3.8 pp.

Contribution of net indirect taxes to economic growth declined by 0.6 pp. to 0.2 pp. in 2004, whereas their share of GDP remained unchanged, at 9%. According to the ALSB, growth in the share of net indirect taxes in 2005 is not foreseen, while the contribution to economic growth will be 0.5 pp.

In 2005, an anticipated marked inflow of FDI into different sectors of the economy will shore up the rise in productivity nationwide. With a partial effect to play in 2005, the result of such productivity will continue to be felt for years to come.

Aggregate Demand

During the past year the structure of domestic demand incurred certain shifts. While the private sector's expenditures grew in real terms by 10.6%, the public sector's expenditures dropped by 8.7%

resulting in an almost 2 pp. fall in its share in domestic demand, compared with the previous year.

Continuous growth of household income and a continuous inflow of private transfers and foreign investment resulted in a private sector expenditures growth in 2004 at surpassing rates, vis-à-vis the economic growth. Growth of private consumption beat the program indicator and reached 8.8%. An almost 20% rise in private investments, directed mostly at industry and services sectors, occurred due to both increased FDI and investments generated from domestic savings. Such investments, first of all, refer to the input of technologies and equipment that serve as a key precondition for increased efficiency in economic activity.

Under continuous high rates of household income and economic growth in 2005, the private sector's expenditures are expected to retain a high level, attributable to a rise in private consumption of 6.0% in real terms and private investment of 13.1%.³

The fiscal policy's contribution to economic growth was less than in previous years. While public consumption grew by a mere 2.6% because of some cutback on certain items, a decrease in public investment by 26.8% was, in part, caused by the high level of the same indicator of the previous year (inclusive were the investments financed by Lincy Foundation funds which, however, were not available in 2004), and due to a shortage of investments into PIUs and a decrease in their co-financing.

Despite such a deviation in expenditures of the public sector in 2004, public consumption in 2005 will increase by 20.4% and public investment by 30.5%, according to the ALSB for 2005. This is due to an expected inflow of foreign loans and spending of funds accumulated on the Treasury Unified Account (TUA). Public consumption will grow because of increased social expenses, while most of the public investment will be made in housing and road construction.

Growing domestic demand was accompanied by a notable slowing of external demand due to a marked decline in imports of raw materials of "Precious and semi-precious stones, precious metals and articles" and the subsequent export of the finished goods. As a result, the export of goods and services grew in real terms by a mere 1.6% and imports declined by 1.5%. However, if the above item is ignored, exports grew by nearly 29% and imports grew by 10%. The latter is attributable to both increased private consumption and extended volumes of imported investment goods.

According to CBA estimations, with some appreciation of the national currency in 2005, real growth rates of both imports and exports will exceed the previous year's indicators to reach 7.8% and 7.4%, respectively.

GDP Deflator

A price increase on base metals, and precious metals and stones, in international markets in 2004 resulted in a mark-up in the diamond processing and metallurgy industries. As a result, the deflator of the

³ The method of evaluating real growth of private consumption and investment for 2005 is provided in Annex 4.

industry's value added reached 113.5%, beating the price growth in other sectors. The deflators of value added in construction, agriculture and services were 102.6%, 105.0% and 103.0%, respectively.

The deflator of consumption, which constitutes the largest share in GDP, exceeded deflators of the other components of aggregate demand and made up 105.8%. This was attributable to a high annual average inflation and high sale prices of agricultural products. The capital investment price index was 102.6%. During the appreciation of the Dram, the goods and services export deflator dropped by 2.2% while the import deflator rose by 0.8%, attributable to the fact that the dollar price index of exports was nearly 3 pp. lower than that of imports. In the outcome, the GDP deflator exceeded the program indicator by 1 pp. to 106%.

In 2005 the GDP deflator is expected to be 104%.⁴ The deflator of the industry's value added will be 103.8%. The deflator indicators of construction, agriculture and services will not change significantly and will be 103.5%, 105.3% and 103.8%, respectively.

The consumption deflator in 2005 will be 103.1%. The deflator was computed taking into consideration that the annual average inflation, included in its computation, has been forecast up to 2.2% while agricultural product sales prices should rise consistent with the previous trends to 5.3%. The capital investment deflator will be 103.5%, heavily dependant on the deflator of construction. With 9.1% appreciation of the national currency foreseen in 2005, the exports deflator will drop by 5.5% while the imports deflator will rise by 1.3%.⁵

⁴ The evaluation method is provided in Annex 3.

⁵ The evaluation method is provided in Annex 6.3.

FISCAL POLICY ¹

The 2004 results of the development of the Armenian economy, showing advancements in recent years, shows that there are preconditions for an effective implementation of long-term development strategies for the Armenian economy. The 2005 fiscal policy program is also set to follow the core principles of the Poverty Reduction Strategic Program (PRSP) and the Public Medium-Term Expenditures Program 2004-2006. The recent years' strong economic growth will serve as a vital prerequisite for implementing the 2005 state budget.

The bedrock of long-term development in the Armenian economy is the increased effectiveness in collecting domestic resources, in general, and taxes² in particular. The ALSB for 2005 provides for higher growth of the taxes/GDP ratio, by 0.5 pp. compared with that which was set in the medium-term expenditures program (0.3-0.4 pp. annually). The percentage growth of nominal taxes in 2005 will lose out to the previous year's indicator. The level of tax revenue is planned to increase this year by 16.1%, whereas the growth in tax revenue in 2004 was 17.2% against the year before.

For the purpose of ensuring higher tax revenue for 2005, the Government's program provides for strengthened administrative measures to ensure approximately a 5.8% level of tax revenue annually.

With growth rates of taxes surpassing nominal GDP growth, the tax sensitivity coefficient³ in 2005 will be 1.3 compared with 1.1 in 2004. However, even with such a growth of taxes, facing various social issues in Armenia, the taxes/GDP ratio in 2004 was low (it is also below the average taxes/GDP ratio found in other transition countries). The indicator will further remain low over the next couple of years.

The successful implementation of tax collection in 2004 was strong. Collection of taxes occurred for almost the entire year of 2004 and was quite successful with total receipts of nearly AMD 10 billion. According to preliminary data, tax revenue of the state budget in 2004 will exceed the annual program by 4 pp. and the previous year's tax revenue, by 17.2%. Nevertheless, the taxes/GDP ratio will be 1.0 pp. below the projection⁴ of 14.1% even if GDP exceeds the anticipated level for 2004.

The share of direct taxes in the tax revenue structure in 2005 will be slightly reduced vis-à-vis the previous year's indicator. Direct taxes will constitute 19.1% of tax revenue compared with 19.6% in 2004, and 16.1% in 2003. Indirect taxes will constitute 64.6% of tax revenue compared with 64.1% in 2004, and 69.5% in 2003. In 2005 direct taxes will

¹ The 2004 and 2005 preliminary indicators of Armenia's consolidated budget serve as a basis for this section. The numerical data of the 2004 state budget are taken from a preliminary reporting form of the state budget, provided by the Armenian Ministry of Finance and Economy (MoFE). The methodology of producing the consolidated budget indicators is provided in Annex 5.

² The tax revenue indicator in this text refers to the state budget's tax revenues and duties taken altogether.

³ Computed as a ratio of percentage changes of tax revenue and GDP.

⁴ See, the Government of Armenia's budget note 2004 which forecasted the GDP level for 2004 to be AMD 1694,4 billion, in which case the taxes/GDP ratio would have been 15.1%.

grow by 13.1% and indirect taxes by 17.2%. Growth of these indicators in 2004 was 36.6% and 11.3%, respectively. In the structure of tax revenue over the last three years, taxes on imports have shown some downward trends. In 2004 however, the share of such taxes remained persistent (47% of tax revenue), and strong growth in imports during the year contributed to a growth in tax revenue. This results in an assumption that a strong growth in imports, anticipated for 2005, will also have an impact on an increase in tax revenues from imports.

The year 2004 saw the positive results of a more level trend in the collection of taxes. During the year, 28% of average monthly taxes were collected in the last three days, and 14% in the last day. These indicators were 48% and 28% in 2003 and 56% and 40% in 2002, respectively.

In terms of the impact on aggregate demand, budget revenue in 2005 will have a restrictive impact, which will be 0.4⁵, according to the fiscal impulse indicator. In 2004 the revenue impulse was 0.5 restrictive against the program 0.1.

The achieved success, in proportion to the collection of taxes, was not concurrent with a smooth allocation of expenditures, leading to a condition whereby the TUA began to carry a continuous accumulation of funds. More to the point, certain expenditure items of the budget incurred cutbacks for almost all the months, except for December. The state budget indicators of December created a dispersion in the pattern of expenditures for the eleven months, inducing both change in seasonality and some inconsistency of executed expenditures with projected proportions. Thus, in the last week of December, an AMD 10.3 billion tranche of the PRSP loan was disbursed, which had not been included in the ALSB for 2004. Besides, almost AMD 10 billion was spent in the last two days of the month. As a result, the budget expenditures exceeded the program level by AMD 8 billion, the budget deficit by AMD 7.2 billion while the TUA amounted to AMD 42 billion instead of the program AMD 49.6 billion. In these last two days expenditures amounted to 30% of the month's total, taxes amounted to 27% and deficit amounted to 27%.

Another factor emerged during the year as discrepancies were found between the program and actual flows of the local budget, off-budget and pension budget funds, which carried the impact of certain months on the TUA funds. So, the average daily balance in the TUA during the year was AMD 38 billion, about 2.7 times higher than the 2003 level. Because of the size and discrepancy between program and performance, these funds created problems in short-term programming and implementation of the monetary policy. For comparison, the average daily balance in the TUA in 2004 was 34% of the average monetary base and twice the average amount of corresponding accounts with the CBA. The existence of such accumulations was problematic as it would increase the likelihood of making changes in budget projections, which would have created uncertainty in programming and implementing the monetary policy.

⁵ See Annex 5.

In view of short-term monetary policy programming for 2004, there is a need to refer to the issue of discrepancies between quarterly and monthly budget program indicators which have been observed since the beginning of the year, and made visible in all quarters. The problem concerned especially the TUA as some spending from it had been planned according to quarterly proportions of the state budget 2004, whereas the monthly budget programs provided a saving of funds in the TUA. The latter was seen in almost all quarters, attributable to the following factors: excess of the level of actual monthly taxes from the program, saved funds on expenditures (except for December), and deviation of the monthly projected expenditures⁶ from the quarterly proportions. In the first half of the year the deviation on expenditures from the TUA was AMD 14.6 billion, and in the second half it was AMD 7.4 billion.

Considering the above, and the spending of only AMD 8.6 billion during 2005 of the TUA funds available as of the last day of December 2004, one may expect that the issue will be demonstrated in 2005 too. Also, the monetary base indicator will rise in 2005 by around AMD 32 billion only because of the conversion of external funds of the budget and the said spending from the TUA. In this case, the programming and implementation of the monetary policy will be attended with risks expected from the fiscal sector, and much effort will be needed in 2005 to improve the quality of programming and implementing the monetary and fiscal policies. Further improvement in coordinating the monetary and fiscal policies may be appropriate by making the relevant mechanisms more operative and flexible.

Positive shifts were seen in implementing the monetary policy in 2004 as the share of currency in broad money declined, which occurred partly due to a decline in cash budget expenditures. The share of currency in broad money in 2004 (end-period) was 34.5% against 39.4% in the previous year. Cash broad money reduced during the year due to the 2003 change in the Armenian Law on Value Added Tax (providing for limited amounts in offsetting, in case of cash operations) and because the Armenian Law on Cash Operations provided for smaller limits of cash payments for 2004. Currency reduction was accompanied by a relatively even distribution of currency, as compared with previous years.

Consistent with the long-term strategic program⁷ for development of the Armenian economy, the expenditure policy of the budget for 2005 will aim at achieving 18.8% growth of overall expenditures against the previous year. In 2004 the growth of expenditures was 7% as in 2003 they contained Lincy Foundation funds. The growth will occur due to an increase in current expenditures by 14.9% and capital expenditures by 38%.

The budget expenditures for 2005 therefore will have an expansionary impact on aggregate demand. The impact will be 1.3 expansionary, according to the computed fiscal impulse indicator. In contrast, in 2004

⁶ The method of programming budget expenditures limits in the monthly budget programs differs from the quarterly expenditures programming. Monthly expenditures are programmed using MoFE estimations based on the requests on expenditures submitted to MoFE.

⁷ I.e. PRSP and Public Medium-Term Expenditures Program 2004-2006.

the budget expenditures had a restrictive impact on aggregate demand, reaching 0.9 restrictive instead of the program 2.1, according to the computed fiscal impulse indicator. So, the 2004 fiscal policy impact on aggregate demand was 1.4 restrictive. The fiscal policy impact in 2005 will be 0.9 expansionary.

In 2005 the policy to reduce the budget deficit in the GDP will continue. The indicator of the budget deficit will be 2.3%, compared with 1.8% in 2004. In deficit financing sources in 2005, external sources will prevail (71%), slightly up from the 2004 level. Armenia's state budget reliance on external funds will persist in 2005, as it was in 2004. Roughly 16.4% of budget expenditures will be executed on account of external funds. This indicator for 2004 and 2003 was 16.3% and 25%, respectively.

Changes in domestic sources of deficit financing in 2005 will not be considerable. Receipts from government securities will amount to AMD 6.0 billion compared with AMD 5.5 billion in 2004, while spending from the TUA will amount to AMD 8.6 billion. In 2004 AMD 12 billion was planned to be spent from the TUA but the actual level had been in the direction of accumulating savings. For this reason the budget deficit and financing sources deviated from the program levels.

In 2004, allocations of government securities were quite successful as a constantly sufficient banking liquidity facilitated the selling of longer-term securities. Longer periods of maturity on government securities in 2005 is anticipated, since the sale of AMD 1.2 billion worth of government securities with a 10-year maturity (with a moderate interest rate) in the last quarter of 2004 served as a good precedent. Securities with a 15-year maturity are expected to be allocated during 2005. This will provide a more serious impulse to creating long-term savings in the economy and build a real basis for the preparation of public debt management strategies. This process will also benefit from the transparency of such strategies.

In 2004 the anticipated level of net income from government securities was ensured. The average maturity of securities in circulation increased almost twofold to 754 days, as compared with 352 days in the previous year. In addition, in 2004, according to a joint program with the Ministry of Finance and Economy (MoFE), the CBA purchased AMD 6.0 billion worth of securities in the secondary market bringing some improvement to the set of instruments of the monetary policy.

Under a programmed low budget deficit and large repayment of external debt during 2004, including repayment of Russian loans under the arrangement "Property against Debt", the 2005 fiscal policy will afford a sufficient level for Armenia's public debt sustainability (according to the CBA methodology of calculation of debt sustainability). With a high level of GDP and lower than expected deficit, the debt/GDP ratio was quite low in 2004. The debt/GDP ratio in 2005 will be 33.6% compared with 35.7% the year before.

The key warrant for effective coordination of the monetary and fiscal policies for 2005, and the years ahead, will depend on how well

these policies can be coordinated, the preparation of relevant programs and the transparency ensured. To this end, it will be useful to develop publications of the annual, quarterly and monthly programs of the fiscal policy and the comments on deviations in the pace of implementation.

EXTERNAL SECTOR ¹

General Trends

The developments in the external sector in 2005 will be determined by the Armenian economy further integrating with the world economy, by maintaining a high GDP growth rate and creating a consistent macroeconomic environment.

In 2004 the current account deficit decreased considerably in both absolute value (USD 143.7 million against USD 190.6 million in the previous year) and its share of GDP (4.0% against 6.8% in the previous year). The abatement of the current account deficit was mainly determined by an unprecedented growth in the net influx of private sector transfers, which in turn resulted in growing trade and service balance deficits. A considerable decline in the volume of imports and exports of "Precious and semiprecious stones, precious metals and articles", so weighty in external trade, was typical for 2004, which resulted in slowing growth rates of total exports and imports. Though the inflow of capital in 2004 decreased compared to the previous year, the capital and financial account indicator has exceeded the current account deficit, resulting in an accumulation of gross foreign reserves of the CBA.

In 2005 indicators of all items of the current account are expected to grow. The current account deficit, as a result, will increase this year in absolute value by around USD 4.5 million to USD 148.2 million, with its share of GDP decreasing to 3.4% (including official transfers) against 4.0% in the previous year. It is anticipated that the trade balance deficit will also increase in absolute value, with its share of GDP decreasing to 12.0% against the previous year's 13.2%. The shares of balance of services and net factor income in GDP will trend relatively steady making up 2.1% and 1.5%, respectively, of the GDP. The share of transfers in GDP (including official transfers) will slightly decline to 9.2% of GDP against the previous year's 9.9%, although growth of the transfers in absolute value is expected too.

In 2005 the net inflow of funds on the capital and financial account, unlike the previous year, will increase. Such an inflow will come from FDI and the growing net inflow of public loans. In the same time, the positive balance of the capital and financial account will outstrip the adverse balance of the current account that will determine the creation of the balance of payments' (BoP) positive balance for 2005. In the outcome, the CBA's gross foreign reserves will increase.

Current Account

The export of goods (Credit) (see Annex 6.1) grew in 2004 by 4.8% and by 22.1% without account of "Precious and semiprecious stones, precious metals and articles". High growth of exports (excluding the

¹ The 2004 BoP indicators are the CBA estimations based on actual indicators of the three quarters of the 2004 BoP, published by the NSSA.

above item) occurred mostly due to "Non-precious metals and articles" (30%), "Ores and minerals" (97%), and "Finished food" (4%), which are bulky in total export. The unprecedented growth of ores and mineral products is a result of a worldwide rise in the prices of copper and molybdenum. A decline in the export of "Precious and semiprecious stones, precious metals and articles" by 14% in 2004 was due to existing structural problems in the sector. Particularly, rising prices on diamonds imported from Russia had a marked impact, determined by liberalized operations of the state-owned enterprise dealing with diamond sales.² Slowing productivity growth in the sector's enterprises connected with a sluggish installment of advanced technologies and equipment is another source of the decline.

Exports in 2005 are expected to increase by USD 91.4 million (12.5%) to USD 821.0 million. With a still low export commodity diversification, growth in 2005 will be bolstered by commodity groups having a large share in the structure of exports such as "Precious and semiprecious stones, precious metals and articles", "Non-precious metals and articles", "Ores and minerals", and "Finished food". The volume of "Precious and semiprecious stones, precious metals and articles" will increase in 2005 by USD 37.6 million (12.5%) due to new export contracts, an enlargement of production capacities and a growing demand worldwide for diamonds.

Increasing exports of "Non-precious metals and articles" and "Ores and minerals" is attributable to the measures for a strong re-equipping in the mining industry. To this end, increased productivity in the sphere will lead to growing export volumes that will be realized in 2005 and the coming years. The expected export growth of these two items in 2005 will be USD 16.0 million (13.7%) and USD 12.0 million (12.7%), respectively.

An increase in export volumes of "Finished food" will be determined by the creation of new enterprises and a strong presence in new markets. Exports in 2005 will grow by USD 9.3 million (12.4%). In this group, the item "Alcohol and non-alcohol drinks" prevails, and the export of these products will determine the main growth of exports of the entire group. Export diversification of the group is still low, with Russia remaining the principal partner and having a share between 70.0-86.0% in the export structure for the period 1997 to 2003. Exports of the group will benefit from economic developments occurring in Russia and the rising quality of domestic products.

The import of goods (Debit) (see Annex 6.1) grew in 2004 by 6.0% and by 13.9% without considering "Precious and semiprecious stones, precious metals and articles". The high growth rate of imports (excluding the above item) is a result of growing household income and a lower cost of importing, as determined by the depreciating US Dollar. Imports (without the above item) grew due to the increasing volumes of "Ores and minerals" (26.5%), "Vegetable produce" (31.6%), "Finished food" (17.5%), and "Transport" (24.1%) which enjoy a large share of total imports. The high growth of "Transport" (in which cars prevail) gave a

² While previously Armenian enterprises were importing unprocessed diamonds (under the quotas for Armenia) below market rates, sales of diamonds at present are carried out at high markets rates.

certain contribution to the increasing import of "Ore and minerals". This in turn was attributable to mounting consumer credit and continuous growth in household income.

Import of goods in 2005 will be USD 1345.6 million, up by USD 148.0 million (12.4%) as compared with the previous year, according to CBA estimations. Recent high economic activity, reflecting growing income and unprecedented growth in transfers in 2004 will have their impact on the growth of imports in 2005. Growing aggregate demand will result in more imports of consumer and investment goods and raw materials. Growth of consumer and investment goods by 16.4% and 31.9%, respectively, will surpass growth of raw materials (6.5%). Added imports of investment goods will be partially attributable to an expected considerable growth in FDI.

Growth in imports will be determined by a rise in the import of "Precious and semiprecious stones, precious metals and articles", "Ores and minerals", "Machinery and equipment", "Transport", and "Finished food". Imports of "Precious and semiprecious stones, precious metals and articles" will increase by USD 24.5 million (8.5%) due to a larger number of imported unprocessed diamonds, under various contracts, and further exports of the refined product. The item "Ore and minerals" will grow by USD 14.5 million (6.5%) attributable to the country's high economic activity and bulky import of vehicles in recent years. Continuing gasification in 2005, which will require added volumes of fuel and gas, will be another contribution to increasing imports.

A growth in the import of "Machinery and equipment" will depend on supplemented means of production and re-equipped, up-to-date machinery in the various enterprises. Contrary to a slight decline of 2% in 2004, the import of goods of this type will grow this year by USD 44.0 million (33.8%) to USD 174.0 million.

A growth in the import of "Finished food" and "Transport" in 2005 should be USD 21.0 million (19.3%) and USD 14.9 million (16.4%), respectively. As a result of rising living standards these items, "Finished food" in particular, are already showing positive shifts in the structure of imports by the country, as the importing of cheap, low quality goods is being substituted by the importing of relatively expensive, higher quality goods, mostly from European countries.³ It is expected that this trend will continue throughout 2005 and the years to come.

In 2005 external turnover is expected to grow by 12.4% (with a total volume of USD 2.17 billion) compared with the previous year's 5.5% (with a total volume of USD 1.93 billion).

Services balance deficit widened in 2004 by USD 3.2 million (4.6%). Despite a high growth rate of the export of services (17.9%), the growth rate of imports was high, too (14.6%).

An adverse scale of balance of services will grow in 2005 by USD 18.9 million (26.4%) to USD 90.4 million, according to CBA estimations. The export of services will maintain the previous year's growth trend amounting this year to USD 267.0 million, up by 9.2% against 2004. The

³ The statement is based on the analyses made by the CBA staff in 2004 (see, for example, the publication 'The Turkish Macroeconomic Situation 1994-2003').

growing export of goods will determine the added export of transport services dealing with the delivery of exports. As well, the previous year's growth trend of the export of IT and travel services will persist. Dynamic relations with the Diaspora, in the economic and cultural spheres, is an important determinant for the growth of travel services. The importing of services should increase by 13.1% to USD 357.3 million, and it will be attributable to a growing import of transport and travel services. The rise in the importing of goods will contribute to the growth of the importing of transport services, while rising household disposable income will boost growth of travel services.

The indicator of the item "Net factor income" dropped in 2004 by USD 47.2 million (50.6%) as some enterprises with foreign capital re-invested their large earned profits.

In 2005 the same indicator will rise by 41.8% to USD 65.4 million, due to reduced income paid on investments and an increase of foreign earned income of Armenian citizens working abroad. Also, continuing appreciation of the Russian Ruble vis-à-vis the US Dollar will result in a rise in income in Dollar terms.⁴

The year 2004 saw unprecedented growth of current transfers, USD 131.3 million (60.1%). Contribution to the growth came from private transfers, while official transfers declined somewhat by USD 4.8 million. This, naturally, along with the weakening of the US Dollar in international markets, created some extra tension in the foreign exchange market.

Current transfers are expected to grow in 2005 by USD 51.8 million to USD 401.5 million. Growth of both private and official transfers will trend up. The slowing rate of growth of private transfers is explained by the large amount of transfers received during 2004.

Capital and Financial Account

Net inflow of funds⁵ from the rest of the world increased in 2004 by USD 13.8 million (8.2%) to USD 181.1 million. While capital transfers considerably decreased by USD 75.5 million (83.9%) against the previous year's indicator because the Lincy projects had come to an end, direct investment⁶ and net inflow of public loans⁷ however grew by USD 66.7 million (113.2%) and USD 19.1 million (32.6%), respectively. Commercial bank net foreign assets (NFA) grew in 2004 by USD 27.5 million compared with the previous year's USD 42.4 million. In 2004 the private sector accumulated FX funds of USD 18.4 million, against the previous year's spending of USD 69.0 million, used in financing the current account

⁴ In the structure of non-commercial assets received through the banking system in January-September 2004, Russia's share constituted close to 70%.

⁵ In computing this indicator, an indicator of the line "Other private sector", which shows the change in stock of foreign currency, was subtracted from the total indicator of "Capital and Financial account".

⁶ In computing this indicator, the repayment of debt to Russia of USD 61.6 million in 2003 and USD 31 million in 2004, under the arrangement "property against debt" was subtracted from the indicator "FDI".

⁷ The repayment of debt to Russia of USD 61.6 million and USD 31 million under the arrangement "property against debt" is netted against the indicators of public debt repayment in 2003-2004.

deficit.⁸ As a result of such flows, the net inflow on "Capital and Financial account" declined against the previous year by USD 73.6 million (31.2%) to USD 162.7 million.

Inflow of funds of the capital and financial account will increase this year by USD 33.6 million (20.6%) to USD 196.3 million. Such growth will be contributed to mostly by FDI, which will increase in 2005 by USD 92.9 million (59.3%) to USD 249.5 million. A considerable increase of FDI is attributable to the privatization of a large state-owned enterprise active in the mining industry, and direct investment in several large privately-owned enterprises. Influx of direct investment will exceed the current account deficit. Capital transfers will retain the previous year's level, at USD 15.0 million.

In net volume public loans, as the next largest source for current account financing, will amount to USD 68.8 million (excluding CBA loans). These loans will finance 46.4% of the current account deficit. Plans include attracting external public loans of USD 87.9 million and repayment of USD 19.1 million on former loans.

In 2005 the private sector will continue to accumulate FX funds. With such a considerable influx of capital, FX deposits of households will increase. By beating banks' FX lending to the economy, such growth of FX deposits will result in a bank NFA increase by USD 0.8 million.

With the above BoP flows, in 2005 capital inflow will outstrip the current account deficit causing a stockpiling of gross international reserves of the CBA to USD 573.9 million. Further, FX funds received through the CBA will exceed the repayment (with interest payment) of external debt by the CBA in 2005. These FX funds, along with the customer service and conversion from privatization funds by the CBA, will result in a replenishment of gross international reserves of the CBA by USD 27.0 million. Under such conditions, the import coverage indicator will fall during the year to 4.0 months compared with the previous year's 4.3 months, connected with the expected surpassing growth of imports. The CBA NFA will increase this year by USD 48.1 million to USD 354.6 million (including the KfW loan assets).

External Debt

Plans for 2005 include attracting external public loans of USD 102.9 million, of which USD 87.9 million are loans to the Government and USD 15.0 million are the KfW's loans extended to the CBA by Government guarantee. External debt servicing (including servicing on the CBA loans and the Government-backed loans) will cost USD 65.7 million, of which USD 10.4 million represents interest payments and USD 55.3 million is payment on the principal. The prevailing part of the installment payment will be disbursed by IMF loans, the repayment of which will be USD 36.1 million.

In 2005 Armenia's external public debt under such flows (including government guarantees) will total USD 1177.6 million against USD 1130.0

⁸ The more the private sector accumulates FX funds, the less the current account deficit is financed. In the capital and financial account this is recorded in the line "Other private sector" by the minus sign, and where FX funds are spent to finance the current account deficit, the same line records the plus sign.

million in the previous year. The net present value of external debt in 2005 will be USD 716.9 million against the previous year's USD 693.5 million. In the structure of attracted loans in 2005, privileged loans will again prevail with a 98.1% share in total loans against 97.1% in 2004. Recent years have seen trends of essential improvements in the indicators of external debt, due to a slower growth rate of the external debt indicator, on the one hand, and high growth rates of the export of goods and services and GDP on the other. In 2005 the external debt/GDP ratio will be 26.7% compared with the previous year's 31.3%, and the external debt service/GDP ratio will be 1.5% compared with the previous year's 1.7%. Added exports of goods and services will positively reflect the external debt liquidity indicators as, in particular, the external debt service/export ratio will be 6.0% in 2005 compared with 6.3% in 2004. The unsustainable borrowings indicator⁹ will be 22.5%.

Real Effective Exchange Rate and External Trade Prices

With such trends in the BoP, the real effective exchange rate¹⁰ will appreciate in 2005 by 2.6% against 4.6% in 2004, according to CBA estimations.

Average inflation in Armenia in 2005 will be 2.2%, and the average weighted inflation in the partner countries will be 8.2%. The impact of the two indicators of inflation on the real effective exchange rate will cause depreciation. According to forecasts, high inflation will be recorded in Russia (8.5%) and Iran (15.4%), with their impact on Armenia's real effective exchange rate of 1.7 pp. each.

The Armenian Dram's nominal effective average exchange rate will rise (i.e. appreciate) in 2005 by 6.0%. The Armenian Dram appreciation, vis-à-vis US Dollar, will average 9.7% while appreciation of currencies of the partner countries will average 4.1%.

In the partner countries, the impact of appreciation of the Euro and Russian Ruble, vis-à-vis the US Dollar, will be felt more. The forecast indicators will be 8.8% and 4.1%, with 2.9 and 09 pp. impacts, respectively. But, in view of the forecasted depreciation of Iranian and Turkish currencies vis-à-vis the US Dollar (4.8% and 4.3%, respectively), the average weighted appreciation of the partner countries' currencies vis-à-vis the US Dollar will be less than appreciation of Armenian Dram. This will result in a rise of the Armenian Dram's real effective exchange rate in 2005.

An estimated 9.7% average appreciation of the Armenian Dram vis-à-vis the US Dollar, in nominal terms, for 2005 against 8.8% for 2004, is based on the 2004 Dollar/Dram exchange rate's behavior.¹¹ Presumably, the factors having had an impact on the exchange rate will also behave

⁹ This indicator has been computed as a sum of the growth rates of exported goods and services and gross reserves, and as a difference of the growth rate of external debt.

¹⁰ The method of computation and forecast of the real effective exchange rate is provided in Annex 6.2.

¹¹ US Dollar depreciation vis-à-vis Armenian Dram (December 2005 vis-à-vis December 2004) will be 2.4%.

similarly during 2005. In other words, a continued weakening of the US Dollar in the world financial markets in 2005 is expected. As well, dollar transfer inflows and dollar investment in real property and manufacturing will likely grow. Armenia's expected growing productivity, in comparison with that of partner countries, which could contribute to rising wages, will also affect exchange rate appreciation.

Armenia's terms of trade in 2005 will remain almost unchanged, just declining by 0.4% as determined by a slight increase in import prices in relation to export prices. In 2004 the terms of trade deteriorated by 3.0% due in large part to a price increase on wheat, at the end of 2003, and on oil throughout 2004. This was not fully balanced by a price rise of non-precious metals that hold a significant share in the structure of exports.

In 2005 export prices will increase in dollar terms by 4.0% and import prices by 4.4%.¹² In 2004 a rise in export prices in dollar terms was 4.0%, import prices was 9.3%. Export prices will continue upward mainly due to rising prices on raw materials, which will be 9.7%, since international prices on non-precious metals (copper, molybdenum, aluminum, zinc) will also rise.

Growth of import prices in dollar terms, apart from the growth of prices on raw materials (2.9%) and petroleum (9.8%), will be determined by rising prices on imported consumer goods (7.6%), reflecting high inflation and exchange rate appreciation vis-à-vis the US Dollar in partner countries.

¹² The method of forecast of export and import prices is provided in Annex 6.3.

INFLATION

In 2003 inflation of 8.6%, up by 5.6% from the program, which the CBA explained to have been a consequence of external shock, created high inflationary expectations. Under such conditions, the CBA had to conduct in 2004 a strictly efficient policy of stable prices. Otherwise, had inflation climbed higher than estimated for 2004, the picture would have been contrary to the stability achieved in prior years, and maintaining low inflation in the future would have been more costly reflecting, particularly, the curbed patterns of economic potential. For this reason the importance of maintaining target indicators was highlighted. In this field of expectations and facing certain risks of inflationary pressures, the Program and the ALSB for 2004 set a maximum 3% inflation, consistent with an average annual inflation of 7.7%. The latter is quite high an indicator which is determined by a general rise in the CPI. This rise was due, in part, to an increase in prices on bread and cereals in the last two months 2003. The CBA's monetary policy was set to minimize the average inflation even if the recorded indicator at the end of the period was close to the minimum threshold of the target range. By maintaining 2% inflation, the CBA succeeded in lowering the average inflation to 7%.

The external sector accounted for the largest part of the anticipated risks. These included depreciation of the US Dollar, a rise in oil prices which, however, found a later and lesser reflection in the local market as the Dram appreciated, a considerable increase in private transfers by 63% against 2003, thus having affected both the Dram appreciation and aggregate demand growth.

After the Dram appreciated vis-à-vis the US Dollar (by around 14.2% at the end of the period), the CBA faced the issue of maintaining either domestic or external purchasing power of currency. However, priority was given to the domestic purchasing power of currency, i.e. maintaining low inflation, as a primary objective of the CBA is price stability. If the CBA were to increase the Dram's liquidity, that much appreciation perhaps would have not occurred, but inflation would have markedly exceeded the program. Under such circumstance the CBA monetary policy would have contradicted its primary objective and the floating exchange rate regime. To achieve the inflation indicator, in Q3 the CBA injected liquidity by purchasing AMD 10.3 billion worth of foreign currency in the FX market, which did not, however, result in depreciation of the Dram vis-à-vis the US Dollar. In fact, there was a need to sufficiently increase the Dram's liquidity to prevent Dram appreciation, which would have led to high inflation.

In general, impulses of the private sector of the economy have resulted in growth of aggregate demand. The growth of transfers is reflected in the volumes of both consumption and investment. The impact of the considerable rise in consumption and investment determined 10% of the growth of the GDP, instead of the estimated 7%.

An increase of financial intermediation was a risk in the financial sector, which has been shown more vigorously than anticipated. A growth

of resident lending by 37.9%, against the previous year's 10.6%, resulted in a rise in both aggregate demand and FX supply making the inflation-exchange rate dilemma more problematic.

In the process of price-generation by supply factors, the following trends were observed:

- With the broadening of aggregate demand, the Dram appreciation somewhat curbed the rise of prices of imported consumer goods, the share of which, in the consumer basket in 2004, was 21.3%. However, annual inflation of 2% occurred due to a rise in prices of meat, fish, dairy, and fruit. With the Dram appreciation, slower growth of Dram prices of imported raw materials and petroleum (0.8%¹ and 10.4%², respectively) vis-à-vis US Dollar prices (9.4% and 31.4%³, respectively) also curbed the CPI growth, affecting prices of consumer goods indirectly.
- The growth of aggregate demand resulted in real wages surpassing the rise in productivity (9.6% and 20.6%, respectively) which exerted pressure on high inflation.
- The impact of developments in the fiscal sector on inflation was restrictive: the net indirect taxes/GDP ratio was 8% compared with 8.7% in 2003.
- The impact of the change in administrative prices on inflation was 0.29 pp. (estimated 0.3% at the beginning of the year), of which the impact of tariffs on water (growth by 85%) and gas (growth by 15.7%) was 0.19 and 0.1 pp., respectively. Besides the direct impact of these tariffs on the consumer basket, there has been an indirect impact as well - 0.5 and 0.1 pp., respectively.

In the outcome of these developments inflation in 2004 was 2% against December 2003. It behaved more smoothly than it had been set in the Program, by seasonal distribution. Inflation was 4.5% against 5.2% estimated for the first six months of the year, while in the second six months 2.5% deflation was recorded against 2.1% deflation. Relatively smoother dynamics of monthly inflation indicators also contributed to achieving an average inflation of 7%, lower than the estimate.

In general, under high inflation expectations, considerably broadened aggregate demand and impacts of the domestic and external sectors, the monetary policy in 2004 was conducted quite effective.

The inflation model developed by the CBA was also used as a basis for the monetary policy program set to maintain up to 3% estimated inflation for 2005. For observing price behavior, the model considered the factors of domestic demand (nominal money supply, budget deficit and private transfers), analysis of price-generation in enterprises (prices of raw materials imported, tariffs of electric energy, impact of wages and productivity) and import prices as a limit for prices of domestically competitive goods. Money supply, transfers, exchange rates, import unit

¹ The change of index of a unit imported was seen as a change in prices of the raw materials imported.

² According to the NSSA data.

³ According to the CBA computations.

costs, and international petroleum prices are considered as exogenous factors (Annex 9).

Inflation for 2005 was estimated using other economic and mathematic models developed by the CBA and applied previously (internationally practiced P-Star Model based on the quantitative theory of money, Annex 11, and the impact of change of terms of Armenia's foreign competitiveness on prices, Annex 10).

Changes in the ratio of net indirect taxes/GDP in the fiscal sector and administrative prices are also considered in forecasting inflation. There is no official information on administrative prices yet, whereas the above ratio will grow by 0.3 pp. to increase that much the inflation indicator.

In financial programming, the results of all the above models show that up to 3% inflation for 2005 (with the average annual inflation of 2.2%) is fully realistic, given the predicted macroeconomic environment and projected directions of the monetary policy.

In view of achieving the program inflation indicator for 2005, the risks anticipated from the macroeconomic environment have changed in relation to the previous year as follows:

High inflation expectations created in 2003 were reduced notably. However, although no risks are anticipated in relation to the goods that hold a considerable share in the consumer basket, the year will not be free of such risks. Although official statistics record no essential decline in unemployment, such a growth rate of real wages (26% in January-November 2004 against the average 14.4% in 2003) would not have occurred without reduced unemployment.

This seems to increase the risk level of excessive program indicators of inflation, due to fast growing wages in relation to productivity, in the event demand factors (transfers, capital inflow, budget expenditures from external sources of financing and TUA funds) outstrip expectations.

DIRECTIONS AND TRENDS OF THE 2004 MONETARY POLICY

Pursuant to the main directions of the monetary policy for 2004, which have been developed based on the strategy of monetary targeting, the monetary policy of the CBA in 2004 would maintain stable macroeconomic environment in the country, achieve a supply of money consistent with 7% economic growth, and up to 3% inflation. In view of the anticipated autonomous flows, the year 2004 would see an essential reduction in external financial flows in the budget revenue and deficit financing sources because of a lack of Lincy Foundation grants and the World Bank's structural adjustment credit.

Considering these factors, the CBA estimated the demand for money: increase of broad money by 12.3% at the end of the period and by 13.6% on average annually, and growth of the monetary base by 4.9% and 9.1%, respectively. With the fiscal policy's impact mostly neutral, the CBA would have a chance to use Dram instruments of liquidity injection in the second half of the year, in consideration of an increasing money supply.

The shaped macroeconomic environment and the events of the world economy and financial markets resulted in some unexpected developments in the monetary area which, in turn, affected the implementation of the monetary policy and monetary aggregates. As of the end of the period, broad money grew by 22.3% and by 18.7% on average while Dram broad money grew only by 9.2% and 6.1%, respectively. Such a difference in growth rates occurs because, in the structure of broad money, FX deposits grow by far at faster rates, by 39.7% (with the average annual growth of 9.6% over the last three years).

During the year, however, the opposite trend was seen in the behavior of Dram components of broad money. Dram deposits grew by 13.9% against the average annual 26% in the previous years, while currency in circulation grew by 7.1% against 11.5%.

To explain such abrupt change in trends, the period 2002 to 2004 will need to be viewed. An extensive increase in the money supply at the end of 2002, owing to receipt and disbursement of huge external funds (conversion at the CBA of the Lincy Foundation's loan and grant programs, SAC tranches and other grants), markedly affected the trends that were observed during that period. As a result, these flows reflected steep growth of the Dram components coupled, however, with notably slowed growth rates of FX deposits. In this situation, the CBA conducted a phased sterilization of sizable excess Dram liquidity in order not to exert pressures in the financial market and to maintain the achieved financial stability. This may serve as a broad explanation to slowed annual growth of Dram broad money during 2003-2004. At the same time, structural changes of monetary aggregates, since the beginning of the year, connected with a more rapidly reducing currency in circulation, found reflection in such a slowed annual growth. The main factors of influence included a reduced share of cash expenditures in the budgetary expenditures and the Government's fiscal policy as to absorption of cash

liquidity from the economy, given the over-performed plan of tax collection and the under-performed plan of expenditures.

In 2004 private transfers and other FX receipts (mostly due to growing tourism) already prevailed replacing the Government's external financial flows. By far the large growth of FX deposits and Dram appreciation are the natural results of such a development and can be considered one of the year's highlight.

These trends were seen starting at the beginning of the year, but the rates sped up and in the second half of the year the growth rates of private transfers and tourism accelerated and concentrated. During the year the Dram, at the end of the period, appreciated by 14%, about 10.6% of which occurred in the second half, while annual growth of FX deposits was 39.7%, of which 28.3% occurred in the second half. The worldwide depreciation of the US Dollar also contributed to such behavior of the Dram exchange rate.

With such limited external financial flows, unlike the previous years, in 2004 growth rates of NFA of the banking system considerably slowed down, 14.9% (82.9% in 2002 and 30.5% in 2003). Net domestic assets (NDA) of the banking system in 2004 increased by 59.2%, against a decrease of 29.3% in 2002 and by 27.7% in 2003.

The system's NFA were replenished as the CBA added to its net foreign assets AMD 15.1 billion through receipt of around a AMD 10.3 billion equivalent amount under the Poverty Reduction and Growth Facility program, and through FX purchase operations. While commercial banks added to theirs by AMD 13.9 billion, large-scale external FX resources were poured into the banking system.

These flows fuelled active lending to the economy. The lending indicator rose by 37.9%, compared with the average annual of 4.5% over the last two years. Unlike the previous year, in 2004 banks used the main part of attracted FX resources for lending purposes that determined the prevalence (68.5%) of FX loans in total loan investment. Growth rates of Dram loans this year sped up by 58.1% thanks to larger consumer loans, expressed in increased lending to households.

Given the accumulations in the TUA with the CBA, the indicator of Government liabilities to the banking system kept falling this year too (by AMD 1.3 billion), which was partially offset as banks added government securities to their portfolios.

Other items net of the banking system declined in 2004, by AMD 14.8 billion, which fully accounted for the respective indicator of commercial banks. This is evidence that banks operate with a profit.

With slowing growth rates of Dram components of monetary aggregates, the Dram-ization coefficient and Dram multiplier declined in 2004 by 8.3% and 1.2%, respectively. However, given the high growth rates of FX deposits and loans, one may see a definite rise in the degree of financial intermediation since, as a result, the monetization coefficient and money multiplier grew annually by 2.4% and 10.5%, respectively.

Determined by the same factors, the velocity of broad money declined during the year by 2.7%, whereas the velocity of Dram broad money increased by 8.9%.

Nevertheless, in view of increased excess liquidity and its persistently high level retained by the banking system during the year, the growth of bank intermediation was somewhat curbed this year too. Average annual excess liquidity in 2004 was AMD 4.7 billion compared with AMD 3.6 billion in the previous year. Excess liquidity grew sharply in the last days of December, to AMD 9.1 billion as of December 30, due to extensive expenditures by the Government, thus leading to a deviation from the expected level of the monetary base.

In such a macroeconomic situation, in view of regulating the money supply, the CBA followed the main directions of the annual monetary policy program while making no essential adjustments and prioritizing its main objective that has been consistent with the policy of the floating exchange rate. Particularly, a declining demand for money in the first half of the year, due to reduced currency, coupled with the high pace of the exchange rate appreciation in Q2, because of extensive growth of the FX supply, presumed a greater than planned injection of Dram liquidity. But, as the annual indicator of inflation was carrying the risk of beating the program by around 1 pp. by the end of the year (especially in respect of the items "Meat" and "Dairy"), the CBA managed the monetary base within the range and even below the threshold, in the first half.

Had the CBA attempted sterilizing such a large-scale FX inflow, it would have resulted in a sizable broadening of the monetary base, and a higher than expected indicator of inflation would have been likely. Not only was this undesirable to the CBA, but it could have created high inflation expectations that would have made the process of maintaining stable prices and low inflation difficult and costly.

In the end, the monetary policy implemented these considerations and the monetary base grew by 11.4% as of the end of the period, and annually by 7.0% on average. The annual pace of regulation of the money supply by the CBA, connected with the use of monetary instruments consistent with macroeconomic developments and trends in the financial market, varied essentially from period to period over six months. In the first half of the year, when currency began to slow at faster rates than estimated, and because basic liquidity accumulated on banks' correspondent accounts with the CBA, thus inducing a large excess of liquidity which persisted from the end of the previous year (AMD 5.4 billion in January compared with AMD 4.3 billion in past December), banks increasingly started to resort to the standing deposit facility at the CBA. Dynamic use of the facility continued throughout the period, and the gross volume of deposits amounted to around AMD 46.8 billion, the balance of which was netted at the end of June.

In the first half of the year, pursuing a reduction of Dram excess liquidity, the CBA embarked on using reverse repo operations (AMD 5.3 billion in gross) and FX swap instruments (AMD 8.9 billion in gross), which were repaid by the end of the period.

In April and May however, given the relatively lower excess liquidity, the CBA had a chance to add about AMD 5.9 billion by year's end to the Treasury Bills (T-bills) portfolio that was netted at the end of Q1.

Under the loan program of the KfW bank, the CBA implemented financing of AMD 3.3 billion during the year, of which AMD 2.7 billion alone was in Q1.

In Q2, given the large supply in the economy due to a huge FX inflow, and pressures in the FX market created by the influence of such an inflow, the CBA activated its instruments of FX purchase and FX swap to neutralize excess foreign currency. Over a period of six months these resources amounted to AMD 12.5 billion and AMD 5.9 billion, respectively. In the last day of December alone, with too high of a liquidity, banks deposited AMD 2.0 billion.

To handle Dram liquidity and seek a new mechanism to coordinate the policies of the CBA and the Government, in October the Treasury additionally issued and allocated T-bills of AMD 4.4 billion, with maturity up to the end of December, which was completely put in the CBA deposit account. A successful experiment of the mechanism was also pursuing an attempt to make it become, in the future, an instrument of Dram liquidity absorption, which is particularly necessary in 2005 in consideration of neutralizing the expected huge financial inflow.

In general, the monetary policy implemented by the CBA in 2004, with persisting problems and hardships during the process, has been consistent with economic growth rates. As was noted above, the average annual growth of Dram excess liquidity was over 30% which affected interest rates in the financial market. In all sectors of the market, trends kept heading downward, the most indicative of which was in the T-bills market, as has been in prior years as well, caused by a very high demand for the volumes offered by the Treasury. During the year, 9-12-month and medium-term (1-5 years) T-bills were allocated. Annual yield at the end of the year dropped by 4.7 and 7.2 pp. against the previous year's end to 5.0% and 7.2% in 2004, respectively. The Treasury issued and allocated for the first time long-term (7-10 years) T-bills with an average annual yield of 9.3%.

The trends of falling interest rates in the primary market for T-bills had an influence on the secondary market of T-bills and repo operations, thereby causing interest rates there to fall as well. Given this, and considering the need to inject liquidity, the CBA lowered interest rates during the year: repo operations to 3.75% from 7% at the beginning of the year, Lombard loans to 16% from 20%, and deposits to 1% from 3.5%.

Average monthly interest rates on loans to the economy and deposits dropped during the year by 2.5 and 1.1 pp. to 19.2% and 4.8% annually, respectively. In consideration of these trends, the bank reference rate was lowered during the year by 2 pp. to 16% by year's end.

MAIN OBJECTIVES AND DIRECTIONS OF THE 2005 MONETARY POLICY

In 2005 the CBA will direct the monetary policy to meet its primary goal, i.e. ensuring price stability in Armenia following the strategy of monetary targeting.

In 2005 the economy's demand for money will be met in view of an 8% economic growth and up to 3% inflation. Demand for money was estimated using the function of demand for real money (see Annex 8), and adjusted to offset the impact of the money supply's former short-term deviations from demand for money. The factor of interest rates is not included in the function, as in Armenia the link between interest rates and demand for money is not yet significant. The target level of demand for nominal money is estimated in regard to its linear homogeneity to prices.

Taking into account estimations of the function of demand for money, the growth of Dram broad money in 2005 is expected to be 17.9%, on average, and 15.5% at year's end. By quarters, the annual growth of Dram broad money will average 14%, 16%, 19% and 22%. A relatively high growth rate in the second half is forecast due to the fact that the main factors that stimulate growth of Dram broad money will appear, beginning in July.

In the structure of Dram broad money, both Dram deposits and currency in circulation will grow by 19.4% and 13.6%, respectively. Growth of Dram deposits will be attributable to:

- A high level of economic growth;
- Increased volume of lending to the economy;
- Strengthened confidence in the Dram that will be enhanced by appreciation of the Dram, which began in the second half of 2004;
- The new law on "Currency Regulation and Currency Control", beginning in July 2005, that will promote a widening of the area of the Dram's circulation;
- A new plan for insurance of deposits of individuals, beginning in July 2005, that will increase deposits of the middle class; and
- Continuous growth of gross national savings.

In 2004 the share of gross national savings of GDP was 18.6%, increasing by more than 29.6%. In 2005 it is expected to grow by about 16.6% to make up 19.3% of GDP.

These factors, together with extensive expenditures of the budget, and the CBA's decision to allow cash withdrawal from ATMs only in Drams, will lead to a faster growing rate of cash Dram in circulation.

FX deposits in 2005 will rise by 21.7% to amount to AMD 169.9 billion at year's end. The main factors determining growth include:

- Large volumes of external trade turnover - imports in nominal value will grow by around 12.4%, exports by 12.5%;
- Unprecedented large foreign investment - FDI during the year is expected to amount to USD 249.5 million, up 59% against the previous year; and

- Large-scale private transfers, part of which will be directed to the banking system.

So, as of the end of the year, growth of Dram broad money and broad money will be 15.5% and 18.5%, with their average growth of 17.9% and 26%, respectively. Such growth will outstrip nominal growth of the GDP, leading to an increased monetization of the economy. As a result, velocities of Dram broad money and broad money will slow by 4.7% and 10.9%, compared with the past five years' average slowing of 3.7% and 4.3%, respectively.

The banking system's structure of assets will reflect the paths of liquidity supply. The system's NFA will grow by 11.7% and NDA by 35.4%. NFA of the CBA accounts for the main portion of NFA growth. According to forecasts, these will grow by 15.7% and NFA of commercial banks by 0.9%. Modest growth of commercial bank NFAs (against 34.2% in 2004 and 122% in 2003) is explained by their expectation of making larger FX loan investments due to the FX deposits to be received from residents during 2005.

Growth of the banking system's NDA, by around AMD 28.9 billion (35.4%), will be attributable to the rise of Government liabilities by AMD 11.8 billion (73.8%), the growth of private sector lending by AMD 34.8 billion (26.5%) and the decline of the systems' other items net by AMD 17.6 billion (-40.9%).

Liabilities to the CBA constitute 74% of the growth of the Government's net liabilities, and the remainder is liabilities to banks. The growth of liabilities to banks will be determined by purchasing AMD 4 billion worth of T-bills by banks (with a planned total issue volume of AMD 6 billion).

Continuous growth of loan investments in 2005 is expected. Private sector lending will increase by 26.5%. Growth will be seen in the volume of consumer and trade loans as well as mortgage loans. Loan investment in industry, light and food industry in particular, will continue. Such a rise in lending is determined by the expected growth of deposits of 21.1% (around AMD 39.4 billion) and new loan programs under KfW bank (around AMD 7.3 billion).

Other items net (OIN) of the banking system will decrease generally due to commercial banks' OIN as the CBA's OIN will decline by only AMD 788 million (8.6%). An expected AMD 16.9 billion decrease of OIN of banks will be concurrent with an AMD 12.3 billion profit, payment of an AMD 2.7 billion worth of dividends during the year, and replenishment of paid-in capital of AMD 7.3 billion in the first half of 2005.

As a result of increased lending and a shrinking share of currency in broad money, Dram and money multipliers will rise by 3.8% and 10.9% to make up 2.42 and 1.18, respectively, at the end of 2005.

In view of the developments of the real sector of the economy, and the level and structure of the required liquidity, the CBA plans to increase the monetary base in 2005 by 8.9%, with an average annual growth of 13.6%. Currency in the structure of the monetary base will increase by 10.8%, and correspondent accounts by 1.3%. Despite the high growth rate

of deposits, which will result in an AMD 2.4 billion increase in required reserves, the level of correspondent accounts at year's end will not change significantly, since the required reserves will be paid in at the expense of excess liquidity. (At the end of 2004 excess liquidity in banks' correspondent accounts was close to AMD 10 billion). So, at the end of 2005 the monetary base will amount to AMD 143.8 billion, of which AMD 117 billion is currency, and AMD 26.9 billion is correspondent accounts.

As was noted, NFA of the CBA will grow by 15.7%, or AMD 23.4 billion, which will be determined by the flows in servicing Government operations (see Annex 2.6).

In the structure of NDA, net liabilities of the Government will grow considerably. The Government's liabilities to the CBA will grow in 2005 by 23.5%, or AMD 8.7 billion, because of budget expenditures paid out from the TUA.

OIN of the CBA will decrease by 8.6%. Here, several main flows - the difference between CBA income and expenses, including capital expenses, and the provision by the KfW of a EUR 3.5 million equivalent loan to the deposit guarantee fund - offset each other.

The CBA policy for 2005 will be reflected in the indicator of banks' liabilities to the CBA: the indicator will decrease almost two times, or by AMD 19.5 billion. Such a policy explains the CBA's need to absorb excess liquidity created by the Government's expansionary policy during the year. As the above indicator includes the injection of excess liquidity of around AMD 7.3 billion expected from the KfW for on-lending to Armenian banks via the CBA, the total absorption of excess liquidity by the CBA during the year will be around AMD 26.7 billion. In implementing the program, the CBA will use its all-Dram absorption instruments. Given that the CBA's government securities portfolio of AMD 5.8 billion is not sufficient to absorb excess liquidity through reverse repo operations, the CBA will carry on allocating additional volumes of T-bills, together with the Government, and attempt to deposit the receipts with the CBA. Also, considering the huge volumes of liquidity absorption, the CBA believes it possible to complete those operations of liquidity absorption by issuing its own securities.

In light of implementing the monetary policy, the process of continued growth of huge FX inflows, observable back in 2004, will be a highlight for 2005. Given the Armenian economy's and FX market's limited capacity to absorb such inflows, the CBA plans to use the set of indirect and direct instruments of the monetary policy in the following areas:

- Improvement of the reserve requirement system - addressing this issue is accomplished by reserving against the received deposits in the respective currency. In the meantime, a change in the ratio of the reserve requirement may be likely, and
- Implementation of operations to neutralize FX funds by purchasing foreign currency and using Dram instruments to absorb injected liquidity.

Further, the CBA will increase FX purchase operations and meet the growing demand for Dram in the event that businesses show an increased demand for Drams as a result of the CBA's remedies in reducing dollarization.

Plans also include the creation of a specific trade platform for FX operations that would enlarge the market's capacity for absorption of sizable FX flows, while reducing speculative pressures on exchange rates.

In 2005 the CBA plans to raise slightly the interest rates on all instruments, in consideration of the need to absorb liquidity. Another reason is that the CBA notably lowered these in 2004 in order to inject Dram liquidity.

RISKS IN IMPLEMENTING THE MONETARY POLICY PROGRAM

In implementing the monetary policy in 2005, the CBA will see the following potential risks emerge from different sectors of the economy.

Real Sector

In realizing the goals of the program, the potential concerns may come forward in the real sector as aggregate demand may surpass what has been anticipated. This may occur if autonomous financial inflow turns out to be larger than projected. Higher than expected aggregate demand may induce fast growing wages which, in turn, would exert serious pressure on inflation, thus causing it to be higher than projected.

Public Sector

The risk of impact from the fiscal sector may grow considerably given that the Armenian state budget would receive during 2005 a considerable amount of external resources (a tranche of PRSP, grants, and foreign currency proceeds from privatization of the Zangezour copper and molybdenum plant). Uncertain timing of receipt and disbursement of these resources, which has always been the case in prior years, would add to the risk.

Since the start of 2005 there have already been deviations between projected quarterly proportions (preliminary program) and the Treasury's unified account in the monthly programs of the state budget. The deviations were seen during all quarters of 2004 and, in all probability, will show throughout 2005. Under such conditions, program indicators of the monetary policy will be difficult to achieve.

External Sector

The previous year's developments in the sector showed that Armenia becomes increasingly sensitive to global economic developments as it integrates into the world economy. This is true particularly as Armenia's currency market responded to the weakening of the US Dollar in world markets, which was observed from the end of 2003 and continued throughout 2004. This created extra pressure on the USD/AMD exchange rate, pushing the Dram ever higher.

Risks in 2005 from the external sector may include US Dollar fluctuations in the world markets that would ultimately be reflected in USD/AMD exchange rate behavior.

The next most important risk is connected with financial inflow if it shows more dynamism than expected. Increased financial inflow will be caused by a higher than expected growth of exports, in general, and

private transfers, in particular. Though the monetary policy program for 2005 provided for a slowing of the growth of private transfers compared with the previous year, similar healthy growth of transfers is not ruled out. Increased transfers will push the demand up and exert extra pressure in the FX market. As a result faster appreciation of the Dram, than what is set forth in the Program, is likely to occur.

The other risk relates to uncertainties in international fuel markets and unstable political situations in several major oil producing countries. Though the 2005 program provides for an average slight rise in international oil prices, essential variance from the expectation is not ruled out given the above circumstances. This will both directly and indirectly affect consumer prices.

Financial Sector

The past year was momentous for the banking system due to its large scale lending to the economy as a result of a rehabilitating of the financial system and introduction of consumer lending and mortgage plans. According to CBA estimations, these trends will persist in 2005. However, given the expected large-scale financial inflow and direct investments throughout 2005, financial intermediation, in terms of both deposits and loans, is likely to increase beyond projections (excess of money and Dram multipliers from the program levels). Therefore, the CBA's management of the monetary base will be contemporaneous with higher than projected growth rates of broad money and Dram broad money, the adjustment of which will be restricted by managing the monetary base near the lower end of the range.

In case of serious deviations in the main macroeconomic indicators, where most risks would involve inflation exceeding the projected level, the program will need to be revised. In the event the demand for money increases as a result of an appreciation of the Dram, operation of the law on currency regulation, withdrawal of money from cash dispensers only in Drams, final stage introduction of the physical entity deposit insurance plan, and other measures by the CBA to reduce dollarization, the CBA too will revise the Program to enlarge the supply of money. In such circumstances, as the policy is to meet the demand for money, a slight rise in the program indicator of inflation is likely.

DEVELOPMENTS IN THE BANKING SYSTEM¹

Bank and Credit Organization Developments in 2004

During 2004 development trends in the banking system persisted and growth in the system was sustainable. Growth of quantitative indicators was concurrent with the development of qualitative features characterizing banking.

New banks were not added to the system during the year. As of the end of 2004, the system counted 20 commercial banks with 230 branches. Haykap Bank CJSC that was operating under special monitoring earlier in the year, graduated at the end of the year to operate under general monitoring as a result of the successful implementation of a rehabilitation program.

Credit organizations also reported growth consistent with the banking system. Still constituting a negligible portion of the financial system, credit organizations, however, have a faster growth potential, a potential that may be achieved in the years ahead. During the year licenses were granted to credit organizations such as First Mortgage Organization Ltd., Izmirlian Eurasia Ltd., and Cascade-Credit CJSC. As of the end of the year there were 9 credit organizations, with 2 branches, operating in Armenia.

Liabilities

Growth rates of liabilities² of the banking system in 2004 were considerably faster as compared with those of the previous year. Total liabilities grew by 28.4% (AMD 65.8 billion) compared with the previous year's 13%. Liabilities increased as a result of deposit growth, mostly from domestic sources.

Time deposits, vis-à-vis demand deposits, showed faster growth, 26% and 22%, respectively, whereas in the previous year growth of deposits was determined by an increase of demand deposits by 31% (growth of time deposits was 3%). Though time deposits grew faster in terms of percentage growth, demand deposit growth, in volume, however was AMD 24.1 billion against time deposits' AMD 18.9 billion.

One of the clear patterns of 2004 was that both demand and time liabilities have grown because of commercial deposits, contrary to the situation just a year before.

The considerable rise in economic activity was the main contributing factor to the growth of commercial deposits.

Growth of deposits in personal accounts is most likely caused by the sharp rise in the number of plastic (i.e. credit and debit cards) cards.

¹ The indicators on deposits and loans may not coincide with the indicators in other sections of the Program as this section includes funds of both residents and non-residents, whereas the others include funds of residents only.

² The analysis of the banking system was made by comparing general indicators of 19 banks operating under general monitoring as of 31/12/2003, with general indicators of 20 banks operating under general monitoring as of 02/01/2005. The 2004 general indicators are subject to final adjustment as annual adjusted indicators have not yet been received from banks.

In the first nine months of 2004, the number of plastic cards increased by 60%.

Liabilities³ of credit organizations grew in 2004 by 16.1% and amounted to AMD 1.5 billion, or 0.5% of the banking system liabilities. Borrowed funds from enterprises and individuals constituted, at the end of the year, 60% of total liabilities. Enterprises accounted for 61% and individuals accounted for 39% of borrowed funds, totaling AMD 925 million.

Capital

Unprecedented profit for the system was one of the highlights of the year. Total capital of the banking system increased by 30% (AMD 14.9 billion) to AMD 65 billion, which was mostly the result of the current year's profit. The system generated a profit of AMD 17.5 billion, of which AMD 6.9 billion was generated by Haykap Bank CJSC as the bank's liabilities were repaid by debtors. (However, given the loss of around AMD 6.5 billion incurred over past periods, the bank's return to general monitoring operations had a negligible contribution to the growth of total capital).

The growth rate of profit in 2004 exceeded growth rates of both assets and capital. As a result, in the reporting period the system's profitability by assets and by capital rose slightly. Ignoring the profit of Haykap, the system's profitability by assets was 3.3% compared with 3.1% in the year before; profitability by capital was 18.9% versus 18.4% in the previous year. Large profits in the banking system in 2004 were attributable to increased income from interest on loans extended to the economy (due to more loans, rather than a rise in interest rates) and reduced provisioning (due to improved loan quality).

Statutory capital of the system was increased by AMD 3.4 billion, mostly from external sources which pushed non-resident equity participation from 46.7% up to 52.6% of the statutory capital.

Total capital of credit organizations grew in 2004 by 27% to amount to AMD 2.8 billion, or 4.3% of the banking system's capital. Start-up capital of credit organizations opened during the year were the main contributors to the growth. Undistributed profit was AMD 256 million; profitability by assets was 6.4% and by capital it was 9.9%.

Assets

In 2004 total assets of the banking system grew by 29% (AMD 80.7 billion), 46% of which constituted loans extended to the economy. One of the highlights of 2004 was that a 38% rise in the number of loans extended to the economy considerably surpassed the 29% growth of total assets. While in 2003 loan investments grew due to increased lending to

³ The 2004 general indicators of credit organizations are subject to final adjustment as annual adjusted indicators have not yet been received from credit organizations.

individuals, in 2004 individuals and enterprises almost equally accounted for the rise in loans.

Trends in the growth of trade and consumer loans continued throughout 2004. The growth of loans in these areas at the end of November was 50% (AMD 10.5 billion) and 67% (AMD 15.5 billion), respectively. Lending to industry increased due to the growth of the food industry by 43% (AMD 4.5 billion). In the reporting year for the first time, the number of loans by branches was nearly identical.

The extensive growth of loan investments was accompanied by a declining share of poor quality loans. In 2003 classified loans comprised 5% of total loans; in 2004 they shrank to 3%. Operation of a Credit Registry, which supplies information to banks about potential borrowers, contributed sufficiently to raising the quality of loans.

Total assets of credit organizations grew in 2004 by 23% to amount to AMD 4.4 billion, or 1.2% of the banking system's assets. Increased loan investments (including leasing and factoring) and claims on banks were the main contributors to such growth. Loan investment increased by 20% (AMD 491 million) to AMD 2.9 billion, or 67% of total assets, of which 38% were consumer loans and 22% were food industry loans.

The sustainable growth of generalized indicators of the banking system reveals that at the end of 2004 total assets amounted to AMD 363 billion, total liabilities AMD 298 billion, and total capital AMD 65 billion.

The growth of the banking system's total assets in 2004 exceeded nominal GDP by 13 pp. However, the ratio of total assets to GDP is still relatively small at 19.4%, while the system's lending to the economy comprises 7.3% of GDP. In 2003 these indicators were 17.4% and 6.2%, respectively.

The Forecast of Banking System Developments for 2005

It is estimated that in 2005 the banking system will see considerable growth which will be supported by new normative requirements for minimum capital, improvements in the business climate and the final introduction of a deposit insurance system.

Capital

Total capital of the banking system is forecast to grow in 2005 by nearly AMD 17 billion.⁴

⁴ The forecast made for this section was based on:

- Strategic programs submitted by banks, and expert assessment made by summarizing and analyzing these programs;
- Recent trends observed in the banking system;
- Typical features of the banking system in 2004, and the likelihood of a persistence of these features and emergence of the new ones in 2005; and
- The impact of anticipated developments in real and financial sectors on generalized indicators of the banking system in 2005.

Assessment of the past trends of growth in bank income, the sources of income of individual banks, the customer base, and the size of the expected profit from banks' strategic programs suggests that the size of the undistributed profit forecast for 2005 will be AMD 12.4 billion, which is almost AMD 1.8 billion more than the 2004 indicator (without considering Haykap bank's data). The forecast was based on an analysis of the trends in the loan market, trends in interest rates and an increasing amount of transfers.

Considering a USD 5.0 million equivalent minimum total capital requirement, effective July 1 2005, it is estimated that the system's statutory capital will increase during 2005 by AMD 4.3 billion as certain banks will pursue compliance with the new requirement. Another AMD 3 billion will be added to the statutory capital due to a new entrant to the system. Banks plan to replenish the statutory capital mainly from external sources. It is anticipated that only a few banks will pay dividends from the profit of prior years, at about AMD 2.7 billion.

Liabilities

Total liabilities of the banking system are forecast to grow in 2005 by AMD 51 billion, to nearly AMD 348 billion at year's end.

Growth will be determined by deposits that are forecast to increase by about AMD 41 billion. The main factors in evaluating the deposit growth included the historic behavior of deposits/total liabilities ratio, and the sharp rise in the number of plastic cards in circulation. An individual deposit insurance plan that will begin operating in July 2005 will encourage a rise in savings and the use of the banking system by the middle class.

Assets

The forecast for total assets of the banking system indicates that in 2005 they will grow by AMD 68 billion, to nearly AMD 430 billion by the end of the year.

The forecast showing growth in the system's total assets was made based on an expected rise in liabilities and capital. Further, according to the forecast, only about 52% (AMD 35 billion) of added resources will induce growth of loan investments, as determined by both strategic programs and adherence to liquidity and capital adequacy standards.

The CBA's Measures in 2005

The CBA is planning several measures in 2005 to enhance a healthy competitive environment for banking, improve the system's liquidity and stability, and raise financial intermediation.

The role of management in the banking system is extremely important. Underdeveloped management technologies pose a threat to effective management of banking risks that may complicate existing problems and make their resolution more difficult. To that effect, the "Concept of

Corporate Governance at Banks", developed by the CBA in 2004, aims at spelling out the competencies of different areas of corporate governance of banks and defining scopes of responsibility. The final version of the concept, formulated through discussions with the Union of Banks of Armenia, has as its plan, the submission of a draft law to the Government for review. Input of corporate governance is being called on to contribute to increased investment attractiveness, integration with the international banking community, outlining and defending customer interests, new banking technologies, and minimizing banking risks through effective management.

To make sure the requisite legal mechanisms for a stable economy are in place, as well as protecting the public's safety and protecting national interests, the CBA will carry on in 2005 implementing measures against money laundering. To this effect, in 2004 the CBA drafted, and the National Assembly of Armenia ratified, the Armenian Law on Legalization of Criminal Proceeds and Combating Terrorism Financing.

In 2005 the CBA will continue exercising banking supervision by further implementing it in accordance with the requirements of the Basle Principles. The CBA decided to turn to the Basle II Accord and implement it in Armenia. The principles of corporate management are a precondition, and the CBA will discuss the requirements and schedule the implementation of the Basle II Accord only after such principles are adopted.

In 2005 the CBA is planning to seek out and implement new ways of cooperating between the CBA and other supervisory bodies in order to create a consolidated system of effective supervision for identifying, and rapidly responding to, potential risks in "banking groups".

In 2005 however, the CBA is possibly planning to avoid making any changes in the regulatory framework of banking.

The CBA will continue examinations at exchange offices with the purpose of raising the quality of service to households and to make sure that that part of the financial sector is adequately transparent.

Since 2001 the CBA has been exercising a risk-based supervisory role of financial organizations, and based on this it has developed and adopted the "Manual for Examinations at Banks" and the "Manual for Implementation of Off-Site Supervision of Banks". In 2005 the CBA will draft an internal regulation "Guideline on Licensing" to make the process of bank licensing more effective and transparent, and to make sure that the risk-based supervision principles are in place.

Developing a mortgage market in Armenia is one of the most important medium-term objectives of the CBA. In cooperation with the Government and the German KfW bank, the CBA will work toward the development of the market in two main directions:

1. Developing and introducing the legislative and sub-legislative framework, and
2. Creating a secondary market.

An assessment of financial intermediation in the banking system shows that currently Armenia's commercial banks are not interested in

offering new products to the banking market, but rather are interested in keeping financial intermediation of the system from growing. The CBA's plans for 2005 include identifying and reviewing the factors that hinder input of new products. The CBA will invite banks to open discussions to address these and other issues that would enhance the cooperation between the CBA and banks.

Many central banks in the world recently began assessing financial stability, not only by evaluating financial risks, but also through a complex evaluation of all types of risks that pose a threat to financial stability. This is why in 2004 the CBA developed the "Concept of Financial System Stability Framework in Armenia". The concept is set to provide an overall description of financial stability, identification and evaluation of potential risks in macro- and micro-environment, and steps to minimize such risks in the near future. Provisions of the concept will be fully implemented between 2007 and 2008. In this context, in 2005, the CBA will take steps in the two directions, by developing:

- a. Methods of forecasting that would enable the industry to predict behavior of the financial system, and
- b. Methods for risk evaluation.

The CBA has developed methodologies for assessing foreign currency, interest rates and liquidity risks. These methodologies are now used to evaluate such risks at banks. In the meantime, stress-tests are used to assess the impact of different probable scenarios on banks' financial indicators. In 2005 a new methodology is planned to be developed for evaluating credit risk which seems to be the most urgent of the financial risks. The methodology will allow forecasting through the estimated likelihood of changes in the various credit categories of portfolios in the coming months, by using historical data of loan investment categories of individual banks.

The forecast and evaluation of risk levels will be vital in predicting and responding to the financial sector's developments, and in programming the monetary policy.

DEVELOPMENTS IN PAYMENTS AND SETTLEMENTS

The payments and settlements sector in 2004 was significant as banks were actively servicing customers and inter-bank payments were improved.

In 2004, previous growth trends of non-cash payments continued. The value of payments during the year was AMD 3,516.3 billion, and the number of payments was 1.6 million. The number of plastic cards increased nearly 1.78 times and the volume of card servicing increased by almost 1.65 times. The infrastructure of plastic card servicing developed robustly (as of the year's end the number of ATMs was 71, POS-terminals and imprinters - 685). Banks in Armenia began offering several new products connected with plastic card service such as: consumer lending, payments (including electronically) for utilities and other services.

In 2004, a working paper entitled "Payment System Oversight" was drafted which set the following main objectives:

- a. Guaranteeing stability (safety) of the payment systems in Armenia through limiting (or preventing) risks;
- b. Raising the effectiveness of operation of the payment systems;
- c. Raising public confidence in non-cash payments; and
- d. Contributing to the improvement of the payment system, installation of new payment instruments, and services.

Considering the growing trends for introduction of new banking technologies and instruments, and considering that people and businesses in Armenia have begun to use banking services more frequently, the CBA developed a paper "Fraud through Payment and Settlement Instruments and Services". The paper is targeted toward financial organizations and law enforcement agencies and describes the main types of fraud and the various measures to prevent and identify such. Also, several seminars were organized for representatives of these institutions.

In 2004 the CBA introduced the automated Government Securities Accounting and Settlements (Book Entry) System, which performs the following functions:

- a. Accounting of issued government securities' global certificates;
- b. Maintaining depo (securities) accounts of system participants while ensuring the registration, transfer, and limitation of rights arising from the operation on government securities;
- c. Organizing auctions of government securities;
- d. Cash and securities settlements of government securities, repo and reverse repo transactions using the "DVP" principle;
- e. Cash and securities settlements of loan provision/repayment by pledging government securities using the "pledge against loan" and "removal of collateral against repayment of loan" principle; and
- f. Redemption (partial redemption) of government securities, calculation of coupon yields and payments to system participants.

The system meets the international criteria for securities accounting, safety, reliability and speed. It allows the electronic exchange of financial and information documents. It also allows the performance of government securities transactions in just a few minutes, thereby ensuring simultaneous settlements of government securities and money, which rules out the risk of a partner's failure to perform the obligation.

The CBA's policy in the payments and settlements area in 2005 is:

1. Building and regulating the sub-legislative and legal framework in connection with adopting the Armenian Law on Payments and Settlements Systems and Payment Service Organizations;
2. Oversight of the payment system; and
3. Regulating non-cash payments by plastic cards in Armenia.

During 2005 the CBA will carry on regulating the payments and settlements area. The above law, adopted by the National Assembly in 2004, enables the regulating of payments and settlements operations, activities of organizations providing payment and settlement services, control over their activities, and payment finality rules. Since the National Assembly ratified the Armenian Law on Electronic Document and Electronic Signature, plans for 2005 include developing a legal framework to regulate the operation of payment instruments and systems, with consideration given to provisions on electronic document circulation.

In 2005 the CBA intends to issue new types of securities. Circulation of these securities will require designing new modules in the Government Securities Accounting and Settlements System. Work for improvement of the system is on the agenda.

In view of identifying and managing risks in the financial systems, and taking into account development trends in the payments and settlements system, in 2005 the CBA will continue with its efforts to develop the principles and procedures of payment system oversight.

To encourage non-cash circulation and the retail payments market development, the CBA is planning measures in three main directions:

1. Regulation and licensing of activities of organizations providing payments and settlements services;
2. Introducing smart technologies in plastic cards (e.g. development of e-commerce in Armenia); and
3. Regulation of operations by plastic cards in Armenia.

Special attention will be paid to identifying and, where possible, rectifying or minimizing impediments to implementing non-cash operations. Work is intended to be carried out in cooperation with representatives of the banking system, government agencies and concerned organizations.

The CBA will continue improving the effectiveness of its internal automated systems.

Commentary for the Main Indicators

1. There are data discrepancies in the actual nominal GDP and its expenditure components, real growth rates and deflators among the monetary policy programs for 2005 and 2004, and other publications of the CBA. During 2004 the National Statistics Service of Armenia (NSSA) revised these indicators and published them in "Socio-economic situation in Armenia", in the March April, 2004 issues. The CBA used the revised data in preparing the program for 2005.
2. The above-mentioned indicators for 2003 are still subject to revision and the 2004 indicators are the CBA estimations based on the official data as reported between January and -September, and between January and -December, 2004.
3. The 2004 external and fiscal sectors indicators used in the monetary policy program for 2005 and the 2003 external and fiscal sectors indicators used in the monetary policy program for 2004 are the preliminary data of the NSSA and MoFE, and the CBA estimations.
4. The aggregate and private sector disposable income indicators are calculated by the CBA.
5. The figures used in the section Development of the Banking System are not compatible with those provided in other sections and annexes of the Program due to different classifications and groupings.

Macroeconomic Indicator Survey

	2002	2003	2004	2005
National income and prices (interest change)				
Real GDP index	113.2	113.9	110.1	108.0
GDP deflator	100.7	104.6	106.0	104.0
Consumer price index (period end)	102.0	108.6	102.0	103.0
Inflation (period average, against the same period in the previous year), %	1.1	4.7	7.0	2.2
External sector				
Export of goods and services (share of GDP)	29.4	32.2	27.4	24.8
Import of goods and services (share of GDP)	46.6	50.1	42.6	41.4
Current account (excluding official transfers, share of GDP)	-8.5	-8.9	-5.6	-4.7
Current account (including official transfers, share of GDP)	-6.2	-6.8	-4.0	-3.4
Import coverage (by months)	4.7	4.3	4.3	4.0
Exchange rate (period average)	573.4	578.8	533.4	485.0
Exchange rate percentage change	3.3	0.9	-7.8	-9.1
Public sector				
Consolidated budget revenue (share of GDP)	19.7	18.5	19.1	19.7
Consolidated budget tax revenue (share of GDP)	17.5	17.0	17.2	17.9
Consolidated budget expenditure (share of GDP)	22.3	20.2	20.9	22.1
Consolidated budget deficit (share of GDP)	-2.3	-1.4	-1.7	-2.3
Capital investments and net credit (share of GDP)	4.1	4.2	4.3	5.0
Monetary sector				
Broad money growth (%) (M2X average)	6.8	22.9	18.7	26.0
Broad money velocity (GDP/M2X average)	8.3	8.1	7.9	7.1
Money multiplier (M2X)	2.0	2.0	2.2	2.4
Narrow money growth (%) (M2 average)				
Narrow money velocity (GDP/M2 average)	21.4	33.3	6.1	17.9
Narrow money multiplier (M2)	15.5	13.8	15.2	14.5
Broad money growth (%) (M2X average)	1.08	1.15	1.14	1.18
Monetary base, % (average)	17.8	25.1	7.0	13.6

GDP Expenditure Component Deflators and Real Growth

	2002	2003	2004	2005
Inflation (against previous December)	2.0	8.6	2.0	3.0
Inflation (12-month)	2.0	8.6	2.0	3.0
Inflation (average, against the same period in the previous year), %	1.1	4.7	7.0	2.2
Deflators				
GDP deflator	100.7	104.6	106.0	104.0
Consumption deflator	101.2	104.1	105.8	103.1
Public	100.4	107.4	105.8	103.1
Private	101.3	103.7	105.8	103.1
Capital investments deflator	103.7	102.1	102.6	103.5
Public	103.7	102.1	102.6	103.5
Private	103.7	102.1	102.6	103.5
Export deflator*	105.7	103.8	97.8	94.5
Import deflator*	107.3	103.1	100.8	101.3
Exchange rate (AMD/USD)				
Period average	573.4	578.8	533.4	485.0
Interest change (cumulative)	3.3	0.9	-7.8	-9.1
Percentage change index				
Real GDP	113.2	113.9	110.1	108.0
Consumption	108.3	109.0	108.3	107.5
Public	100.6	114.0	102.6	120.4
Private	109.0	108.4	108.8	106.0
Capital investments	122.2	132.9	108.8	115.8
Public	183.9	117.5	73.2	130.5
Private	108.8	138.6	119.8	113.1
Export of goods and services	126.3	125.9	101.6	107.4
Import of goods and services	109.0	124.4	98.5	107.8

* According to CBA computations.

GDP by Expenditure Components

	2002	2003	2004	2005
<i>Current market prices (mln drams)</i>				
Nominal GDP	1362472	1623336	1893628	2126941
Consumption	1349824	1531547	1751998	1942183
Public	136072	166602	180824	224580
Private	1213753	1364945	1571174	1717603
Capital investments	295208	400607	447794	536886
Public	77699	93195	69974	94511
Private	217509	307412	377820	442375
Export of goods and services	399979	522909	519562	527616
Import of goods and services	634737	813767	807377	881465
Statistical discrepancy	-47803	-17959	-18349	1722
Net factor income	50515	54029	24615	31734
Net transfers	99391	126449	186568	194744
Private	68031	91615	157049	165679
Official	31360	34834	29518	29065
Gross national disposable income	1512378	1803814	2104810	2353419
Public sector disposable income	1341631	1609273	1876113	2072795
<i>Percentage change index</i>				
Nominal GDP	115.9	119.1	116.7	112.3
Consumption	109.5	113.5	114.4	110.9
Public	102.5	122.4	108.5	124.2
Private	110.3	112.5	115.1	109.3
Capital investments	127.1	135.7	111.8	119.9
Public	190.3	119.9	75.1	135.1
Private	113.6	141.3	122.9	117.1
Export of goods and services	133.5	130.7	99.4	101.6
Import of goods and services	116.9	128.2	99.2	109.2

Balance of Payments

(mln US dollars)

	2002	2003	2004	2005
Current account (including official transfers)	-148.0	-190.6	-143.7	-148.2
Current account (excluding official transfers)	-202.7	-250.8	-199.0	-208.1
Trade balance	-368.8	-434.1	-468.1	-524.7
Export	513.8	696.1	729.6	820.9
Export (excluding precious, semi-precious stones, metals)	257.5	346.7	423.2	483.9
Import	-882.5	1130.2	1197.7	1345.6
Import (excluding precious, semi-precious stones, metals)	-669.1	-800.6	-912.1	1036.1
Services (net)	-40.7	-68.3	-71.5	-90.4
Credit	183.8	207.4	244.5	266.9
Debit	-224.5	-275.7	-316.0	-357.3
Income (net)	88.1	93.4	46.1	65.4
Private transfers (net)	118.7	158.3	294.4	341.6
Official transfers (net)	54.7	60.2	55.3	59.9
Capital and financial account	221.8	236.3	162.7	196.3
Capital transfers	68.1	89.9	14.4	15.0
Foreign direct investments	110.7	120.5	156.6	249.5
Portfolio investments	1.5	0.3	-4.7	0.0
Public sector (net)	56.1	-3.1	48.9	68.8
Disbursements	97.0	92.3	96.2	87.9
Amortization	-40.9	-95.5	-49.7	-19.1
Other capital	-14.7	28.7	-65.8	-137.0
Privatization account	-6.8	2.2	-19.9	-62.0
Net foreign assets of banks	-31.5	-42.4	-27.5	-0.8
Other private sector	23.6	69.0	-18.4	-74.2
Overall balance	73.8	45.7	19.0	48.1
Change in gross international reserves (-growth)	-81.7	-46.3	-25.5	-27.0
Change in gross international liabilities (+growth)	12.1	2.1	-1.1	-21.2
International Monetary Fund (net)	7.5	1.6	-6.4	-36.1
Purchase/Disbursement	25.1	27.1	28.2	0.0
Repurchase/repayment	-17.7	-25.5	-34.6	-36.1
Other (net)	4.6	0.6	5.3	15.0
Financial gap	4.1	1.6	-7.6	0.0
Error and omission	-4.1	-1.5	7.3	0.0
Vertical review	0.0	0.1	-0.3	0.0
Trade balance/GDP	-15.5	-15.5	-13.2	-12.0
Current account (excluding official transfers)/GDP	-6.2	-6.8	-4.0	-3.4
Exchange rate (AMD/USD) Period average	573.4	578.8	533.4	485.0

Export and Import Prices

	2002	2003	2004	2005
Export				
Total	102.3	102.9	106.1	104.0
Investment commodities	100.1	100.0	100.0	100.0
Consumer goods	101.7	100.3	102.9	103.0
Diamond	96.9	100.0	100.0	100.0
Intermediate consumer goods	102.6	108.9	117.6	109.7
Exports, total (in drams)	105.7	103.8	97.8	94.5
Import				
Total	103.9	102.1	109.3	104.4
Investment commodities	93.6	100.0	100.0	100.0
Consumer goods	105.7	110.7	109.5	107.6
Intermediate consumer goods	98.4	102.9	109.4	102.9
Oil products	99.0	107.6	131.4	109.8
Diamonds	112.9	100.0	100.0	100.0
Natural gas	94.8	100.0	100.0	100.0
Imports, total (in dram)	107.3	103.1	100.8	101.3
Exchange rate (period average)	573.4	578.8	533.4	485.0

Cash Flows of CBA Foreign Assets and Liabilities

(mln US dollars)

	2002	2003	2004	2005
Interest on Government loans	-7.0	-7.0	-8.1	-9.4
Interest on Russian loans	-9.9	-2.6	0.0	0.0
Interest on CBA loans	-1.5	-0.9	-1.4	-1.0
IMF	-1.5	-0.8	-1.3	-1.0
KfW loans	-0.1	-0.1	-0.1	0.0
Income on international reserves management	9.7	8.4	10.3	12.2
Interest on Georgian loans	1.1	0.7	0.5	0.4
Repayment of Georgian loans	0.0	0.0	0.0	4.0
Loans to Government	14.2	34.8	3.9	7.6
Multilateral (excluding IMF loan, net)	26.6	36.5	5.6	7.7
Disbursement	35.1	42.8	21.2	20.0
SAC	35.1	42.8	21.2	20.0
Amortization	-8.5	-6.3	-15.6	-12.3
Bilateral	-12.4	-1.7	-1.7	0.0
Disbursement	0.3	0.0	0.0	4.7
KfW	0.3	0.0	0.0	4.7
Amortization	-12.6	-1.7	-1.7	-4.7
Loans to CBA	12.1	1.1	-1.2	-21.2
IMF loans	7.5	1.6	-6.4	-36.1
Disbursement	25.1	27.1	28.2	0.0
Amortization	-17.7	-25.5	-34.6	-36.1
KfW	4.6	0.0	5.6	15.0
Disbursement	4.6	0.0	5.6	15.0
Amortization	0.0	0.0	0.0	0.0
Other	0.0	-0.5	-0.3	0.0
Lincy grants	50.1	45.6	2.8	0.0
Other grants	26.4	17.1	18.6	26.3
Conversion from privatization funds	8.8	3.7	0.2	25.0
Other conversions*	-22.2	-54.5	0.0	-17.0
Change in gross international reserves	81.7	46.3	25.5	27.0
Change in gross foreign liabilities	12.1	1.1	-1.2	-21.2
Change in net foreign assets	69.6	45.1	26.7	48.1
Memorandum items				
Privatization funds	10.4	8.2	28.0	90.0
Credit	15.6	1.5	19.9	87.0
Debit	-8.8	-3.7	-0.2	-25.0
Gross international reserves (by program exchange rate)	431.3	502.0	547.0	573.9
Gross international reserves	431.3	502.0	547.0	573.9
Gross international liabilities	207.7	230.2	240.5	219.3
Net foreign assets (including KfW)	223.6	271.7	306.5	354.6

* Includes CBA interventions in the inter-bank market, swap operations, and conversions for Government and other customers (membership fees, etc).

Broad Money

(mln drams)

	2002	2003	2004					2005				
			QI	QII	QIII	QIV	2004	QI	QII	QIII	QIV	2005
Net foreign assets (NFA)***	148902	194389	189098	179895	192832	223420	203404	203953	206151	209953	227300	227300
Central Bank***	130616	153802	145491	139660	145081	168907	148925	147540	147826	153309	172314	172314
Commercial banks	18286	40587	43607	40235	47751	54479	54479	56414	58325	56645	54986	54986
Net domestic assets (NDA)***	53686	38809	36805	52107	59943	61752	81768	79624	92104	106930	110678	110678
Domestic credit	93437	87651	90778	105462	116128	125046	125046	125745	146996	164173	171645	171645
Public sector	9085	-5988	-8196	-4582	-4600	-6261	-6261	-9770	-4327	4297	5497	5497
Government	963	-14606	-17866	-14252	-14270	-15931	-15931	-19440	-13997	-5373	-4173	-4173
Public organizations	8122	8617	9670	9670	9670	9670	9670	9670	9670	9670	9670	9670
Private sector	84352	93640	98974	110044	120728	131309	131309	135515	151323	159876	166148	166148
Other items net***	-39751	-48842	-53973	-53355	-56185	-63294	-43278	-46121	-54892	-57243	-60967	-60967
Broad money (M2X, period end)	202588	233198	225903	232002	252775	285172	285172	283577	298255	316883	337978	337978
Currency in circulation	88556	91997	79535	82253	86345	98569	98569	90299	94877	100445	111970	111970
Dram deposits	35341	41233	40085	40918	39620	46969	46969	47994	50524	54054	56074	56074
FX deposits	78691	99968	106283	108831	126810	139634	139634	145284	152854	162384	169934	169934
Dram broad money (M2, period end)	123897	133230	119620	123171	125965	145538	145538	138293	145401	154499	168044	168044
Note:												
Broad money (M2X average)	163517	201005	222523	227400	242871	261813	238652	279173	289799	305563	328347	300720
Dram broad money (M2 average)	88143	117458	120428	121707	123942	132411	124622	136714	140730	147944	162188	146894
Broad money velocity (GDP/M2X, average)*	8.33	8.08	0.97	1.69	2.65	2.48	7.93	0.86	1.48	2.38	2.23	7.07
Dram broad money velocity (GDP/M2, average)*	15.46	13.82	1.79	3.17	5.18	4.91	15.19	1.75	3.05	4.92	4.51	14.48
Money multiplier (M2X)**	2.00	1.96	2.12	2.20	2.18	2.22	2.18	2.33	2.42	2.43	2.48	2.42
Dram multiplier (M2)**	1.08	1.15	1.15	1.17	1.11	1.12	1.14	1.14	1.17	1.18	1.23	1.18

Broad Money

(percentage change)

	2002	2003	2004					2005				
			QI	QII	QIII	QIV	2004	QI	QII	QIII	QIV	2005
Net foreign assets (NFA)	82.9	30.5	-2.7	-4.9	7.2	15.9	4.6	0.3	1.1	1.8	8.3	11.7
Central Bank	53.8	17.8	-5.4	-4.0	3.9	16.4	-3.2	-0.9	0.2	3.7	12.4	15.7
Commercial banks	-623.0	122.0	7.4	-7.7	18.7	14.1	34.2	3.6	3.4	-2.9	-2.9	0.9
Net domestic assets (NDA)	-29.3	-27.7	-5.2	41.6	15.0	3.0	110.7	-2.6	15.7	16.1	3.5	35.4
Domestic credit	-9.3	-6.2	3.6	16.2	10.1	7.7	42.7	0.6	16.9	11.7	4.6	37.3
Public sector	-54.7	-165.9	-36.9	44.1	-0.4	-36.1	-4.6	-56.0	55.7	199.3	27.9	187.8
Government	-89.8	1616.7	-22.3	20.2	-0.1	-11.6	-9.1	-22.0	28.0	61.6	22.3	73.8
Public organizations	-23.8	6.1	12.2	0.0	0.0	0.0	12.2	0.0	0.0	0.0	0.0	0.0
Private sector	1.7	11.0	5.7	11.2	9.7	8.8	40.2	3.2	11.7	5.7	3.9	26.5
Other items net	-46.8	-22.9	-10.5	1.1	-5.3	-12.7	11.4	-6.6	-19.0	-4.3	-6.5	-40.9
Broad money (M2X, period end)	28.8	15.1	-3.1	2.7	9.0	12.8	22.3	-0.6	5.2	6.2	6.7	18.5
Currency in circulation	36.2	3.9	-13.5	3.4	5.0	14.2	7.1	-8.4	5.1	5.9	11.5	13.6
Dram deposits	92.2	16.7	-2.8	2.1	-3.2	18.5	13.9	2.2	5.3	7.0	3.7	19.4
FX deposits	6.5	27.0	6.3	2.4	16.5	10.1	39.7	4.0	5.2	6.2	4.6	21.7
Dram broad money (M2, period end)	48.5	7.5	-10.2	3.0	2.3	15.5	9.2	-5.0	5.1	6.3	8.8	15.5
Note:												
Broad money (M2X, average)	6.8	22.9	2.7	2.2	9.1	7.8	18.7	6.6	3.8	9.5	7.5	26.0
Dram broad money (M2, average)	21.4	33.3	-3.3	1.1	1.8	6.8	6.1	3.2	2.9	5.1	9.6	17.9
Broad money velocity (GDP/M2X, average)*	8.5	-3.1	-3.0	-1.6	2.4	-5.7	-1.8	-11.5	-12.6	-10.0	-10.4	-10.9
Dram broad money velocity (GDP/M2, average)*	-4.6	-10.6	6.0	7.3	18.1	7.2	9.9	-2.2	-3.7	-5.1	-8.3	-4.7
Money multiplier (M2X)**	-9.3	-1.7	3.4	3.4	-0.7	1.7	11.0	5.2	3.6	4.2	2.3	10.9
Dram multiplier (M2)**	3.1	6.5	-2.7	2.2	-5.3	0.7	-0.8	1.9	2.8	3.0	4.3	3.8

* Money velocities are computed based on quarterly adjusted indicators, while their change is computed against the respective quarter of the previous year.

** Money multipliers are calculated using average quarterly indicators.

*** In columns of QIV on the line "Other items net", the computation was made using program exchange rates of 2004; in annual columns, the computation was made using actual exchange rates as of December 31, 2004, which is considered the program exchange rate for the next year. These differences are reflected to the same extent in lines "Other items net" and "Net domestic assets".

Monetary base

(mln drams)

	2002	2003	2004					2005				
			QI	QII	QIII	QIV	2004	QI	QII	QIII	QIV	2005
Net foreign assets, including KfW loans** ***	130616	153802	145491	139660	145081	168941	148925	147540	147826	153309	172314	172314
O/w KfW	7447	8617	8617	11777	11777	11777	10109	10109	10109	13745	17382	17382
Net foreign assets	138063	162419	154108	151438	156858	180718	159034	157649	157935	167054	189696	189696
Net domestic assets***	-19343	-35216	-42062	-33408	-30944	-36891	-16875	-29323	-24421	-23159	-28477	-28477
Net lending	681	-22907	-30840	-23193	-19581	-26022	-26022	-40127	-32654	-31641	-36835	-36835
Net claims on the banking system**	10392	8894	4344	9096	13600	10825	10825	4729	7159	548	-8646	-8646
O/w KfW	7200	8700	8617	11777	11777	11777	10109	10109	10109	13745	17382	17382
Net claims on the Government	-9711	-31507	-35184	-32289	-33181	-36847	-36847	-44856	-39813	-32189	-28189	-28189
Other items net***	-20024	-12309	-11222	-10215	-11363	-10869	9147	10804	8233	8482	8358	8358
Monetary base (period end)	111273	118586	103429	106252	114137	132050	132050	118217	123405	130150	143837	143837
Currency outside CBA	92088	96838	84317	87022	92146	105534	105534	95299	99877	105445	116970	116970
Correspondent accounts with CBA	19185	21748	19112	19230	21991	26516	26516	22918	23528	24705	26867	26867
Note:												
Monetary base (period average)	81834	102366	104802	103592	111416	118153	109491	119717	119917	125777	132150	124390
Percentage change												
Net foreign assets, including KfW loans*	53.8	17.8	-5.4	-4.0	3.9	16.4	-3.2	-0.9	0.2	3.7	12.4	15.7
Net domestic assets	-326.2	-82.1	-19.4	20.6	7.4	-19.2	52.1	-73.8	16.7	5.2	-23.0	-68.8
Net lending	-94.4	3463.8	-34.6	24.8	15.6	-32.9	-13.6	-54.2	18.6	3.1	-16.4	-41.6
Net claims on the banking system	169.6	-14.4	-51.2	109.4	49.5	-20.4	21.7	-56.3	51.4	-92.3	1676.8	-179.9
O/w KfW	100.0	20.8	-1.0	36.7	0.0	0.0	16.2	0.0	0.0	36.0	26.5	71.9
Net claims on the Government	-217.5	-224.4	-11.7	8.2	-2.8	-11.0	-16.9	-21.7	11.2	19.1	12.4	23.5
Other items net	-20.2	38.5	8.8	9.0	-11.2	4.3	174.3	18.1	-23.8	3.0	-1.5	-8.6
Monetary base (period end)	38.5	6.6	-12.8	2.7	7.4	15.7	11.4	-10.5	4.4	5.5	10.5	8.9
Currency outside CBA	38.1	5.2	-12.9	3.2	5.9	14.5	9.0	-9.7	4.8	5.6	10.9	10.8
Correspondent accounts with CBA	40.3	13.4	-12.1	0.6	14.4	20.6	21.9	-13.6	2.7	5.0	8.8	1.3
12-month monetary base growth	38.5	6.6	10.8	11.4	10.4	11.4	11.4	14.3	16.1	14.0	8.9	8.9
Note:												
Monetary base (period average)	17.8	25.1	-0.7	-1.2	7.6	6.0	7.0	1.3	0.2	4.9	5.1	13.6

* Loans from KfW are included in NFAs as foreign liabilities and are not included in "Other items net".

** Loans to the CBA from KfW are included in "Net foreign assets" as foreign liabilities. Such funds lent to commercial banks by the CBA are included in "Bank liabilities".

*** In columns of QIV on the line "Other items net", the computation was made using program exchange rates of 2004; in annual columns, the computation was made using actual exchange rates as of December 31, 2004, which is considered the program exchange rate for the next year. These differences are reflected to the same extent in "Other items net" and "Net domestic assets".

Financial flows (2002-2005)

	Domestic economy			External sector	Statistical deviation	Horizontal review
	Private	Government	Banking			
	1	2	3	4	5	6
Gross disposable income						
2002	1341631	170747				127879
2003	1609273	194541				244328
2004	1876113	228697				304939
2005	2072795	280624				355192
Consumption						
2002	-1213753	-136072				
2003	-1364945	-166602				
2004	-1571174	-180824				
2005	-1717603	-224580				
Capital investment						
2002	-217509	-77699				
2003	-307412	-93195				
2004	-377820	-69974				
2005	-442375	-94511				
Export of goods and non-factor services						
2002				-399979		
2003				-522909		
2004				-519562		
2005				-527616		
Import of goods and non-factor services						
2002				634737		
2003				813767		
2004				807377		
2005				881465		
Net factor income						
2002				-50515		
2003				-54029		
2004				-24615		
2005				-31734		
Net transfers						
2002				-99391		
2003				-126449		
2004				-186568		
2005				-194744		
1	Non-financial balance*					
2002	-89630	-43024		84852	-47803	0
2003	-63084	-65255		110380	-17959	0
2004	-72881	-22101		76633	-18349	0
2005	-87183	-38467		127372	1722	0
2	Net lending by the Government					
2002	10208	-10208				0
2003	16323	-16323				0
2004	11737	-11737				0
2005	11786	-11786				0
	1	2	3	4	5	6

3	Domestic non-banking funding to the Government				
	2002	-2541	2541		0
	2003	-1605	1605		0
	2004	776	-776		0
	2005	-2900	2900		0
4	External funding of the Government **				
	2002		71011	-71011	0
	2003		77752	-77752	0
	2004		33729	-33729	0
	2005		34654	-34654	0
5	External funding of the private sector				
	2002	81333		-81333	0
	2003	78115		-78115	0
	2004	51920		-51920	0
	2005	116613		-116613	0
6	Change in net foreign assets of the banking system				
	2002		-67492	67492	0
	2003		-45487	45487	0
	2004		-9015	9015	0
	2005		-23895	23895	0
7	Domestic lending of the banking system				
	2002	1390	-10969	9579	0
	2003	9287	-15073	5786	0
	2004	37668	-273	-37395	0
	2005	34841	11758	-46599	0
8	Change in broad money				
	2002	-45243		45243	0
	2003	-30610		30610	0
	2004	-51974		51974	0
	2005	-52806		52806	0
	Change in other items net				
	2002	-16886	4216	12670	0
	2003	-15451	6360	9091	0
	2004	5707	-143	-5564	0
	2005	-17688	0	17688	0
10	Vertical review***				
	2002	-13567	13567	0	
	2003	10934	-10934	0	
	2004	1301	-1301	0	
	2005	941	-941	0	

* Involves a difference between savings and investments by individual sectors, the grand total of which is the deficit of the current account of the balance of payments.

** The 2002-2003 Lincy Foundation's resources are computed as capital transfers and are included in the sources of external financing of the budget deficit.

*** Deviations from the vertical review are due to the difference in the indicator on lending to the Government by the banking system, provided from bank balance sheets and state budget statistics.

Real GDP Growth and GDP Deflator Forecast Methodology

The real GDP growth and GDP deflator were forecast by sectors of the economy. First, both the real growth and the deflator of value added were forecast for individual sectors (industry, agriculture, construction, services) and net indirect taxes. Then, the real GDP growth was computed by the following identity:

$$(I_{-1}/GDP_{-1}) \times I + (A_{-1}/GDP_{-1}) \times A + (C_{-1}/GDP_{-1}) \times C + (S_{-1}/GDP_{-1}) \times S + (T_{-1}/GDP_{-1}) \times T = \text{GDP growth},$$

Where:

I - real growth of value added in industry forecast for 2005;

A - real agriculture growth rate forecast for 2005;

C - real construction growth rate forecast for 2005;

S - real services growth rate forecast for 2005;

T - real net indirect taxes growth rate forecast for 2005.

The GDP deflator is computed using the same logic of the identity, with the difference being that the sector deflators are taken instead of real growth.

The real growth of the sectors of the economy and deflators were forecast through the adaptive forecasting method which is provided in detail in the Monetary Policy Program 2004.

Real GDP growth and deflator forecasts by sectors of the economy

Yielding	Indicators	Value added (mln drams)					
		Industry	Agriculture	Construction	Services	Net taxes	GDP
1	January-December 2004	363183.8	416119.1	290721.2	636017.2	168000.0	1874041.4
2 = 1/GDP nom.	Share in GDP	0.19	0.22	0.16	0.34	0.09	
3	Real growth forecast, 2005	103.8	105.1	111.5	111.1	106.1	108.0
4 = (3 - 100) x 2	Contribution to growth	0.7	1.1	1.8	3.8	0.5	8.0
5 = 1 x 3/100	Real GDP	376883.2	437287.4	324228.1	706359.1	178281.9	2023039.6
6 = 5/ GDP real	Share in GDP	0.19	0.22	0.16	0.35	0.09	
7	Deflators forecast, 2005	103.8	105.3	103.5	103.8	103.6	104.0
8 = 6 x (7 - 100)	Contribution to deflator	0.71	1.15	0.56	1.31	0.32	4.0
9 = 1 x 3 x 7/10000	Nominal GDP	391313.9	460463.7	335576.0	732888.1	184700.0	2104941.7

Real Private Consumption Forecast Methodology

Private consumption was forecast as a function of GDP. The forecasts were made by the ADL (Autoregressive Distributed Lags) model using the indicators adjusted through the Additive Smoothing Method (see Table 4.1). The unadjusted figures were calculated using the seasonal coefficients on the obtained forecasts.

Table 4.1. Results of regression analysis of real GDP and real private consumption expenditures*

Dependent variable \ Independent variable	C intercept	First difference of real GDP	Real private consumption (previous quarter)	Real GDP (previous quarter)	Ratio of determination (R^2)
The first difference of real private consumption expenditures	8.57 (3.34) **	2.63E-06 (9.39)	-0.73 (-3.35)	1.92E-06 (3.31)	0.87

* All variables are expressed in logarithms.

** The figure in parenthesis is the value of T statistic.

Real Private Capital Investments Forecast Methodology

The estimation of the relationship between the real private capital investments and the real GDP was also made by the ADL (Autoregressive Distributed Lags) regression model using the indicators adjusted by the Additive Smoothing Method (see Table 4.2). The unadjusted indicators were calculated using the seasonal coefficients on the obtained forecasts.

Table 4.2. Results of regression analysis of real GDP and real private capital investments*

Dependent variable \ Independent variable	C intercept	First difference of real GDP	Real capital investments (previous quarter)	Real GDP (previous quarter)	Ratio of determination (R^2)
The first difference of real private capital investments	10.41 (5.39) **	6.43E-06 (9.64)	-1.12 (-5.36)	5.22E-06 (4.78)	0.84

* All variables are expressed in logarithms.

** The figure in parenthesis is the value of T statistic.

Fiscal Indicators Programming Methodology

As official actual indicators on the consolidated budget for 2004 are missing, the CBA's estimations of the consolidated budget were used in the monetary program. These estimations were based on the preliminary indicators on actual state budget performance, provided by the MoFE, and are strictly primary data of the local and social security fund budgets.

The source for indicators of the consolidated budget 2005 was the Armenian Law on the State Budget 2005. The quarterly distribution of the 2003-2004 budgets and the CBA expert estimations served as a basis for setting the quarterly proportions of fiscal indicators.

Fiscal impulse indicator

The fiscal impulse indicator was used to evaluate the fiscal policy impact on the overall demand and, therefore, the prices. The fiscal impulse indicator represents the sum of the budget revenue impulse and the expenditures impulse, and is calculated by the formula as follows:¹

$$FI_t = FI_t^r + FI_t^e = (t_0 - \Delta T_t / \Delta Y_t) * \Delta Y_t + (\Delta G_t / \Delta PY_t - g_0) * \Delta PY_t$$

Where:

FI , FI_t^r , FI_t^e - are the fiscal, revenue and expenditure impulses, respectively,
 t_0 , g_0 - are the revenue/GDP and Expenditures/GDP ratios, respectively, in the base period,
 T_t , G_t - are the revenue and expenditure levels, respectively, in the current period,
 Y_t , PY_t - are the nominal and potential GDP levels, respectively, in the current period.

According to the estimated fiscal impulses for 2004 and 2005, the following results were produced:

Indicator	Income impulse	Expenditures impulse	Fiscal impulse
2004			
Annual (preliminary)	-0.5	-0.9	-1.4
2005			
Annual (program)	-0.4	1.3	0.9

Indicators in the table show that as a result of the execution of the budget program in 2005, aggregate demand will be stimulated by 0.9%².

¹ The detailed methodology of computation is provided in the annexes of the Monetary Policy Program 2000.

² The impulse indicators in the table are computed as a percentage of GDP.

Methodology to Forecast Movement in items "Goods" and "Services" of BoP current account

The quarterly data* on Armenia's foreign trade turnover serves as a basis for the forecasting of "Goods" and "Services" of the BoP current account by commodity and service (inclusive of the period from 1996 through Q3, 2004).

In forecasting the export of the commodities, these commodities were broken down into two groups:

1. The forecast of the volume of commodities of the first group relied on the trends of the previous year. Economic growth in partner countries in recent years, investment in Armenia in 2004, and information on the anticipated developments in individual sectors of the economy were considered in the forecast. The increase (decrease) rate for each commodity in the group was computed. The indicator of such rate was then multiplied by the 2004 data to produce the 2005 data. The above method was used to assess the volume of the commodities as follows:
 - Fats and oils of animal and vegetable origin,
 - Mineral production,
 - Goods of chemical production,
 - Plastic, rubber,
 - Skins and articles of leather,
 - Wood and articles of wood,
 - Paper and articles of paper,
 - Textile articles,
 - Footwear, umbrellas, headgear,
 - Stone, plaster, cement,
 - Machinery and equipment,
 - Industrial manufacturing,
 - Works of art and antiques,
 - Products of vegetable origin,
 - Products of prepared food,
 - Machinery and apparatus,
 - Transport means,
 - Base metals and articles thereof.
2. The second group comprised commodities, the turnover of which depends on public agreements or international private contracts. The group consisted of "Precious and semi-precious stones, precious metals and articles" which is expected to report an increase in exports and imports in 2005.

For the forecast of imports, the commodities included in imports were grouped as follows:

1. Consumer goods, which include:

* The commodity turnover data are taken from the NSSA bulletin and are presented in million of US Dollars.

- Animal and products of animal origin,
- Products of vegetable origin,
- Products of prepared food, and
- Footwear, umbrellas, headgear.

The import of consumer goods was forecast as a function of the private sector's gross national disposable income, its previous year's level and the nominal exchange rate. The forecasts were made by the ADL regression model. In using the Seasonal Adjusting Additive Smoothing method, numerical series of dependent and independent variables, opted for regression, were smoothed, and then regression was made using smoothed series. The unadjusted figures were computed using the seasonal ratios after forecasts. The results of the regression analysis for imported consumer goods are presented in Table 6.1.1

Table 6.1.1. Results of the regression analysis for imported consumer goods

Dependent variable \ Independent variable	C intercept	GNDI private (-3) lag	Previous quarter indicator of consumer goods imports	Nominal exchange rate	Ratio of determination (R^2)
Consumer goods imports	31.97 (1.88)*	0.028 (4.58)	0.401 (2.95)	-0.046 (-1.72)	0.78

* The figure in parenthesis is the value of T statistics.

2. Ores and minerals, which include"

- Mineral production,
- Goods of chemical production,
- Plastic, rubber,
- Skins and articles of leather,
- Wood and articles of wood,
- Paper and articles of paper,
- Base metals and articles thereof,
- Stone, plaster, cement

Import of ores and minerals was forecast as a function of GDP (as these commodities further contribute to the process of production in the domestic economy and thus contribute to the GDP) and its previous lag. Services, which do not consume raw materials, and net indirect taxes were excluded from GDP. The forecasts were made by the ADL model.

Table 6.1.2. Results of the regression analysis for imported ores and minerals

Dependent variable \ Independent variable	C intercept	GDP (net)	Import of ores and minerals (-1) lag	Ratio of determination (R^2)
Import of ores and minerals	38.7 (3.84) *	0.067 (7.58)	0.35 (3.41)	0.75

* The figure in parenthesis is the value of T statistics.

3. Investment goods: the forecast for these goods was based on the trends of previous years and the analysis of economic activity for 2005, as well as the information on expected foreign investment. Investment goods include:

- Machinery and equipment,
- Machinery and apparatus.

4. Precious, semi-precious stones, and precious metals and articles were forecast taking into account the volume of these exports, and information on the possible extension of output of the sector.

5. Other goods, which include the commodity groups not included in the above items. The forecast for the exports was based on the trends of the previous years. These goods are:

- Products of vegetable origin,
- Textile articles,
- Transport means,
- Industrial manufacturing,
- Works of art and antiques.

The forecasts for individual commodities are presented in the data as Exports (FOB) and Imports (CIF), as the existing statistics on the commodities is expressed in FOB prices for exports, and CIF prices for imports. The monetary policy program relied on this data to evaluate the Exports (credit) and the Imports (debit) data in the following manner:

- The balance of payments data for 2001-2004 were used to calculate the ratios for Exports (credit)/Exports (FOB), and for Imports (debit)/Imports (CIF). The forecast for "Commodities" for 2005 is based on the average ratio from 2001 to 2004. The calculation is provided in the table;
- The forecasted Exports (FOB) of USD 803 million, and Imports (CIF) of USD 1516 million, were multiplied by the ratios above to produce the result for the amount of the Exports (credit) of USD 821 million and the Imports (debit) of USD 1346 million.

Table 6.1.3. Methodology to evaluate Exports (credit) and Imports (debit) data using the Exports (FOB) and Imports (CIF) data

	2001	2002	2003	2004	2005
Exports (credit)	353	516	689	715	821
Exports (FOB)	342	505	678	730	803
Ratio	1.033	1.021	1.016	1.020	1.023
Imports (debit)	773.3	883	1128	1198	1346
Imports (CIF)	877.4	987	1271	1351	1516
Ratio	0.881	0.894	0.887	0.887	0.887

The forecast for the export and import of non-factor services was made using the data on non-factor services of the BoP of Armenia (mln US Dollars). The non-factor services were grouped as follows:

- Transport,
- Travel,
- IT services,
- Others.

The forecast for the export of the non-factor services was made as follows: For each sector, the forecast covered the exports based on the previous trends and considering the dynamics of these exports. The forecast also considered the development prospects. The exports of all four groups were then added to achieve an assessment of the total exports of the non-factor services.

The imports of the non-factor services were forecast as a function of the imports of the goods and the private sector's gross national disposable income (GNDI). The results of the regression analysis are presented in the below table.

Table 6.1.4. Regression analyses for imported services

Dependent variable \ Independent variable	C intercept	Imports of goods	GNDI private	Ratio of determination (R^2)	Durbin-Watson statistics
Imports of services	13.49 (3.42) *	0.133 (5.99)	0.016 (3.14)	0.90	1.87

* The figure in parenthesis is the value of T statistics.

Table 6.1.5. Exports, mln US Dollars

		2002	2003	2004	2005	03/02	04/03	05/04
1	Animal and products of animal origin	3	6	7	8	113%	25%	17%
2	Products of vegetable origin	2	3	8	9	78%	163%	10%
3	Oils and fats of animal and vegetable origin	0	0	0	0	25129%	61%	37%
4	Products of prepared food	55	72	75	84	32%	4%	12%
5	Mineral production	42	48	94	106	13%	97%	13%
6	Goods of chemical production	2	3	2	3	53%	-25%	33%
7	Plastic, rubber	6	5	11	10	-24%	125%	-8%
8	Skins and articles of leather	1	1	1	1	21%	55%	21%
9	Wood and articles of wood	1	2	2	2	19%	24%	22%
10	Paper and articles of paper	1	1	2	2	42%	47%	35%
11	Textile articles	29	31	45	49	8%	45%	9%
12	Footwear, umbrellas, headgear	0	0	0	0	-47%	-31%	109%
13	Stone, plaster, cement	3	2	3	4	-45%	71%	26%
14	Precious and semi-precious stones, precious metals and articles	258	349	300	338	35%	-14%	13%
15	Base metals and articles thereof	45	90	117	133	102%	30%	14%
16	Machinery and equipment	21	21	21	22	-4%	4%	3%
17	Transport means	15	14	9	10	-6%	-39%	16%
18	Machinery and apparatus	19	28	17	18	48%	-41%	5%
19	Industrial manufacturing	1	2	2	2	30%	-8%	22%
20	Works of art and antiques	1	1	0	0	-15%	-80%	137%
Total (FOB)		505	678	715	803	34%	5%	12%
Total (credit)		516	689	730	821	34%	6%	13%

Table 6.1.6. Imports, mln US Dollars

		2002	2003	2004	2005	03/02	04/03	05/04
1	Animal and products of animal origin	28	34	43	51	24%	25%	19%
2	Products of vegetable origin	74	75	98	114	0%	32%	16%
3	Oils and fats of animal and vegetable origin	18	23	18	22	23%	-19%	19%
4	Products of prepared food	79	93	109	130	17%	17%	19%
5	Mineral production	171	177	224	238	3%	27%	7%
6	Goods of chemical production	63	83	82	87	32%	-1%	7%
7	Plastic, rubber	22	28	36	38	29%	26%	7%
8	Skins and articles of leather	2	2	1	1	1%	-28%	7%
9	Wood and articles of wood	7	9	10	11	20%	20%	7%
10	Paper and articles of paper	19	22	24	25	20%	8%	7%
11	Textile articles	36	40	47	55	10%	19%	16%
12	Footwear, umbrellas, headgear	4	4	5	5	2%	6%	19%
13	Stone, plaster, cement	19	22	23	25	14%	7%	7%
14	Precious and semi-precious stones, precious metals and articles	213	330	290	314	54%	-12%	8%
15	Base metals and articles thereof	56	76	61	64	37%	-21%	7%
16	Machinery and equipment	103	132	130	174	28%	-2%	34%
17	Transport means	40	73	91	106	83%	24%	16%
18	Machinery and apparatus	20	34	26	35	64%	-22%	34%
19	Industrial manufacturing	11	15	16	19	37%	9%	16%
20	Works of art and antiques	0	0	0	0	838%	-90%	16%
Total (CIF)		987	1271	1351	1516	29%	6%	12%
Total (debit)		883	1128	1198	1346	28%	6%	12%

Real Effective Exchange Rate

The real effective exchange rate for the Armenian economy will be calculated as follows:

$$REER_i = \prod_{i \neq j} \left[\frac{ER_i \times CPI_i}{ER_j \times CPI_j} \right]^{W_{ij}} \quad \text{where,}$$

Π - product,

$REER$ - real effective exchange rate of i country,

CPI - consumer price indices of i and j countries,

ER - direct nominal exchange rates of i and j countries in US Dollars (e.g. AMD 1 or RUR 1 presented in US Dollars),

W_{ij} - competitive weights, which are based on the volume of trade turnover of i and j countries, and are assessed as follows:

$$W_{ij} = \frac{E_{xij} + I_{mij}}{E_{xi} + I_{mi}} \quad \text{where,}$$

E_{xij}, I_{mij} - trade turnover between i and j countries (exports and imports),

E_{xi}, I_{mi} - volume of exports and imports of i country.

These formulas show that an increase in the CPI and nominal exchange rate of the country i (appreciation of the currency of the country i vis-à-vis the US Dollar) or their decrease in partner countries would appreciate REER of the present country, which implies better terms for the imports, and worse for the exports.

The REER for the Armenian Dram was assessed using the data on the average weight of the partner countries involved in foreign trade turnover during the period from 1999 to 2003. Humanitarian aid, gas and oil product values were excluded from imports, and diamonds were excluded from exports and imports, as their prices are considered to be relatively inelastic to price changes.

The weights for the calculation of the real exchange rate and the country impact for the period 1998 to 2005 are provided in Table 6.2.1. As opposed to the previous year, the computation of the real effective exchange rate for 2005 included Ukraine and Georgia, as turnover of foreign trade with these countries has increased considerably, reaching between 3% and 5%. The Euro-area impact on Armenia was also generalized: it is presented not by individual countries, but rather the total weight and impact of 12 countries in the Euro-area were assessed.

Table 6.2.1. Weights for the calculation of the real effective exchange rate and country impacts

	1998	1999	2000	2001	2002	2003	2004	2005 ²	Weight
REER (1997=100)	106.7	109.0	108.7	105.5	96.2	86.8	90.9	93.2	
	6.7%	2.2%	-0.2%	-3.0%	-8.8%	-9.8%	4.7%	2.6%	
Armenia's inflation	8.8%	0.7%	-0.8%	3.2%	1.1%	4.7%	7.0%	2.2%	
Dram exchange rate	-2.9%	-5.6%	-0.8%	-2.8%	-3.2%	-0.9%	8.8%	9.7%	
Partner countries' inflation	24.1%	28.8%	20.1%	18.6%	16.7%	12.5%	8.6%	8.2%	
United Kingdom	0.2%	0.1%	0.2%	0.1%	0.1%	0.2%	0.2%	0.2%	7.2%
Switzerland	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	3.7%
Iran	1.9%	2.2%	1.6%	1.3%	1.6%	1.8%	1.7%	1.7%	11.9%
Russia	4.3%	12.4%	3.8%	3.9%	3.0%	2.6%	2.1%	1.7%	20.5%
USA	0.2%	0.2%	0.4%	0.3%	0.2%	0.2%	0.3%	0.3%	10.8%
Turkey	3.2%	2.6%	2.3%	2.2%	2.0%	1.2%	0.6%	0.6%	5.3%
Euro-area	0.3%	0.4%	0.7%	0.7%	0.7%	0.7%	0.7%	0.6%	32.1%
Georgia	0.2%	0.8%	0.2%	0.2%	0.2%	0.2%	0.3%	0.2%	4.6%
Ukraine	0.4%	0.8%	1.0%	0.4%	0.0%	0.2%	0.3%	0.4%	3.9%
Partner countries' exchange rate	-14.0%	-34.1%	-12.2%	-5.7%	-0.7%	6.9%	5.3%	4.2%	
United Kingdom	0.1%	-0.2%	-0.5%	-0.4%	0.3%	0.6%	0.8%	0.5%	7.2%
Switzerland	0.0%	-0.1%	-0.4%	-0.0%	0.3%	0.5%	0.3%	0.3%	3.7%
Iran	0.0%	0.0%	-0.1%	0.1%	-0.0%	-0.4%	-0.6%	-0.6%	11.9%
Russia	-9.0%	-23.5%	-2.8%	-0.7%	-1.5%	0.4%	1.2%	0.9%	20.5%
USA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.8%
Turkey	-2.9%	-2.5%	-2.2%	-3.5%	-1.2%	0.0%	0.2%	-0.2%	5.3%
Euro-area	-0.4%	-1.6%	-4.8%	-0.9%	1.6%	5.7%	2.9%	3.0%	32.1%
Georgia	-0.3%	-1.8%	0.1%	-0.2%	-0.3%	0.1%	0.5%	0.3%	4.6%
Ukraine	-1.0%	-2.1%	-1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	3.9%

² 2005 forecasts are based on the figures of the 'World Economic Outlook', September 2004 edition, and CBA estimations.

Export and Import Price Forecast Methodology

The forecast for the export and import prices was made using the BEC (Broad Economic Classification) classification, which enables the reader to review the commodity groups according to their economic significance.

Table 6.3.1. BEC classification group weights in imports

	1998	1999	2000	2001	2002	2003
Consumer goods	22.4%	27.6%	24.5%	28.7%	21.4%	21.6%
Raw materials	33.8%	41.3%	36.1%	36.0%	36.2%	34.1%
Investment goods	6.7%	8.9%	7.3%	5.3%	7.0%	8.0%
Petrol	10.9%	8.2%	8.9%	11.4%	9.4%	7.1%
Diamonds	10.4%	9.4%	12.0%	9.9%	19.7%	23.7%
Natural gas	15.8%	4.6%	11.2%	8.6%	6.3%	5.5%

Table 6.3.2. BEC classification group weights in exports

	1998	1999	2000	2001	2002	2003
Consumer goods	24.0%	23.2%	30.5%	25.8%	22.3%	20.5%
Raw materials	42.5%	46.6%	44.9%	40.2%	34.8%	33.6%
Investment goods	4.2%	5.3%	5.8%	6.8%	3.6%	2.6%
Diamonds	29.3%	25.0%	18.8%	27.2%	39.2%	43.2%

As seen from the tables, petrol, diamonds, and natural gas were separated from the total imports, as prices on petrol are directly linked to international prices, and the prices in international futures contracts served a basis for the forecast. Prices on natural gas are determined by interstate agreements, thus it remained unchanged for the forecast; prices on diamonds are also constant as they are imported for reprocessing and further export.

Previous trends for investments and raw materials commodity groups serve as a basis for the forecast, where the prices on investment commodities (machinery and equipment) are constant. The prices on raw material commodities trend upward, which is consistent with the prices on the world commodities exchanges.

The forecast for prices on consumer goods relied on the methodology of the calculation of unit value as per partner countries. According to the methodology, the export and import unit values of consumer goods are broadly determined by the inflation and exchange rate levels in the partner countries by weighing through the formula of geometric mean.

Because these countries are positioned differently in the export and import structure, the Central Bank used different methods for forecasting. In the import of consumer goods there is no strict country concentration, and it may be forecast through a classic unit value calculation. However, in the export of consumer goods, about 60% of

accounts are for the USA. Therefore, the forecast for export prices on consumer goods relied on inflation in the USA alone, under a stable exchange rate. The forecast for import prices on consumer goods relied on shares of the partner countries for 2001. The inflation and exchange rate forecast for 2005 is provided in the below table.

Table 6.3.3. Partner country share in imports of consumer goods in 2001 and forecasts for 2005

Country	Weight (%)	Inflation	Exchange rate	Impact
Russia	17.4%	8.8%	4.2%	2.2%
UAE	13.6%	0.0%	0.0%	0.0%
USA	11.4%	3.0%	0.0%	0.3%
Iran	10.3%	15.0%	-4.5%	1.0%
United Kingdom	9.0%	2.3%	5.2%	0.7%
Panama	8.2%	0.0%	0.0%	0.0%
Ukraine	7.8%	11.9%	0.1%	0.9%
Germany	6.3%	1.3%	6.1%	0.5%
Switzerland	4.7%	0.8%	6.3%	0.3%
Turkey	4.3%	10.9%	-4.4%	0.3%
France	3.6%	2.1%	6.1%	0.3%
Italy	3.4%	1.9%	6.1%	0.3%
Memo: Euro-area	13.2%	1.8%	6.1%	1.0%
Total	100.0%	5.2%	1.6%	7.6%

In the country shares, one can observe the so-called "third country effect", when goods are imported from a country that is not the producer of the goods (e.g. Panama, UAE). These countries were therefore viewed as "fictitious", keeping their inflation and exchange rates on a constant level. The inflation and exchange rate data of the other countries were taken from the IMF International Financial Statistics database, and the data of the IMF "World Economic Outlook" were used in the estimations.

Exports and imports in Dram terms were computed again using different methods. In exporting, it is assumed that the export in Dram terms is only a reference value as exporting is done in Dollars and does not affect domestic economic variables directly. To compute exports in Dram terms, exports in Dollar terms is just multiplied by the average quarterly AMD/USD exchange rate.

In importing, Dram terms will exist as importers are selling in the domestic markets. In case of depreciation of the Dollar, there is a high probability that the importer will not lower the Dram prices to the same extent (the pass-through coefficient may not equal 1), as in the case of exporting. This is why the computation of imports in Dram terms was based on investment and consumer deflators that were weighted using shares of investment and other commodities (consumer goods, raw materials) in imports.

Comparative Analysis for Actual Monetary Base and Rule-Calculated Monetary Base

The monetary base forecasts for 2005, and its actual indicators of the previous years, are put into comparison with the McCallum Base Money rule-calculated monetary base indicators¹:

The above rule is formulized as follows:

$$b_t - b_{t-1} = \alpha - \frac{1}{16} * (Y_{t-1} - b_{t-1} - Y_{t-17} + b_{t-17}) + \lambda * (Y^* - Y)_{t-1}$$

where b is the logarythm of the level of the monetary base, Y and Y^* are the logarythms of the actual and potential GDP levels, respectively. All indiactors are taken on a quarterly basis.

As seen, the growth of the monetary base is a function of the following three variables:

1. α is a constant, which is equal to the potential GDP growth. The potential growth of the nomional GDP (α) was evaluated using the trend approach, and it made up 2.84% quarterly.
2. The second component is set to adjust the growth of the monetary base according to the change in the smoothed money velocity. McCallum's proposal is to calculate it for each quarter using the average change in the behavior of the previous four years. Such a long period for averaging is used because the smoothing should reflect the impact of institutional, other than cyclical, changes on the velocity of money.
3. The third factor (λ coefficient) will make sure there is feedback between the GDP cyclical changes and the monetary policy. It accepts values placed within the range 0;1, and ensures the dynamic stability and equilibrium of the Rule. McCallum has assessed the optimal value of λ coefficient to be 0.25.
4. The potential GDP (Y^*) was calculated as follows:

$$Y^* = 0.2 * Y^*_{t-1} + 0.8 * Y_{t-1} + 0.0284$$

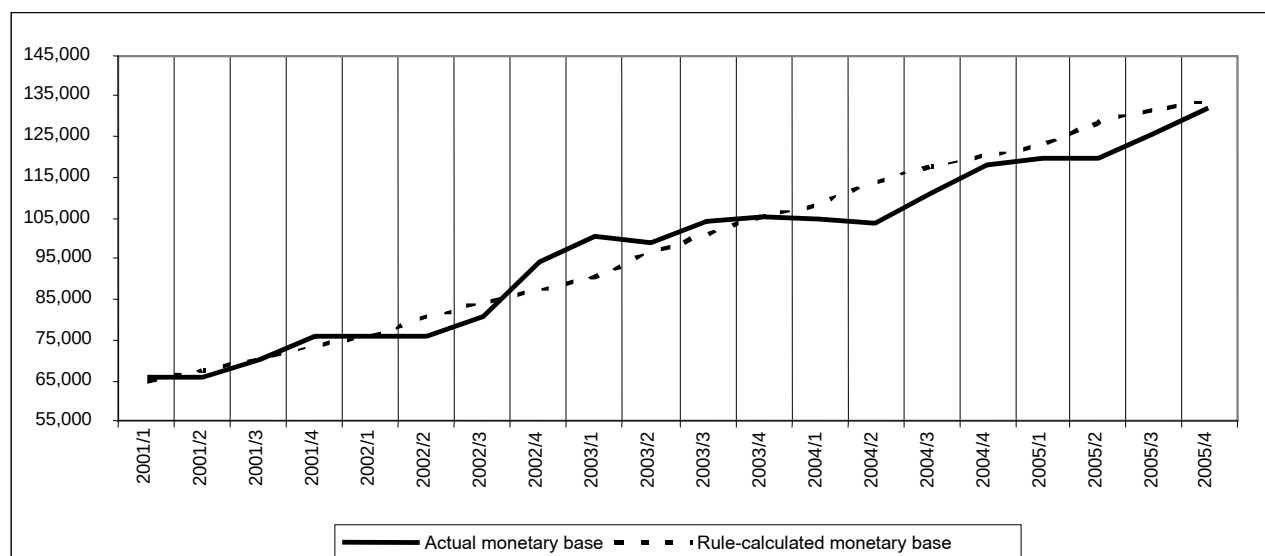
where Y and Y^* are the logarithms of the actual and trend GDPs.

In 2004 the growth of the actual monetary base was notably slower as compared with the growth of the rule-calculated monetary base, determined

¹ See Andrew G. Haldane, Bennett T. McCallum, Chris Salmon "Base Money Rules in the United Kingdom", Issued by the Monetary Analysis Division, Bank of England, 1996.

however not by the tough monetary policy of the CBA but because 2004 saw considerable shifts in the structure of the monetary base, i.e. demand for cash decreased that went in line with the increased excess liquidity in correspondent accounts of banks.

Chart 7.1



In 2005 the average growth of the monetary base is projected to be a little higher (13.6%) against the growth of the rule-calculated monetary base (12.2%). However, during the year the average monetary base in nominal terms will lose to the rule-calculated monetary base, reaching the same levels by the end of the year.

Table 7.1. Actual monetary base and rule-calculated monetary base and nominal GDP growth rates from 2001 - 2005

Year	Nominal GDP (actual)	Monetary Base (actual)	Nominal GDP (Rule)	Monetary Base (Rule)
2001	114.0	23.8	15.1	17.6
2002	115.9	17.8	14.7	18.6
2003	119.1	25.1	13.4	20.0
2004	116.7	7.0	12.1	16.9
2005	112.3	13.6	11.4	12.2

Basic Monetary Indicators Forecast Methodology

The forecast for Dram broad money for 2005 was made using the special case, i.e. the partial adjustment model of the Autoregressive Distributed Lags (ADL) model. A regression equation underlying the analysis is as follows:

$$M2_t = c + \alpha_1 M2_{t-1} + \beta_0 GDP_t + \gamma_0 DEF_t + \varepsilon_t \quad (1)$$

Where:

M2 is the real Dram broad money,

GDP is the real GDP

DEF is GDP deflator.

Some simple mathematical modifications changed the equation, as follows:

$$\Delta M2_t = c + \beta_0 \Delta GDP_t + \gamma_0 \Delta DEF_t - (1 - \alpha_1) M2_{t-1} + (\beta_0) GDP_{t-1} + (\gamma_0) DEF_{t-1} + \varepsilon_t \quad (2)$$

Before the modification, the review of the time series stationarity has revealed that each of these series is first order integrable on the first order I (1). In other words, the first difference time series $\Delta M2$, ΔGDP and ΔDEF , which have been included in the equation above, are stationary I(0). The stationarity has been tested by the Dickey-Fuller test. Below are the results of the test for the time series $\Delta M2$, ΔGDP and ΔDEF :

<u>$\Delta M2$</u>			
ADF Test	-	1% Critical Value*	-3.724070
Statistic	4.761847	5% Critical Value	-2.986225
		10% Critical Value	-2.632604

<u>ΔGDP</u>			
ADF Test	-	1% Critical Value*	-3.689194
Statistic	6.590538	5% Critical Value	-2.971853
		10% Critical Value	-2.625121

<u>ΔDEF</u>			
ADF Test	-	1% Critical Value*	-
Statistic	7.723508		3.689194
		5% Critical Value	-
			2.971853
		10% Critical Value	-
			2.625121

The advantage of the model is that in addition to the ΔGDP and ΔDEF variables that describe short term developments of the Dram broad money,

the equation has considered the components describing the long term correlation as well. Before estimating the model, the existence of cointegration between the variables was tested. For simplicity, the equation (2) may be represented in terms of the Error Correction Model equation, as follows:

$$\Delta M2_t = \beta_0 \Delta GDP_t + \gamma_0 \Delta DEF_t - (1 - \alpha_1) \left[M2_{t-1} - \frac{c}{(1 - \alpha_1)} - \frac{(\beta_0)}{(1 - \alpha_1)} GDP_{t-1} - \frac{(\gamma_0)}{(1 - \alpha_1)} DEF_{t-1} \right] + \varepsilon_t \quad (3)$$

In fact, the model shows that a change in the Dram broad money reflects the influence of the current change in the real GDP deflator and an error correction component in the brackets. This component equals zero in case of long term equilibrium. It will be non-zero in case of disequilibrium, and the coefficient $(1 - \alpha_1)$ shows the speed of adjustment.

Table 8.1. Results of the regression analysis*

Dependent variable \ Independent variable	First difference of real GDP (ΔGDP) ***	Real dram broad money indicator of previous quarter ($M2_{t-1}$)	Real GDP indicator of previous quarter (GDP_{t-1})	First difference of real GDP deflator (ΔDEF)	Indicator of GDP deflator of previous quarter (DEF_{t-1})	C intercept	Fictitious variable for Q4, 2002	Coefficient of determination R^2
First difference of real Dram broad money ($\Delta M2$)	0.924* (5.874) **	-0.387 (-1.645)	0.928 (2.982)	-1.089 (-2.451)	-1.183 (-2.214)	-1.840 (-0.553)	0.085 (2.195)	0.86

* All variables are expressed in logarithms.

** The figure in parenthesis is the value of T statistic.

*** GDP data are smoothed.

CPI Econometric Analyses and Forecasts

In building the model, consumer basket goods were classified into individual groups of commodities, with specific approaches in respect to each of these groups. The consumer basket comprised groups of commodities as follows:

1. Domestic goods which compete with imported goods;
2. Domestic goods which do not compete with imported goods;
3. Imported goods;
4. Services;
5. Agricultural product;
6. Petroleum;
7. Bread and cereals; and
8. Public services.

In general, in our research, price behavior can be explained by:

1. Domestic demand;
2. Mark-up process at the businesses; and
3. Treating the price of imported goods as a restriction.

Domestic Demand Factors

The nominal money supply, the budget deficit and private transfers were considered as factors of domestic demand. In equations, the nominal money supply was considered in two aspects. By the first lag, the money supply was used as a variable that describes short-term fluctuations of aggregate demand; by the fourth lag, the money supply was used as an indicator that describes domestic demand in the long run.

The budget deficit was not included in the equations as deficit financing, mainly, has led to growth of the money supply.

The next factor describing aggregate demand is private transfers, which are simply incomes for households. Private transfers were taken in Dram terms by indirectly including exchange rate fluctuations in the process of price explanation.

GDP was included in the equations to describe short-term fluctuations of aggregate supply and the fluctuations of the demand for money.

Factors Describing the Mark-Up Process at Enterprises

Prices of imported raw materials, prices of electric energy, and salaries were considered as the factors in the mark-up process at enterprises.

Collection of statistical data on the prices of imported raw materials is currently underway. The price of electric energy has not been changed in recent years.

The most significant factor of the mark-up process were wages. The approach underlying the wages equation is as follows: given the persistent growth of aggregate demand, businesses begin to increase volumes of production as prices rise. In this case, there arises a need

to attract new employees, which results in increasing wages, depending on the situation in the labor market.

Import Prices

Import prices were considered as a constraint for prices of domestic competitive goods since imports are unlimited in comparison with domestic production volumes, and should prices of domestic competitive goods go up, there would be an unlimited import of goods and the price-rise would be contracted.

The table below shows the coefficients of impact of exogenous variables on endogenous variables.

Endogenous	LW	LCPIDOMX	LCPIIMPORT	LCPIDOM	LCPSEV	LCPIAGR	B
Exogenous							
MS (-1)	0.00000153	-	-	-	-	-	-
LMS (-1)	-	-	-	-	0.02	0.296	-
LMS (-4)	-	-	-	0.056	-	-	-
LW	-	0.134	-	0.124	-	-	-
LW (-1)	0.799	-	-	-	-	-	-
LW (-2)	-	-	0.065	-	-	0.922	-
TREX (-1)	0.00000206	-	-	-	-	-	-
LTREX	-	-	-	0.036	-	-	-
LTREX (-1)	-	-	-	0.012	-	-	-
LCPIIMPORT	-	0.878	-	-	-	-	-
LRGDP	-	-0.136	-0.039	-0.257	-	-	-
LCPIDOMX (-1)	-	0.338	-	-	-	-	-
LEXIUV (-1)	-	-	0.107	-	-	-	-
LCPSEV (-1)	-	-	-	-	0.663	-	-
LQAGR	-	-	-	-	-	-1.265	-
BI	-	-	-	-	-	-	0.521
EXR	-	-	-	-	-	-	0.781

LCPIDOM - prices of domestic uncompetitive goods expressed in logarithms;

LMS - money supply expressed in logarithms;

LTREX - private transfers in Dram terms expressed in logarithms;

LCPIAGR - prices of agricultural product expressed in logarithms;

LCPISERV - prices of services expressed in logarithms;

LCPIDOMX - prices of domestic goods (expressed in logarithms) in the consumer basket, which compete with imported goods;

LCPIIMPORT - prices of imported goods (expressed in logarithms) in the consumer basket;

LRGDP - real GDP expressed in logarithms;

LW - wages expressed in logarithms;

MS - money supply;

TREX - private transfers in Dram terms;

B - domestic price of petroleum;

BI - international prices of petroleum;

LEXIUV - import unit value, multiplied by the exchange rate;

EXR - Dollar/Dram exchange rate; and

LQAGR - agricultural output expressed in logarithms.

For 2005 the following scenario has been chosen for the exogenous variables of the model:

Date	Money supply growth rate (%)	Private transfers growth rate (%)	Exchange rate	Import unit value growth rate (%)	Inter- national petroleum price	Real GDP growth rate
Q1-05	14	15.0	496	6.8	45.0	8.00
Q2-05	16	10.0	490	8.2	42.8	8.00
Q3-05	19	10.0	480	8.6	40.0	8.00
Q4-05	19	10.0	474	6.8	37.0	8.00

Under this scenario, the following forecast will be achieved for prices.

In order to get a more complete picture of inflation trends, indicators of the table are shown in 12-month growth spans, which allows the avoidance of seasonal price fluctuations.

	Growth rate of agro product prices in CPI	Growth rate of price of services in CPI	Growth rate of prices of uncompetitive domestic goods in CPI	Growth rate of prices of competitive domestic goods in CPI	Growth rate of prices of imported goods in CPI	Growth rate of price of bread in CPI	Growth rate of price of petroleum in CP	CPI growth rate
Q1-05	13.02	-0.32	1.97	4.78	0.14	-3.07	9.67	2.91
Q2-05	11.18	0.23	1.00	3.39	0.58	-2.45	-5.48	2.56
Q3-05	12.26	1.21	-0.32	5.76	1.41	0.00	-7.39	3.39
Q4-05	9.80	1.17	0.41	4.13	1.18	0.00	-15.10	2.76

The results of the table indicate that inflation in 2005 is predicted to be close to 2.8%, and inflation during all quarters will be around 3%.

Given these results and seasonal behavior of inflation, inflation was distributed by quarters.

Analysis of the Results of the Applied Model "Changes in Wages, Production and Prices in terms of International Trade"

The model is focused on comparing productivities and wages in Armenia and the rest of the world, and evaluating their impacts on output and relative prices¹. The model considered the case that the economy produces two types of goods - tradable goods and non-tradable goods. The goods that will be cheaper to produce in relation to similar ones in international markets will become tradable and be exported. Otherwise they will be non-tradable. So, the rationale of reduced costs and making non-tradables into tradables is the growth of productivity. One of the features of the model is the existence of a "homothetic" demand, which implies that the share of income spent by the world on domestically produced goods is proportional to the share of those goods in the total range of goods (the goods are indexed on an interval [0,1]). The model also considered transportation costs as an impacting factor on the prices, which gives rise to a range of goods that may become non-tradable. The relative prices of home and foreign country's non-tradables become the main reason in price differences across the countries.

As a final result of the model, the below formula estimates the relative prices depending on economic relationships between Armenia and the rest of the world, as follows:

$$\ln\left(\frac{P}{P^*}\right) = -\frac{1 - \exp/GDP}{1 - \exp/GDP + \text{imp}/GDP} \quad (1)$$

Where:

P - Dollar price of domestic goods;

P^* - world prices in Dollar terms;

$\exp/GDP$ -- real export/GDP ratio;

imp/GDP - real import/GDP ratio.

If we substitute the Dram relationship of Dram prices times USD/AMD nominal exchange rate for the Dollar price of domestic goods $\left(\frac{P}{P^*}\right)$, the real exchange rate will be produced. So, the real exchange rate can be used instead of the $\left(\frac{P}{P^*}\right)$ relationship. Since the formula includes total exports and total imports, rather than just trade relations with any partner country, the real effective exchange rate would be correct to insert:

$$\ln REER = -\frac{1 - \exp/GDP}{1 - \exp/GDP + \text{imp}/GDP} \quad (2), \text{ while}$$

¹ The paper "Changes in wages, production and prices in terms of international trade" is detailed in the CBA Q3 2003 report.

$$Z^H = \frac{1 - \exp/GDP}{1 - \exp/GDP + imp/GDP}, \quad \text{of which} \quad \ln REER = -Z^H$$

$\ln REER$ - index of Armenian Dram's real effective exchange rate in logarithmic terms;

Z^H - range of goods produced in the country.

In the Monetary Policy Program 2004, the level of prices in partner countries in this model were considered as given and constant ($P^* = \text{const}$), and consumer prices in Armenia in Dollar terms were considered as a dependent variable. However, developments in international markets in 2004 showed that international Dollar price fluctuations were significant, and one reason of such fluctuations was the weakening Dollar. Therefore, in order for the model to be used more correctly, the real effective exchange rate will be taken as a dependent variable, which also captures shifts in prices of goods of partner countries.

The theoretical logic lies in the following: the relationship between the range of domestically produced goods and the relative prices is negative, that is the decrease in the range of domestically produced goods (z^H) will lead to a price rise, and vice versa. The increase in domestically produced goods (z^H) means that the imported goods are substituted by relatively cheap domestically produced goods, owing to comparative advantages obtained in the non-tradable sector of the economy.

According to the formula, (1) export growth has a dual impact. On the one hand, the growth of exports, due to increasing productivity, will mean that the part of the non-tradable goods turns into tradable goods, owing to price advantages. On the other hand, the productivity growth in the tradable sector gives rise to wages both in the tradable and non-tradable sectors, which leads to the loss of external competitiveness in the non-tradable sector, decline in the range of domestically produced goods (z^H), and substitution of the part of the non-tradables by the imported goods. Besides, the wage growth, boosted by the productivity growth, will lead to an increase in demand and stimulate new quality imports, which in turn will result in the shrinking range of domestically produced goods and a price rise. As a result, the second factor prevails among the above mentioned factors, and the export growth entails the decrease in the range of domestically produced goods and a price rise.

The import growth leads z^H to decline. It implies not only a loss of the comparative advantages in the non-tradable sector, but also means the growth of imports of new quality goods, owing to increasing demand. That is to say, the decline of the range of domestically produced goods is determined by a widened range of imported goods rather than a substitution of the domestically produced goods by the imported ones.

The aforementioned model was used to estimate average inflation in Armenia for 2005. The behavioral equation was built and coefficients of

the real effective exchange rate dependent on z^H were estimated through regression. Then, the above equations were used to calculate z^H for 2005, based on the CBA's forecast for quarterly indicators of imports and exports. While calculating z^H , the item "Precious and semiprecious stones and precious metals and articles" was excluded from the exports and imports. The 2005 quarterly estimations of z^H were used in the regression analysis to forecast the level of the real effective exchange rate for 2005. To get the change in prices in Armenia, the partner countries' price and exchange rate change contributions were excluded from the percentage change of the Armenian Dram's real effective exchange rate. The projection of partner countries' inflation and exchange rate changes for 2005 was taken from the IMF periodical "World Economic Developments, 2005". Below are the results of the regression analysis.

Table 10.1

Dependent variable	Independent variable	C intercept	Range of domestically produced goods z^H	Armenian Dram's real effective exchange rate index with (-1) lag	D 4**	Ratio of determination (R^2)
Armenian Dram's real effective exchange rate index		29.51 (4.23) *	-36.43 (-5.61)	0.96 (18.52)	5.77 (3.56)	0.95

* The figure in parenthesis is the value of T statistics.

** Dummy variable.

Below are the results of Armenia's average inflation forecast for 2005.

	2005
Annual average inflation	1.80
Armenian Drams' real effective exchange rate	0.92
AMD/USD exchange rate	9.70
Inflation in partner countries	-8.20
Exchange rate in partner countries	-4.10

The previous year's developments in the external sector indicators and forecasts allow for the prediction that the average inflation in 2005 will be around 1.8%. According to the model, almost no inflationary pressures will be shown from the export sector, since there will be no surpassing growth rates of real exports in relation to the real GDP in 2005. On the contrary, financial inflow will stimulate demand and create a considerable impact on inflation. In particular, this factor will cause a rise in wages, loss of competitiveness and increased imports.

Brief Theoretical Description of the P-STAR Model Analysis of Inflation in Armenia¹

P-STAR is a simplified model that describes the price dynamics. The model allows for the forecasting of short-term price fluctuations as a process with which the actual prices are brought in compliance with the equilibrium prices. The P-STAR model-yielded price gap (P^*-P) can be treated as a benchmark indicator that allows for the predicting of future changes in prices, or otherwise, it reflects the inflationary potential of an economy. The P-STAR model of inflation is based on the quantity theory of money, whose basic identity is the following:

$$p + y = m + v \quad (1),$$

where p is the level of prices, y is the real GDP, m is the money supply, v is the velocity of money (all variables are in logarithms).

According to the model, the long-term equilibrium price level (p^*) is determined as follows:

$$p^* = m + v^* - y^* \quad (2),$$

where p^* is the long-term equilibrium price level, v^* is the equilibrium level of the velocity of money, y^* is the potential GDP.

The difference between the equations (1) and (2) produces the price gap (p^*-p)

$$GAP=p^*-p= (y-y^*) + (v^*-v) \quad (3)$$

The above expression denotes that the price gap represents a combination of two other gaps, as

($y-y^*$) - the capacity utilization gap or the GDP gap, and

(v^*-v) - the velocity gap.

The followers of the P-STAR model believe that the main reason for the occurrence of inflation lies in the difference between the long-term equilibrium price level (p^*) and the current price level. They insist that the excess supply of money, not yet reflected in the current prices, may cause the velocity of money to decline from the equilibrium price level and/or raise the GDP from its potential level. A situation like this will create inflationary pressures in the economy. So, the implication is that when the real GDP and the velocity of money are consistent with their equilibrium levels, the price level moves together with the money supply and inflation is a monetary phenomenon.

The P-STAR model may be turned into an equation for inflation, as follows:

¹ The complete material is provided in the CBA's Q2 2002 report. The P-STAR model is practiced internationally - in some EU countries, Canada, Czech Republic.

$$\pi_t = \alpha (p_{t-1}^* - p_{t-1}) + \pi_{t-1} \quad (4), \quad \text{or,}$$

otherwise

$$\pi_t = \gamma_1 (y_{t-1} - y_{t-1}^*) + \gamma_2 (v_{t-1}^* - v_{t-1}) + \pi_{t-1} \quad (5):$$

Below are the results of the regression analysis of the P-STAR model for Armenia. It should be noted that the equilibrium levels of the GDP (y^*) and the velocity of money (v^*) were calculated using the Hodrick-Prescott filter.

$$\text{INF} = \gamma_1 * \text{YGAP}_{t-1} + \gamma_2 * \text{VGAP}_{t-1} - \gamma_3 * \text{INF}_{t-1} - \gamma_4 * \text{INF}_{t-3} - \gamma_5 * \text{DUM} + C \quad (6)$$

Table 11.1. Results of the regression analysis

Dependent variable \ Independent variable	GDP gap indicator with one quarter lag (YGAP_{t-1})	Liquidity gap indicator with one quarter lag (VGAP_{t-1})	Inflation indicator with one quarter lag (INF_{t-1})	Inflation indicator with three quarter lag (INF_{t-3})	Dummy variable (DUM - 2002 Q3)	C intercept	Ratio of determination R^2
Inflation (INF)	27.03 (6.095)) *	23.52 (4.902)	-0.43 (- 5.301)	-0.53 (- 6.172)	-4.12 (- 2.451)	2.39 (7.146)	0.88

* The figure in parenthesis is the value of T statistics.

The equation (6) may be treated as a model that brings the Philips Curve and the monetarist model of inflation together. That is, equation (6) includes two competing aspects for shaping inflation. Philips is arguing that inflation is a result of disequilibrium in the goods market. The monetarist theory's argument is that inflation is a result of money market disequilibrium.

Below are the 12-month indicators of inflation by quarters, forecast through the P-STAR model. These indicators show that in the studied period, inflation will be within estimates.

2005	Q1	Q2	Q3	Q4 or end-year inflation
Forecast inflation indicators	1.2%	1%	2.2%	2.6%

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