THE MONETARY POLICY

P R O G R A M

2003

OF THE REPUBLIC OF ARMENIA

Approved by the
Central Bank Board Resolution
no. 12A, 27.01.2003

CONTENTS

INTRODUCTION

The Monetary Policy Program for 2003 is based on the directions of the medium-term economic developments, which include preserving achieved levels of economic growth and inflation; macroeconomic and financial stability; and continuous improvement of the balance of payments. The program is designed in accordance with the requirements of Armenian Law on “The Central Bank”. The program presents an analysis of developments in all sectors of the economy in 2002 under the macroeconomic environment, and provides forecasts for 2003 with a detailed account of the course, objectives and trends of the monetary policy (Annex 2).

The macroeconomic environment for implementation of the monetary policy in 2003 would broadly have the same patterns as were in 2002, owing to a considerable financial inflow expectable for 2003, too. The developments that are expected in the financial sector might be considered particular for 2003. The deposit insurance system, further remedies in the banking sector and existing preconditions for creation and development of non-bank financial institutions would serve an essential stimulus for more extensive financial intermediation.

The first section of the program “The Macroeconomic Developments in the Republic of Armenia” describes the factors determining the developments of the aggregate supply and the aggregate demand in 2002. The section marks an intensive real growth rate of the aggregate supply in 2002 owing to the industry and the construction, and the sequential trends in the course of the next year. The forecasts relative to the other branches of the economy also witness that the real growth of the aggregate supply would behave stably. The aggregate demand would have moderate rates of growth. The main factors stimulating such growth, as were in 2002 too, include the disbursement of the grant of the Lincy Foundation and of the external funds for the budget deficit financing. The private consumption as a basic component to the aggregate demand would remain in lower growth rates in respect of the income growth. This is viewed as a result of incremental growth of savings in the economy and still high inequality of incomes. The section also presents the GDP branch and expenditures deflators and the GDP deflator assessed by comparison of the above two deflators.

The second section “The Fiscal Policy” opens with a notice to the course of the fiscal policy of 2002 marking the more robust collection of taxes compared with the previous years, and the execution of the annual program. The section then introduces the issues that have complicated the handling of the aggregate demand and the coordination with the monetary policy pointing out a still low level of taxes in the GDP, a heavily disproportionate collection of taxes in each month and the delays in disbursements of external funds for the budget deficit financing. With respect to the program indicators of the budget for 2003, the section provides that the net influence of the expenditures and incomes on the program level of the aggregate

demand would be somewhat expansionary, while the indicator of the primary deficit in the GDP would make the share of the external debt in the GDP to remain on the 2002 level.

The third section “The External Sector” reviews the expected trends for the current account components of the balance of payments and for the deficit, the autonomous sources of its financing, and the change in international reserves due to implementation of the monetary policy. It is predicted that the share of the current account deficit in the GDP (including the official transfers) would slightly shrink against 2002 mostly due to outstripping growth rates of the exports compared to those of imports. The section also provides forecasts on the real effective exchange rate, the terms of trade and the import and export prices for 2003.

The fourth section “The Inflation” points out the basic factors that entailed 2.0% inflation given the high growth rates of incomes and a more expansive monetary policy conducted by the Central Bank in 2002. The calculation for 2003 provides that the difference between the salary and productivity, the change in the import prices and the share of indirect taxes in the GDP would probably affect the consumer price index. Similarly, the likely impact of such factors on the consumer prices was calculated for 2003. In view of this and the importance of low inflation, the joint economic program has defined a desired level of inflation of up to 3% for 2003.

The fifth section “The Directions and Trends of the Monetary Policy in 2002” describes behavior of the economic growth and inflation throughout the year and the money demand patterns, and the issues of the money supply regulation determined by financial flows.

The growth trends for the monetary aggregates are commented according to individual components whose behavior indicates a deeper financial intermediation. The growth rates of dram deposits were far high in comparison with the years before. The description of behavior of the monetary aggregates considered incidence of the data of only 22 banks since January, 2002, as the indicators of 6 banks, where the Central Bank has assigned temporary administration, were removed from calculation of the monetary indicators. The conducted monetary policy, which was targeted to preserve an annual inflation indicator, is assessed as sufficiently expansionary, and the decrementing annual index of the monetary terms is an evidence of this. The section provides evaluation of the monetary and fiscal policy coordination (which has not been impressive in terms of improved efficiency) especially in respect of smooth handling of the current liquidity of the banking system and the aggregate demand. This is broadly determined by severely disproportional tax collection and a huge amount of accumulations in the Unified Treasury Account over the months.

The sixth section “The Main Issues and Directions of the Monetary Policy in 2003” provides monetary indicators forecasts for 2003 based on the expected developments in the overall macroeconomic environment, medium term economic development trends and setting the inflation up to a 3% target. Despite the projected slow rates of growth even compared to the end of 2002, the average annual growth rates of the monetary aggregates would further outpace the growth rates of the nominal GDP. This is attributable first of all to a steep increase of the money supply as huge budgetary foreign currency flows were converted at the Central Bank at the end of 2002. The money multiplier and the dram multiplier would increase given the predicted continuous growth of foreign currency and the dram denominated deposits and the reserve requirement to be lowered from July of 2003. Consequently, the average annual growth rate of the monetary base would lose to growth rates of the broad money and the dram broad money, but would exceed the growth rate of the nominal GDP.

Considering the large-scale growth of the monetary base at the end of 2002 and the financial influx expected in 2003, the monetary policy would increasingly use absorbing instruments. The program underlines the importance of an improved efficiency of coordination with the fiscal policy to moderate liquidity fluctuations in the banking system and handle the overall demand more smoothly. The overall interest rates, and the difference between interest rates on loans and deposits are predicted to decline as the projected monetary aggregates grow and the loan portfolio of the banking system improves by quality.

Surely, the execution of the program of the monetary policy includes risks relating to potential divergences that are likely to arise out of individual sectors of the economy. The seventh section “The Risks in Execution of the Monetary Policy Program” refers in detail to such risks. The section addresses the possible approaches to revise the program should risks occur, or arise a need to neutralize them, and ensure a target indicator of inflation.

The eighth section “The Development of the Banking System” provides that the banking system has entered a new, rehabilitation phase as the Central Bank started to remove inefficiencies of weak and insolvent banks and endorse a handful of legislative and regulatory papers to further enhance the rehabilitation process. Creation of a deposit guarantee scheme, a credit registry and credit institutions, as stipulated in the law, comes as part of the regulations. The execution of the program of such remedies and reforms in the banking sector with a time span of up to the year 2005 would presume a stronger and sounder banking system with continuous growth of its profitability and financial intermediation.

The ninth section, the last one, “The Development of the Payments and Settlements Relations” introduces the complex measures to further develop the banking system, enlarge the scope of financial and banking services and improve the quality of such services. To encourage non-cash circulation, use of plastic cards as a means of payment is intended to enlarge not only at commercial and retail outlets but also in payments for public utility services. The Central Bank would continue work to improve the payment and settlement systems operations and further regulate the sphere.

THE MACROECONOMIC DEVELOPMENTS IN THE REPUBLIC OF ARMENIA[1]

A steady macroeconomic environment of the recent years allows expecting a normal long-run pace of economic developments and an ability to delineate their trends more precisely.

The macroeconomic environment in 2002 was remarkable with high growth of the aggregate supply, and the results of the first half of the year showed that the economic growth in 2002 would be higher than anticipated. Though the aggregate demand has also outstripped the program, the economic growth has however been contingent on an increased aggregate supply.

The 13% economic growth[1] in 2002 has twofold exceeded the average annual economic growth of the last decade. All sectors of the economy reported real growths. The growth rates of the industry were momentous for 2002 as these were excessive in relation to the growth rates of the economy. Whereas, the economic growth rates in the last years had been increasingly dominant over the growth of industrial output.

The agriculture sector reported a somewhat different pattern of development, as there was a break in producing seasonal agricultural output. The vegetation period had delays due to the weather, and the agricultural produce was manufactured mainly in the third quarter. This promoted a price increase in the first quarter, and to a speedier economic growth and deeper seasonal deflation, in the second.

The year was outstanding by the fact that the construction sector reported an unusual growth in capital construction. Although round Dram 35 million worth of construction was realized at the expense of the Lincy Foundation, the private sector accounted for about 40% of the total construction work. Achievement in the sector is important in view of a proportional distribution of income. Given relatively higher salaries in the branch, a unit growth of the output seems to increasingly contribute to a proportional income distribution, in comparison with the industry or services. This means that the economic growth at the expense of the construction may boost the demand for consumer goods, which would adequately affect the CPI. However, with certain moderation though, the income inequalities still remain high.[2]

Thus, the construction and the industry have contributed to the GDP growth in 2002 by providing 4.5 and 3.1 percentage points, respectively, to the economic growth. Despite the high growth rates of the GDP the services remained to trend their previous. With a big share in the GDP though, the services sector contributed 3.9 percentage points to the real growth of the GDP.

With high growth in supply, the economic policy of running the demand during the year may qualify not sufficiently expansionary, and that is one of the main reasons for the inflation being lower than programmed (the annual inflation was 2% at the end of the year instead of the projected 3%). The Central Bank's monetary policy was more expansionary than programmed as actual growth of the aggregate supply was very high. This was reflected in the money market especially in the mid of the third quarter when the demand for money grew

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[1] *The basic macroeconomic indicators are the preliminary estimates of the Central Bank.*

[2] *The Gini coefficient in 1999 and 2001 was 0.57 and 0.53, respectively (Poverty Reduction Strategy Program, PRSP, October, 2002, Yerevan).*

more than programmed. Although the fiscal policy was mostly within the program the delays and shortfalls in external financing resulted in underperformance of the expenditures thus failing to sufficiently broaden the aggregate demand amidst high rates of economic growth.

The existing structural problems in the economic system bring instability to the aggregate demand behavior. The urgent of these is disproportional redistribution of income as high growth rates of the GDP in the last two years (which also implies prospective aggregate demand growth) were not concurrent with the relevant growth of the demand in relation to consumer goods, thus placing restrictive impact on growth of prices on consumer goods. Low growth rates of the consumer demand were also determined by growing rates of savings in the economy, which in turn is a result of certain steady growth of incomes. These factors perhaps partially contributed to the GDP deflator to be in excess of the CPI growth in the course of the last years.

The trends in the branches of the economy in 2002 allow anticipating that the economic growth, which the Central Bank estimates to be 6.0% in 2003, would be provided owing to some buoyancy in the industry (increased exports), in the construction (external funding), in the services. Whereas, growth in the agriculture sector would be relatively slow (Annex 3).

The real industrial output would increase in 2003 by 8.6% to provide 1.8 percentage points to the real GDP growth, according to the Central Bank estimations. The processing sector of the industry, the jewelry, metallurgy and food production in particular, would contribute a prevailing part to the real industry growth. The developments in the sector largely depend on the rest of the world as the basic manufactures (items of jewelry, food, ore and minerals) are for the most part exported. This means that the external demand and competitive export items would determine the growth of the manufacture.

In the event of good weather, the agriculture sector is expected to grow by 2% to contribute 0.4 percentage points to the GDP growth. Modest expectations on the growth in the agriculture sector explain the adequacy of demand for agricultural product. There are no grounds to anticipate considerable growth of demand for agricultural product for end consumption. Therefore, the volumes of the sector's output may be estimated as moderate. The demand for agricultural product could notably arise if there is a growing demand for the processing sector's products. However, even in case of a large demand for agricultural product from the processors considerable growth in output would be unlikely in a short period (one year) as investments in the sector are small, there are inefficiencies in production costs, etc. Improved effectiveness in using the land, developed agricultural product processor enterprises, growing investments, all could well foster progress of the agriculture sphere.

The real growth in construction would reach 9%, to contribute 1.2 percentage points to the GDP growth, according to the Central Bank estimations. The growth rates in the sector remain increasingly high in the last three years owing to increased capital refurbishment, capital investments in the industry, housing construction in the country. Construction work being realized through external funding would also contribute to the growth of capital construction in 2003.

The real growth in services would be 5.4% in 2003, to contribute 1.8 percentage points to the economic growth, according to the Central Bank estimations. The transport and communications sector would be likely to remain buoyant in 2003, and the capital investments in the sector would continue to grow.

The private consumption in 2003 would in real terms grow by 4.0%, according to the Central Bank estimations (Annex 4). Such growth would largely depend on increased gross

income and the fact that considerable rise in constructions, which provided respectively equal distribution of income, had fostered the economic growth in 2002, and that the same trend would be seen in 2003, too.

Given the arrangements on reactivation of some major industrial plants in the recent years the amount of gross private investments is expected to grow in 2003 by 4.0% in real terms. The most part of private investments would be made at the expense of external sources as well, as was in previous years.

In 2003, the public sector would affect the aggregate demand in terms of both investments and consumption. The public consumption would increase by 10.0%, the investments, by 45.9%, in real terms. The public investments would be financed largely from the external sources. The expansionary public sector would stimulate the domestic demand for the goods and services, which would reach 6.4% in real terms. In the domestic demand structure, the real end consumption would rise by 4.5%, and the gross investments, by 15.6%.

The continuous growth of foreign commodity turnover in line with the economic growth is typical as economic relations with the rest of the world broaden. Similarly, improvement of the external equilibrium is typical once the economic growth shapes long-term trends in structure.

The export of goods and services would rise in 2003 by round 16.6% in real terms. The exports would increase once foreign competitiveness of the locally manufactured goods and services would have improved given a low level of the CPI in the domestic economy in the recent years compared to the partner countries' indicator.

The real growth of the imports in 2003 would be 11.4%, according to the Central Bank estimations. Such exports and imports growths depend mostly on increased import of precious and semiprecious metals and raw material and increased export of items manufactured thereof.

The Central Bank estimates the GDP deflator to be 103.2% (Annex 3) instead of 102.9% in 2002, which is the same as the average annual CPI level. The deflator would have its peak in the construction, 106.2%; in the services, 103.3%; and in the industry, 102.5%. The deflator's lowest would be in the agriculture, 102.1%.

In view of the consumption deflator the aggregate demand would be 102.9% in 2003. The expected level of the CPI would surpass the level of consumption deflator as prices on agricultural products would rise relatively less than prices on other consumables. The capital investments deflator would reach 106.2%, and the change in deflators in the construction would presumably draw a notable influence on the capital investments costs as these are expected to grow owing to construction and assembly works.

THE FISCAL POLICY

The pace of the fiscal policy has been important in realizing the objectives provided for in the 2002 Economic Policy Program of the Republic of Armenia. Successful tax revenue collections that provided the projected level of tax revenue for the 2002 budget, and the more than anticipated amount of disbursements from the Lincy Foundation deserve mentioning. Such effectiveness in the tax collections was observable for all quarters of the year. The tax collection in 2002 was 17.7%[3] compared to the previous year's 10.8%, while the same indicator in 2000 was less by 4.1%. The broadened tax base achieved through a vigorous tax and customs administration determined such collection of taxes (the tax elasticity ratio has grown to 1.2 against 0.4 in the previous year). These administrative actions enabled to somewhat reduce the shadow economy and create preconditions for building sounder foundations for improved collection of taxes in 2003. It should be noted however that although the government's intention to implement the poverty reduction and effective budgetary redistribution programs, the taxes to GDP ratio still remains low.

There were certain problems in the fiscal policy area in 2002 that have essentially complicated coordination of the monetary and fiscal policies and produced difficulties in the effective management of the aggregate demand. These included:

- Extremely volatile tax collections and expenditures execution. Collection of the planned level of taxes accomplished during the year was concurrent with even more disproportional tax collections during a month than in the last two years. In 2002, 56% of the average monthly tax was collected within the last three days of the month, and 40%, in the last day of the month. For certain months, the amount of tax accounted for the last day of the month reached close to 50% of the month's tax indicator, whereas 50% of the average monthly tax in 2001 has accounted for the last three days of the month, and 37%, in the last day of the month. Such disproportional collection also led to accumulations of the budgetary funds in the Unified Treasury Account, with an average monthly amount during the year close to 24.2% (Dram 3.0 billion) of the average monthly balance of the correspondent accounts, and approximately 50% in the last days of certain months, or approximately 9% (Dram 6.0 to 7.0 billion) of the average monthly monetary base. Such accumulation of the budgetary funds, and big portion of cash spending in the budget expenditures (Annex 5) created considerable difficulties in the management of the banking liquidity, which was more clearly observed at the end of the month and throughout the first weeks of the next month. The above factors causing accumulation were added by another one since September, as the budgetary funds were deposited with the Central Bank's deposit accounts as term deposit. The total amount of the accumulations thus averaged Dram 5.0 billion in September - December, of which the deposit accounts of the budget accounted for Dram 2.0 billion. Such transient accumulations evince that the projected proportion of the budget revenue and expenditures for both a quarter and a month lacks adequate precision. Considering that the budget expenditures with their multiplicity impact contribute also to creation of tax commitments and an improved tax collection process, more proportionate spending of the budgetary funds would perhaps help to somewhat level out the existing disproportion in revenue collection.

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[3] *The 2002 budgetary indicators are preliminary data provided by the Ministry of Finance and Economy of Armenia, (MoFE).*

- Insufficient remedies to reduce the financial gap in the quasi-fiscal area. The budget kept on granting subsidies and loans in 2002 to repay foreign liabilities of the energy sector.
- Insufficient amount of information about flows of the resources of the Lincy Foundation, in the event when such resources have amounted to 17.5% of the tax revenue of the year's budget. Converted into Dram mostly by the Central Bank, such flows have generated difficulties in terms of both the banking liquidity and in managing the projected level of the aggregate demand, in line with the accumulations in the Unified Treasury Account and disproportionate budgetary expenditures.
- The shortfalls (on PIUs) and delays (on a SAC 4 tranche) in foreign loans to finance the budget deficit, thus causing the annual budget expenditures to reach 95.7% of the planned figure.[4] The budget expenditures grew by 11.7%, whereas the nominal GDP growth was 16.3%. Thus, with such high level of the aggregate supply in 2002, the fiscal policy did not stimulate a corresponding aggregate demand because of the above shortfalls and delays. The difference between 1.4%[5] expansionary fiscal impulses and 0.4% actual restrictive fiscal impulses, calculated using the annual projected budgetary indicators, is another evidence of this (Annex 5).

The recent tendencies of improvements in the coordination of the fiscal and monetary policies, in spite of existing certain problems, continued in 2002 as well. The successful coordination involved the allocation of government securities. In consideration of increasing the average maturity of government securities in 2002, the Central Bank paid due attention to providing sufficient liquidity in the banking sector. Keeping interest rates low was an important task, too. Though the securities financed 60.0% of the deficit from this particular source throughout the first six months of the year, the smoothening of this size is not enough to level out the budget expenditures. Therefore, the coordination of the fiscal and monetary policies for 2003 and the years to come shall be focused on resolution of these issues. Longer term savings in the economy and provision of longer term investments becomes an important issue as the economic performance continues to be strong in the recent years, and creation of a longer term securities market in Armenia could serve a good precondition for this. To this effect, it would be desirable to develop and implement internationally practiced strategic programs for domestic public debt management. An annual program for securities issue by maturity and value would also be desirable to introduce to financial agents and other securities market participants at the beginning of 2003 to enable a smoother execution of the program. This endeavor would make the financial market's performance more manageable and promote to improve the effectiveness of the monetary policy of the Republic of Armenia.

The budget revenue and grants[6] in 2003 would increase by 10.1% against 2002 to reach 19.2% of the GDP. Tax revenue would increase by 11.0% to reach 14.7% of the GDP compared to the previous year's 14.5%. The budget deficit in the GDP is projected to be

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[4] The SAC 4 tranche was included in the 2002 joint economic program of the Government of Armenia, the Central Bank and the IMF; it was annexed to Armenian Law on "State Budget, 2002" and was not included in the expenditures indicator. Consequently, the 2002 expenditures were outperformed (the disbursement of the said tranche has offset the shortfalls in foreign loans to PIUs) to reach 100.3%, according to the MoFE data.

[5] These calculations were made using annual preliminary estimates of the consolidated budget of the Republic of Armenia, and the USD 15 million worth SAC 4 tranche was included in the annual expenditures.

[6] The budget revenue and expenditures include disbursement of Dram 46.6 billion from the Lincy Foundation, according to Armenian Law on "The State Budget, 2003", therefore, for comparability, the 2002 budget revenue and expenditures included the disbursement as well.

3.2%, 97% of which should be financed from the external sources. However, the recent concern, relating to the shortfalls in, and uncertain schedules for, foreign financing sources, admits to presume that such divergence may be likely in the course of 2003, too, which would create extra difficulties in coordination of the monetary and fiscal policies and the management of the aggregate demand. Given this issue and the disproportional tax collection, volatilities of the monetary base could be smoothed out by making daily plans for the tax revenue collection and expenditure execution on a cash and non-cash basis. This would give the Central Bank an opportunity to reduce the maturity of the monetary policy instruments and improve effectiveness in managing the banking liquidity, which would also enhance an efficient allocation of the government securities.

The budget expenditures in 2003 would increase by 13.3% to total 22.4% of the GDP against 21.6% in 2002. The repayment of Dram 27.9 billion during 2002 from the arrears of the previous years and the resultant reduction in the debt down to Dram 14 billion would create comforting preconditions for performance of the expenditures part of the budget in 2003.

The fiscal impulses calculated using the program indicators of the 2003 budget show that the fiscal policy would have an expansionary impact (1.0%) on the projected aggregate demand (Annex 5). This would depend mostly upon an expansionary nature of the expenditures to be provided for once large foreign financial flows would have arrived. According to the 2003 budget indicators, the deficit to GDP ratio of 2.3%[7] and the revenue to GDP ratio of 14.9% generally conform to the requirement of keeping the previous year's debt to GDP ratio stable. To keep such stability there is a need to maintain the deficit to GDP ratio of 2.2% and the revenue to GDP ratio of 15.1%, according to a debt sustainability calculation method issued by the Central Bank.

Thus, though the annual budget proportions suffice for the required level of the aggregate demand, the improved coordination of the fiscal and monetary policies and implementation of the monetary policy find it useful to conform performance of the 2003 budget to the measures to solve the above issues.

[7] *The GDP indicator included in the calculations is taken from the financial programming table developed by the Central Bank.*

THE EXTERNAL SECTOR[8]

The principal developments in the external sector in 2003 would be consistent with general macroeconomic developments of the economy. The exports and imports of goods and services, and incomes are expected to grow, while current transfers are expected to remain unchanged. A remarkable feature in the capital and financial account may be the increase in capital transfers from the Lincy Foundation to be used to accomplish the projects underway. Net foreign public credit is expected to increase in 2003 as well.[9]

The Central Bank estimates the current account to GDP ratio to be 6.7% in 2003 compared to the previous year's 6.9%. The current account deficit in 2003 would reach USD 171.5 million compared to USD 163.8 million in 2002. Improved trade balance in 2002 has notably reduced the current account deficit by USD 36.7 million. However, a slower reducing current account deficit in 2003 explains the anticipation of growing demand for investment commodities and ore and minerals. Foreign commodity turnover would amount to USD 1.57 billion, an increase by USD 201.8 million compared to the same indicator in 2002.

According to the Central Bank estimations, the exports of goods (credit) in 2003 would total USD 605.3 million (Annex 6.1) growing by USD 96.1 million (18.9%) compared to the previous year's indicator. Such growth would be determined by growing exports of commodity groups that have big share in the exports structure. The exports of goods included in the commodity group "Precious and semiprecious stones, metals and articles thereof" would contribute to the exports growth by round USD 64.6 million. The increment in the indicators of this group was about USD 124.6 million in 2002 mainly owing to launching of new enterprises, improved quality in stone processing and reprocessing of rough diamonds delivered from Russia and their export of nearly 400 thousand karats. The growth of the export of goods in the commodity group "Processed food" would be USD 7.6 million. The growth rates on the export of these goods have been high enough in the recent years as the food industry increases production volumes and manufactures competitive goods thanks to major investments in the sector. The growing export of items such as brandy, wine and tomato paste would contribute to such growth. The growth of the export of goods in the commodity group "Ore and minerals" would be USD 4.9 million. The exports of this commodity group in 2002 reported growth by USD 7.7 million owing to increased export of copper and molybdenum ores, electrical energy. The commodity groups "Textiles" and "Plastic and articles thereof" would also grow at relatively small volumes.

The indicators of these commodity groups have shown steadfast high growth rates in recent years thanks to effective investments (including direct investments) in the respective sectors and reactivation of manufacturing capacities. In addition, some export-oriented businesses broadened their sales markets and got in new ones owing to competitive quality of their manufacture and improved productivity. These trends will carry on for 2003, too. The geography of exports in 2002 denotes a considerable increase in exports to Israel, Great Britain, Belgium, Germany, the Netherlands, Russia, UAE. The real exchange rate, which depreciates resolutely in the recent years, also contributed to the exports growth.

According to the Central Bank estimations, the imports (debit) in 2003 would total USD 960.8 million (Annex 6.1) growing by USD 105.7 million (12.4%) compared to the previous year's indicator. Such growth would depend on an increase of USD 52.7 million in imports of the commodity group "Precious and semiprecious stones, metals and articles thereof",

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[8] *The 2002 balance of payment data are the Central Bank estimations based on the actual data for three quarters.*
[9] *Excluding repayment of the Russian credit.*

determined by reactivation of new manufacturing capacities and bigger average size of imported unprocessed stones. The import of goods in the commodity group "Ore and minerals" would grow by round USD 22.6 million. Despite the declined imports of goods of this group in 2002, the Central Bank estimates it as short-termed. The import of goods in the commodity group "Machinery and equipment" would grow by USD 31.2 million. Such growth would explain an increased domestic demand for investment commodities, gasoline and oil products as the country's economic activeness rises and capital investments grow. Also the imports of investment commodities are expected to grow due to privatization of some major enterprises and investors' willingness to invest as the country entered in a *property against debt* deal with Russia. Despite the growing aggregate demand the imports of the consumer goods would somewhat trend downward as production of the import substitutes continues to grow.

The export of services would amount to USD 185 million growing by USD 14.5 million compared to the previous year's indicator. Growing transport, IT services, tourism would contribute to such growth. In 2002, the investments in the IT and tourism sectors were substantial, and these would carry on in 2003 as well. The import of services would grow by USD 17.7 million to total USD 231.0 million. The growth of import of transport services would depend on increasing imports of goods. The tourism would also report growth in 2003. In the outcome, the negative balance in respect of the services would drop by USD 3.2 million to reach USD 46 million.

The Central Bank estimates the indicator of item "Income" to reach USD 66.0 million, an increase by USD 4.8 million compared to the previous year's indicator. Such growth would be attributable to falling income payable on investments, particularly interest payable on the Russian credit. The current transfers in 2003 would not undergo essential changes; these would remain on the last year's level making up USD 164 million.

The "Capital transfers" from the Lincy Foundation would have a big share in financing the current account in 2003, as they did in 2002. The disbursement from the Lincy Foundation in 2003 would be USD 80 million to finance 46.6% of the current account. The disbursement would be nearly USD 20 million more than in the previous year.

The share of direct investments would remain high, in connection with the current account financing. The direct investments in 2003 would total USD 174 million of which USD 94 million are the direct investments created through a restructured Russian credit. Exclusive of the Russian credit, the direct investments would total USD 80 million growing by USD 3 million compared to the previous year's indicator to finance 46.6% of the current account. Increasing direct investments in the private sector, state-owned enterprise privatization funds and reinvested profit would contribute to the marked level of the direct investments.

The foreign public loans, which have long been the main source to finance the current account, represent the next major item in the capital and financial account. In 2003, the net foreign public loan / current account indicator would be 45.6%. USD 144.8 million worth foreign public debt[10] (inclusive of the loans of the Central Bank and the loans guaranteed) is expected to attract in 2003. USD 40.0 million under the World Bank SAC 5 loan facility; USD 27.1 million provided by the IMF to the Central Bank under the Poverty Reduction and Growth Facility (PRGF) project; and other World Bank loans constitute a big share in this indicator. The foreign debt service would be USD 75.0 million (exclusive of repayment of the Russian credit).

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[10] *The foreign debt data are taken from the foreign debt table agreed with the MoFE and the IMF.*

In 2003, the private sector is expected to repay former accumulation of net liabilities on commercial loans, which would amount to USD 55.2 million.

The commercial bank NFAs would grow in 2003 by USD 20.0 million owing to increased value of foreign currency denominated deposits of residents. This tendency was observed also in 2002 with a resultant growth of NFAs of round USD 34.8 million. High growth of incomes reported in the last year would carry on this year, too. The domestic savings would trend upward thus boosting the foreign currency deposits and, consequently, the NFAs, to grow, given high dollarization. For capital paid-up, banks are expected to attract more funds from non-residents in 2003, which would also lead to an increase in NFAs.

In pursue of handling the monetary base, the Central Bank will make considerable foreign currency interventions during the year while sterilizing the increase of the money supply as a consequence of such conversion. Also, the state budget will have plans to repay the Lincy Foundation-disbursed loans of USD 18.1 million by purchasing foreign currency from the Central Bank. Because the budget had, at the end of 2002, received, converted at the Central Bank, and used huge amount of foreign currency resources, which will be offset over 2003, the Central Bank's gross foreign assets[11] would drop later the year by USD 5.0 million to amount to USD 425.2 million (less the privatization funds) to ensure a 4.3 month imports coverage. The Central Bank's NFAs would also drop over the year by USD 8.5 million to amount to USD 214.8 million.

The foreign public debt expects to be restructured in 2003 as the contract on the deal *property against debt* accomplishes. To the effect of the contract, Armenia's debt of USD 93.7 million to Russia will offset against surrender of some enterprises to Russia. In the outcome of these arrangements and net attraction of other loans Armenia's foreign debt (including government guarantees) would be USD 977.3 million in 2003 in comparison with the previous year's USD 1010.0 million. This deal will markedly broaden the share of the privileged loans in total credits since the Russian credit is non-privileged. The privileged loans would constitute the biggest share, 92.5%, in total credits in 2003 as well. The foreign debt to GDP ratio would be 38.4% in 2003 against 42.5% in 2002. However, the last two years saw some improvement in indicators that estimate the foreign debt liquidity, owing to a considerable increase in exports of goods and services. The unsustainable borrowings indicator[12] would be 29.4% in 2003 (54.4% in 2002). The pays on foreign debt service would notably increase in 2003 making up USD 75.0 million (less the Russian credit). Repayment of the principals would amount to USD 63.1 million of which USD 18.1 million representing credit resources of the Lincy Foundation and USD 23.6 million, the IMF loans. In 2003, the foreign debt service to GDP ratio and the foreign debt service to exports ratio would be 2.9% and 9.5, correspondingly. The strategy of foreign debt in the next years should be to downsize attraction of loans, arrange for privileged loans and improve efficiency of use of loans attracted.

With the above trends for the balance of payments, the real effective exchange rate[13] would depreciate by 4.7% in 2003 against 9.6% in 2002, according to the Central Bank

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[11] The Central Bank's gross foreign assets and net foreign assets are calculated using US dollar exchange rates as at the end 2002, excluding the privatization funds, including the KfW loan.

[12] The indicator of unsustainable borrowings is calculated as grand total of growth rates on exports of goods and services and on gross reserves, and difference of growth rate on foreign debt.

[13] The real effective exchange rate is calculated using average weight of foreign trade of main partner countries in period 1997-2001, except for Belgium. The IMF "World Economic Outlook", September, 2002, and the Central Bank estimations served a basis for forecasting the inflation and exchange rates in the partner countries.

estimations (Annex 6.2). Its main factors, i.e. the inflation and the exchange rate, would behave in Armenia and in the partner countries as follows: the average annual inflation in Armenia is projected to be 3.2% in 2003 against 1.1% in 2002, while the nominal exchange rate would depreciate at lower rates, 2.2% in 2003 against 3.2% in 2002.

Influenced from the partner countries, the weighted inflation would reduce (8.1% this year against the previous year's 10.2%). The reason for such high inflation is Russia, Turkey and Iran. As for the exchange rates in partner countries, the depreciation of the US dollar against the euro, pound sterling, and Swiss franc would be counterweighed by the depreciation of the Iranian rial that has a great impact as Iran had started to conduct a manageable floating exchange rate policy in 2002. In the outcome, the average weighted exchange rate in the partner countries would depreciate by 2.8% in 2003 against 2.9% in 2002.

In spite of some decrement, the rate of the real exchange rate depreciation in 2003 would remain somewhat higher than the average of 1.8% reported in period 1996-2002. The real exchange rate depreciation is consequence of substantial trade balance deficit. The continued depreciation would, in a longer run, enable reduction in the current account deficit as competitive branches develop.

Armenia's terms of trade would decline by 0.4% in 2003 compared to growth of 0.3% in 2002, according to the Central Bank estimations (Annex 6.3). The imports prices would rise by 0.2% in 2003 compared to 0.6% in the year before. The exports prices would drop on average by 0.3 annually compared to growth of 0.9% in the year before. Such trends for the exports and imports prices (terms of trade) would affect the GDP indicator very little.

One of the causes for change in the imports prices includes dropping prices on intermediate consumables (raw materials, working capital) and oil products, by 3.4% and 3.0%, respectively, which should be counterbalanced by rising prices on consumables. The growth of prices on consumer goods would be 4.7% in 2003 against 5.8% in 2002. Such growth would be determined mostly by a high level of inflation in the partner countries such as Russia, Iran, and Turkey. Although high enough, the inflation in these countries lowered in 2003 to make up 4.4 percentage points compared to 5.8 percentage points in the year before.

The prices on other groups of commodities such as diamond, natural gas, and investment commodities are estimated by the Central Bank to behave steadily in 2003.

In the exports structure, prices on intermediate consumables are also expected to fall by 2.4% to be counterbalanced by growth of prices on consumables by 2.3%. Changes in prices on other groups of export commodities (investment commodities, diamond) over 2003 are not anticipated.

THE INFLATION

Considering the medium run monetary policy program provisions, and a low inflation phase, which Armenia entered recently, the monetary policy program for 2002 had set forth an up to 3% inflation indicator as at the end of period, with the annual inflation to average up to 2.3%.

The analysis of the processes in different sectors of the economy, estimated probable pressures of these processes on the inflation, and consistent handling of the money supply allowed ensuring a 2.0% inflation indicator in lieu of the projected 3%.

The below factors had markedly affected formation of the inflation indicator as follows:

First, the inflation indicator was extremely volatile throughout the year affected by both seasonal and random factors. The average variant standard deviation indicators, that were 2.5 in 2002, 1.9 in 2001 and 1.2 in 2000, witness this. Consequently, such high volatility had complicated the Central Bank efforts to handle the inflation. While the first half of the year reported a high inflation indicator of 4.6% (0.2% in 2000 and 3.8% in 2001 in the same period), which rose worries as to outstripping the annual program indicator because of anticipated huge disbursements from the Lincy foundation during the second half, major deflation of about 8% in July and August had totally changed the situation. Intending to prioritize the annual program indicator of inflation and considering high economic growth rates in period January - August, the Central Bank has handled the monetary base beyond the upper limit of the band.

However, given the unequal income distribution, the stimulating economic policy's impact on consumer demand, hence, the prices on consumer basket goods, has been weak. A higher GDP deflator indicator of 102.9 in respect of the average consumer price index of 101.1, reported in 2002, serves a good evidence for this.

Notwithstanding high economic growth of the previous years, it is difficult to state that Armenia's gross domestic product is close to its potential level. This perhaps may explicate the circumstance that the overall demand stimulation-oriented economic policy has mostly promoted to achieving high economic growth rather than price rise.

The analysis of the level of inflation by supply factors shows that the growth rate on the real salary in 2002 has outpaced the growth rate on productivity thus contributing to higher inflation. Given high economic growth rates reported in 2002, there is prediction that the aggregate demand broadening economic policy in 2003 would be concomitant with faster growth rates on real salary in relation to productivity.

The share of net indirect taxes in the GDP in 2002 remained on the previous year's level, 9.7%, leaving neutral impact on the inflation. This share in 2003 would shrink by 0.4 percentage points to make up 9.3%. Consequently, the inflation indicator would also drop by 0.4 percentage points.

The impact on prices coming from the external sector has been expansionary in 2002, according to the Central Bank estimations, determined by 3.8% increase in imports prices[14] in dram terms. Further, the growth of imports prices in money terms was almost entirely a consequence of depreciated exchange rate (3.3% o 1.2 percentage points). In dollar terms, change in imports prices was merely 0.4%, where 5.6% rise in consumer prices was

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[14] *Imports prices included only prices on consumables, intermediate consumer goods and oil products, because these are the commodities to affect the goods supply, whereas the investment commodities, diamond and natural gas were removed from that calculation as these have negligible impact on the inflation.*

restricted by dropping prices on raw materials, 1.5%, and on oil products, 3.9%. The impact of imports prices on the inflation in 2003 would reduce as there is prediction that the nominal exchange rate would depreciate at a slower pace, and the imports prices would remain stable.

The government-regulated prices grew by 1.6%[15] on average throughout the year, and affected the average annual inflation by 0.16 percentage points.

In view of the tendencies in previous years, aggregate demand and real economic growth assessments, and considering that lower inflation fosters Armenia's international competitiveness, the Central Bank has projected an up to 3% level of inflation for 2003.

[15] *The phone fees and international call tariffs increased.*

THE DIRECTIONS AND TRENDS OF THE MONETARY POLICY IN 2002[16]

Following the objectives and principles of a policy conduct of the previous years, the monetary policy program of 2002 too, had addressed the core objective of ensuring low and stable inflation, which had to be achieved through volume adjustment of the monetary aggregates. However, strategy of the monetary policy was featured with distinction in relation to prior years' policies as there was expectation of huge foreign currency inflow, and the Central Bank should have to handle the monetary base within the band to ensure an up to 3% level of annual inflation. Considering the Central Bank estimations of the demand for money in anticipation of 6% real growth, the dram broad money was expected to increase by 9.6% as at the end period, and by 17.0%, on average.

The macroeconomic environment and main macroeconomic indicators of 2002 have increasingly incurred the expected impact of external financial inflow. Although the Central Bank treated the dates and value of such disbursements as risky flows in the monetary policy program 2002, almost the entire amount of foreign currency funds has arrived during the year. These funds included the Lincy Foundation grant of Dram 34.5 billion, of which nearly Dram 5.6 billion has been transferred out of the country against the imports, SAC 4 tranche of Dram 8.1 billion, other grants of about Dram 16.8 billion, and the KfW loans of Dram 2.8 billion. About half of this influx has been offset due to external debt service, net sale of foreign currency in the market by the Central Bank[17], and conversions for customers; the other half however has been poured in dram terms into the economy stimulating the aggregate demand and, hence, the demand for money. Thus, given the real economic growth of 13.0%, the broad money and the dram broad money increased by 34.6% and 50.7%, correspondingly. Further, the second half of the year reported faster growth rates on the monetary aggregates because, partly, the distribution of the external flows among the quarters was disproportional, and the last two quarters were furnished with the bigger portion of the funds.

For a true survey of the indicators of the banking system, the adjustment in the monetary statistics was an important action as the data of 6 banks in temporary administration were not included in the calculation of surveyed banking system indicators. This change, effective upon December 2001, permitted devising the real picture of the financial flows, evaluating the demand for money and carry out agreed handling of the money supply.

The broad money components behaved the same annual pattern of quarterly seasonality. However, while the currency in circulation and the currency outside the Central Bank reported an underlying growth by Dram 34.0 billion each after an abrupt typical decline at the beginning of the year (in January, the currency in circulation reduced by Dram 9.2 billion, the currency outside the Central Bank, by Dram 8.6 billion), the deposits, foreign currency deposits in particular, behave this year in a way dissimilar to the pattern of prior years. This explains the fact that, besides the above factors, certain financial problems arisen

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[16] *Starting 2002, the monetary statistics is conducted based on data from 22 banks. The calculation of the monetary aggregates excludes the data of 6 banks, which undergo the Central Bank-appointed temporary administration or are in receivership. Recalculation started from December 2001, which is why this paper will provide no comparisons with prior absolute values, as well as program indicators, which are also based on data for the total system.*

[17] *Includes the amount of funds sold to a bank for repayment of external liability.*

at some banks at the beginning of the year have also affected such deposit flows, which induced an outflow of foreign currency deposits from the banking system. As a result, for the first time over the last years, reduced foreign currency deposits were reported earlier the year keeping to decrement until May. Then, persisted financial stability halted the funds outflow shortly, and later on banks saw these funds return. In the second half, rapidly growing foreign currency deposits helped regain not only the original level but also ensure higher growth rates, 16.3%.

The dram denominated deposits, unlike the foreign currency deposits, showed solid growth during the year, growing even speedier starting September, which is again determined by huge foreign currency inflow and real high growth. Influenced increasingly by these factors, the slowly growing dram deposits of the recent years turned to be fast growing ones, with growth rate of 95.4% in 2002.

The trends for faster growing bank deposits evince that financial intermediation during the year rose finding its reflection in the money and dram multiplier behavior. Sharp decrease in the money multiplier in the first quarter was due to adjustment in the said statistics. The dram multiplier however remained nearly unaffected as the share of the dram deposits was small at the banks that were removed from the calculation. Which is why the growth of the dram multiplier in 2002 averaged 3% to make up 1.08, while the money multiplier reduced by 9.2% to make up 2.0. The growth of both money and dram multipliers was somewhat subdued because of tremendous growth of cash outside the banking system and persistently high excess reserves throughout the year. The average annual excess reserves totaled Dram 1.7 billion (with the monthly band averaging Dram 1.0-2.5 billion), which had substantial impact especially in the first quarter.

The other indicator denoting the degree of financial intermediation, i.e. the monetization coefficient or the broad money to GDP ratio, trended downward in 2002 dropping from the previous year's average annual 13% to 12%. The cause of such decrease again lies in the statistical adjustment in the monetary aggregates and, partly, high economic growth. The break down of the economy by branches shows that rapidly growing industry and construction, which increasingly use the banking system for financial service, greatly contributed to high growth. So, this is another indication for rising financial intermediation.

The velocity of the dram slowed down during the year by 4.1% that has been offset in the velocity of money[18]. This was determined by the dramatic decrease in foreign currency deposits due to the adjusted broad money calculation above. The growth of velocity of money in 2002 was close to 9%.

Net foreign assets of the Central Bank and commercial banks were added during the year by Dram 38.7 billion and 20.4 billion, respectively. The Central Bank NFAs were replenished at the expense of large-scale external inflow, while commercial banks added their NFAs owing to growing profits of the household and the businesses that placed these with the banks as foreign currency deposits.

Bank lending to the economy in 2002 grew nearly by 2.6% (program indicator was 11.1%). The indicator is bigger in fact as banks charged large amount of bad loans off their portfolios this year too, worth of round Dram 10.0 billion. The matched growth rates on

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[18] *The velocities of money circulation and dram circulation are calculated using the GDP and broad money and dram broad money data produced by a method of seasonal smoothening.*

lending to the economy against growth rates on deposits attracted by the banking system (32.1% for dram, 16.3% for foreign currency) may affirm that part of the savings in the economy flowed out rather than being used in lending. Such outflow is explained also by huge growth of net foreign assets of commercial banks.

The monetary policy carried out by the Central Bank in 2002 encountered some unpredictable developments that hampered realization of the designed scenario. These include:

1. Unusually volatile annual inflation and much deeper deflationary phase.
2. Financial problems with some banks at the beginning of the year that pushed the Central Bank to make a systemic loan, not provided for in the program, of over Dram 3.0 billion to solve the issue.
3. Problems in the area of coordination of the monetary and fiscal policies, including unequal monthly collection of taxes, and uncertainties in i) disbursements of external funds, and ii) schedules of foreign debt servicing. The impact of the first of these developments on the pace of the monetary policy was in form of short-run abrupt volatility in banking liquidity. The second hindered smooth implementation of the monetary policy. The new development in this area was persisting high average daily balance of the Unified Treasury Account behaving incremental from quarter to quarter from Dram 1.9 billion in the first quarter to Dram 4.0 billion in the fourth. This issue has created difficulties for the Central Bank to handle liquidity especially at the end of biweekly period of reserve requirement. To level out these, the Central Bank has sometimes resorted to repo instruments. In such situations, banks too, have often looked to the Central Bank to make use of the standing facility, i.e. the Lombard loans.

The Central Bank has appeared with statements to address these issues above, of what should have to be done, and option of the instruments to be used, in particular. The two of these statements envisaged adjustments in further developments of the policy as the inflation at the beginning of June was considerably higher than the program indicator. This pushed the Central Bank to adjust the policy direction for the third quarter considering handling the monetary base close to the lower threshold of the band.

Execution of such policy reversed the picture in September, as the inflation was notably lower from the expected level due to 8% deflation in July-August as a result of steep fall in prices on seasonal goods, and provision of the annual program became quite risky for the Central Bank. In the first half of September, the Central Bank announced on reverse adjustment of the policy to make sure the monetary base has been close to upper threshold or, often, in excess of the limit that would require the Central Bank to inject liquidity concurrent with the financial inflow. The foreign currency purchase had been opted as the main injection instrument.

The Central Bank's monetary policy in the fourth quarter was more expansionary, with the monetary base constantly outrunning the upper threshold of the band growing by more than 38.4%. As a result, the Central Bank succeeded in smoothening the third quarter-reported deep deflation and achieving 2% annual inflation at the end of the year.

Despite mutable developments in the monetary policy throughout 2002, the annual growth of the monetary base markedly outpaced the projected rates to 38.5% instead of 8.9% (also outstripping the average annual indicator to 17.8% instead of 16%).

The Central Bank purchased 9.3 billion and sold 7.8 billion dram worth foreign currency using this as the main instrument in implementation of its policy. In the second half, it also used about 4.0 billion dram worth 7-14 day repo agreements to meet short-term liquidity requirements. Banks were active during the year to resort to the Central Bank standing facilities representing about 95% of annual deposits and 66% of Lombard loans in the first half of the year.

The change in the indicator of the monetary condition index (MCI) and matching of the monetary base calculated by money rules against the actual monetary base provide evidence about an expansionary nature of the monetary policy carried out by the Central Bank in 2002.

MCI dropped by 12.1 percentage points where the real exchange rate depreciation accounted for 9 percentage points, and real interest rates drop accounted for 3.1 percentage points affecting the index by weights 0.53 and 0.47, respectively. Calculation suggests that dropping MCI implies an expansionary pattern of the monetary policy that is fully consistent with a decrementing MCI as a result of the 2002 Central Bank policy.

The semiannual change in monetary policy development trends is well highlighted in calculation of money rules (Annex 7). It explicates that in the first half the monetary base was handled below the midline of the band, as the actual indicator was behaving downward in that period staying below the level of the rule-calculated monetary base. In the second half, rapidly growing monetary base and its excess over a rule-calculated indicator evinces more expansionary monetary policy by the Central Bank.

In the financial market, interest rates persisted to decline in 2002 at much slower pace though due to almost constantly high excess liquidity in the banking system. It is the treasury bills sector of the financial market of Armenia to respond to the events and liquidity fluctuations in the banking system in the first place, as currently it is considered the most buoyant market in which to invest. In this context, the annual volatile T-bills yield has incurred influence of fluctuating liquidity. Given a high level of excess reserves, the average annual yield in the T-bills primary market dropped by more than 5 percentage points by May, it grew by 3.6 percentage points by August, and dropped again by end-year. An exception was the yield on coupon bonds issued in the fourth quarter with period of maturity of 4-5 years, which grew by 2.5 percentage points against the previous issue. The Treasury has considerably extended period of maturity of bonds. This made the annual yield on medium term coupon bonds to preserve the last year's closing level of 19.9%, and interest rate on 9-12-month securities to fall by 1 percentage point from 16.4% at the beginning of the year.

Average annual interest rates on loans and deposits trended downward to 24.2% and 7.9% at the end of the year from the previous end-year's 28.8% and 12.1%, correspondingly. The interest rates on both the dram and foreign currency denominated deposits and loans dropped at the same pace to allow their spread to remain almost unchanged decreasing merely by 0.4 percentage points. Falling interest rates were also due to certain banks that were discouraged to participate in the financial market because of their involvement in unreasonably risky business.

The Central Bank's intervention in the dram market in 2002 was sluggish that has firmly ensured steady interest rates on the Central Bank operations during the year. In February, the Board of the Central Bank lowered the interest rates on repo agreements by 1.5 percentage points and interest rates on standing facilities, by 2 percentage points. These were however left unchanged until the end of the year at 13.5% on repo agreements, 28% on Lombard loans, and 6% on deposits attracted by the Central Bank.

THE MAIN ISSUES AND DIRECTIONS OF THE MONETARY POLICY IN 2003

The monetary policy in 2003 would be targeted to maintain the macroeconomic stability and handle the money supply consistent with high economic growth rates. Huge foreign currency inflow to the country and its absorption by the economy would carry on over 2003 as well that would bring in anticipation for abrupt grow of money supply. In view of ensuring financial stability, preventing shocks in the foreign exchange market and smoothing liquidity fluctuations in the banking system, the Central Bank considers that deviations from projected money supply indicators in the short-run are possible to happen.

The Central Bank will carry on volume management of the monetary aggregates to ensure a maximum 3% level of inflation under expected 6% economic growth.

In pursue of handling the money supply, the development of the monetary policy included evaluation of the demand for money, consistent with the macroeconomic indicators above (Annex 9). The real GDP and the real dram broad money indicator of the previous period were included in the real money stock demand function as explanatory variables. Further, a linear homogeneity of the money demand with respect to prices is assumed to exist where a one percent change in prices induces an equivalent change in the money demand.

The interest rate, another key indicator to describe speculative demand for money, is not included in the series of explanatory variables of the money demand function as dependence of the money demand upon the interest rate in Armenia is not significant, given underdeveloped financial markets and big proportion of the currency in the monetary aggregates.

The forecast made through the money demand function reports that growth of the dram broad money at the end of 2003 would be 9.6%, the average annual growth, 34.3%, outpacing the nominal GDP growth rate by 24.9 percentage points. Growth rates on currency and dram denominated deposits in the dram broad money would be 5% and 20.9%, accordingly. Expected high growth rates in the construction and industry are among the factors to determine surpassing growth in the dram denominated deposits projected for 2003.

High growth rates on foreign currency denominated deposits would persist in 2003. The FX deposits are expected to grow at the end of the period by 17.3%. Such high growths of the FX deposits are determined by inflow of the foreign currency resources (as private transfers, in particular) and continuous growth in exports as interest rates persistently fall.

Attributable to high FX deposit growth rates above, the growth rate on the broad money would slightly outstrip the growth of the dram broad money in 2003 to make up 12.7% (with average annual growth of 28.6%).

In the context of these developments, velocity of the broad money in 2003 would keep on trending downward,[19] to decline by 14.9% during the year. Remarkably, the predicted velocity of the broad money in the program period would be slower with respect to the indicator for both 2002 and 2001. Similarly, velocity of the dram broad money would decline by 18.6% compared to the previous year's indicator, due mainly to fast growing dram denominated deposits.

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[19] *Increased indicator of velocity of the broad money in 2002 explains exclusion of the data of 6 banks, which have been under the Central Bank temporary administration or receivership, from the monetary aggregates calculation. Consequently, the monetary aggregates and their components were reduced automatically.*

The deviations in average interest growth rates at the end of the period were impressive enough as the monetary aggregates reported sharp growth at the end of 2002, owing to over 20 billion dram conversion of funds for external financing of the budget at the Central Bank. Thus, the dram broad money grew in the fourth quarter of 2002 by round Dram 28.3 billion or by 30%; its sharp growth in late 2002, in view of relatively longer period for required long-term equilibrium, would determine fast declining rates of money velocity in 2003.

Both the dram and the money multipliers would trend upward in 2003 to 7.5% and 2.8%, accordingly. Fast growing dram and foreign currency denominated deposits, and a lowered reserve requirement ratio of 6% against the former 8%, effective July 1, 2003, introduced by the Central Bank as a change in Regulation 2, would contribute to an increase in the multipliers above. The lowered standard of reserve requirement would provide an expected increase in excess reserves in correspondent accounts of banks at about Dram 3.2 billion. Part of this would be used in lending to the economy, and the rest would be offset by the Central Bank by use of absorbing monetary instruments.

Under these trends for the monetary aggregates and multipliers, the monetary base at late 2003 would be within the indicator similar to the level reported at the end of 2002; the growth rate would be 0.1%, and the annual growth rate would average 25%.

With the monetary base growing at such pace, the monetary impulses indicator of 9.2% would be consistent with an expected increase of the nominal GDP by 9.4% (Annex 8). In the first three quarters, the cumulative indicators of the money impulses would outpace cumulative growth rates on the nominal GDP owing to a steep increase of the monetary base as at the end of 2002. Such growth, however, would revert to the level of long-term equilibrium over 2003. This is provided also in the analysis of Base Money Rule (Annex 7).

The quarterly pattern of the monetary base would preserve seasonality. It would reduce during the first quarter by 14.7% (by round 10% in the same period of the previous year) to trend relatively smoother growths in the course of the next three quarters by 3.2%, 2.6% and 10.8%, respectively.

The band of the monetary base would not change; in 2003, it again would be ± 2%.

The monetary base would grow in the event part of the resources to finance the budget, accumulated in the Unified Treasury Account and deposit accounts at the end of 2002, was expended. This would lead to an increase in net government liabilities to the Central Bank by nearly Dram 8.6 billion to reach Dram -1.0 billion at the end of the year. About half of such increase (Dram 4.2 billion as at the end of 2002) would occur during the fourth quarter 2003 determined by transfer of funds of the Lincy Foundation that were accumulated in the Central Bank accounts yet in late 2002. This transfer would take place along with corresponding decrease in net foreign assets of the Central Bank.

The Central Bank intends to offset government expenditures through dram instruments such as reverse repo contracts and deposits, and expenditures at the expense of external resources, through sale of foreign currency.

The growth of net other assets of the Central Bank in 2003 would depend on transfer of the Central Bank's 2002 profit to the Government.

Part of the funds obtained by banks would be used to finance the domestic public debt: the Government plans net allocation of government securities of Dram 2.0 billion in 2003.

The residual of the funds provided for private sector lending would grow at the end of the year by round 11.0%. This growth would outrun the real private investment growth by nearly 2.5% reflecting broadening financial intermediation. Generally, introduction of a deposit

guarantee scheme, ongoing remedies in the banking system, improved loan portfolios, and shrinking share of uncollected loans would provide enhanced financial intermediation and increased economy lending. Broadened scope of activities of non-bank financial institutions, credit institutions in particular, for which regulatory and organizational framework was built, also promote stronger financial intermediation.

Despite a general tendency to decline, interest rates in Armenia still remain relatively high. There is anticipation that the market interest rates would carry on dropping in 2003 as well. Also, the interest rates on government securities are predicted to decline slower as the period of maturity of primary market securities would get longer.

The trends of reducing interest rate spread would persist. Lowered reserve requirement standard to 6% from 8%, effective July 2003, and lessened commercial bank provisioning, owing to improving loan portfolio quality, would contribute to further reduction of the spread.

The monetary policy of 2003 would generally focus on the issues as follows:

- Because deviations from the program indicators are likely in a short run in view of huge financial inflow and uncertainties in amount and schedule of resource disbursements, the Central Bank would carry on the practice of program adjustments for the next period through quarterly reports and statements to level out sharp price fluctuations in the financial market.
- Given the previous year's disproportional monthly collection of taxes and a resultant erratic balance of the Unified Treasury Account, there arises a scope for broader coordination of the monetary and fiscal policies in this area to ensure smoother management of the banking liquidity.
- The choice of the monetary instruments and streamlined combination of these should deserve the Central Bank's special attention in 2003 too, that would allow more fluent handling of the money supply to lead to improved efficiency of the monetary policy transmission mechanism.

THE RISKS IN EXECUTION OF THE MONETARY POLICY PROGRAM

Divergences from predicted developments in the implementation of the monetary policy in the course of 2003 may be likely to happen thus making provision of the target indicator of inflation risky. Such divergences could be displayed in the areas as follows:

The real sector

The issues that could arise in the real sector depend someway upon redistribution of incomes and expected autonomous financial inflow. Particularly, concurrent with expected high aggregate supply, the share of private consumption in the GDP might report an unexpected decline. In other words, the demand for basic consumer goods and services would grow relatively slower. There is much probability that the actual economic growth would outgo the program 6%. In such situation, the inflation might incur marked pressure, but there might also be possible expansionary impact on the inflation.

Sufficiently high real GDP growth rates of the last two years have enabled to curtail the gap between the real GDP and potential GDP. With autonomous flows fostering broadening of the aggregate demand, it is likely to report surpassing growth in relation to the aggregate supply during 2003 contributing to reduction of the GDP gap and pressing on prices.

The fiscal sector

The issues arisen in the fiscal policy area in the recent years evince that the risks in this area over 2003 may have both expansionary and restrictive patterns.

The risks are more likely to have restrictive patterns as shortfalls of and delays in disbursements from the World Bank and other financial institutions may carry on during 2003 as well. A shortage in planned annual portion of grants from the Lincy Foundation is also likely, which could entail incomplete expenditures.

The expansionary risks could emerge provided that external resources for the budget deficit financing would have arrived in full and the third SAC tranche, stipulated in the annex to Armenian Law on the Budget, would have been provided to repay former debt. In this situation, the aggregate demand would obviously outstrip the projected level to make the inflation and economic growth indicators to deviate from the program.

Should collection of tax revenue of the budget remain to be disproportional in 2003, as has been typical for the recent years, there might arise problems in the area of banking liquidity. Besides, this might be a bottleneck in maintaining stability in the financial markets of Armenia.

The external sector

The risks emanating from the external sector are, in terms of balance of payments sustainability, small enough compared to previous years as the current account deficit is shrinking and the other sources of its financing behave steadily. However, there is anticipation that Armenia's membership to the World Trade Organization would foster increased exports, which might possibly be a cause for local price rise.

Other potential risks anticipated from the external sector could relate to substantial fluctuations in imports prices. These may include high uncertainty in oil prices, associated

with world geopolitical risks (war in Iraq, and some other factors). According to pessimistic scenario, the world prices on oil products may increase by about 15%, whereas the scenario set forth in the program reckons on a decrease by 3%.

The next important factor is possible appreciation of the euro and the pound sterling and Swiss franc that could be considerably higher than anticipated, based on the appreciation trends in the fourth quarter 2002.

Thus, the impact of the risks anticipated from the external sector on the inflation in 2003 would be increasingly upward.

The financial sector

The risks coming from this area would place mostly expansionary impact on the inflation. Particularly:

- Accomplishing banking system rehabilitation process, healthy pace of the banking business, and establishment and development of non-bank financial institutions in early 2003 would create conditions conducive for stronger financial intermediation. This would produce a multiplier effect greater than anticipated, hence, broadened money supply. It, naturally, would have an expansionary impact on the inflation.
- Pace of the monetary policy of 2002 would recur in 2003. Short run steep fluctuations (mostly upward) of the monetary base are likely to occur during the year due to unequal distribution of huge financial inflow, which is going to be greater in value than it did in the previous year. The sterilization of non-recurrent inflow of these funds in the short-term would produce pressure on price indicators in the financial market either raising the interest rates or appreciating the dram exchange rate. Further, leveling out steep price indicator fluctuations in the financial market may result in the money supply excelling the underlying money demand. Considering year-round nature of the financial inflow, the above gap in the money market would persist reflecting the behavior of prices in the commodity market.

In the event these risks emerge in executing the monetary policy program, the Central Bank would pursue a policy of allowing minimum deviations from the levels set in the program of monetary indicators. The policy however presumes handling of the monetary base within the band. Such policy path is desirable as businesses in the banking system and elsewhere in the economy consider not to see essential changes in expectations with respect to the monetary policy program.

Nevertheless, in the event of accelerating inflation, with the annual target indicator hitting its permitted highest, the Central Bank would revise the monetary policy program to reduce the money supply growth rates. Should the economic growth indicator recur its 2001-2002 behavior, and the inflation be considerably lower 3%, the Central Bank would revise the program to accelerate the monetary base growth rates.

THE DEVELOPMENT OF THE BANKING SYSTEM

Development trends

With low inflation, steady dram value, falling interest rates, increasing competitiveness, and etc., the banking system entered a new phase by quality. The sector gave shelter to sound or otherwise healthy banks that took robust position in the financial market owing to a flexible management system.

The sector was not free of weak banks too. These were still successful in covering losses, resulted from mismanagement and risky and imprudent policy, using their big profits benefited from weak competitive environment and wide difference between interest rates on resources attracted and allocated. The situation with these banks exacerbated as positive shifts in the economy were accompanied with falling interest rates, shrinking interest margin and earnings, and intensifying competitiveness in the banking market. Huge quantity of poor quality loans of these banks resulted in actual insolvency.

In such situation, the Central Bank embarked on purging insolvent banks from the sector. This process carried on over 2002 as well. It aimed at reducing the systemic risk in the banking sector and ensuring utmost collection of resources invested with the insolvent banks. Certain amendments to banking laws (law entitled the Board of the Central Bank to recognize a bank insolvent; it vested the Central Bank with broad authorities to evaluate bank activities more comprehensively using judgments based on internationally accepted objective criteria) helped to quickly respond to, and prevent, inefficiencies in insolvent banks.

As at January 2002, Armenian banking system had 30 banks with 240 branches. 22 banks were operating under the general monitoring, 8 banks, under special monitoring. In 2002, four banks terminated their activities, and two banks merged. To encourage mergers, the Central Bank extended systemic credit. As at December 2002, the sector counted 25 banks with 231 branches. 20 banks were operating under general monitoring, 5, under special monitoring.

Banks operating under general monitoring are real financial intermediaries, and their financial figures generally trend upward.

Banks operating under special monitoring are regulated by financial rehabilitation plan approved by the Board of the Central Bank, in accordance with requirements in Armenian Law on “Bank and Credit Institution Bankruptcy”. Banks are administered by temporary administrations appointed by the Central Bank. By March 1, 2003, a liquidation process shall begin in 3 banks out of 5 under special monitoring.

Liabilities of the banking system[20] grew by about 12%, liabilities of the banks under general monitoring, by about 26.1%. Deposits attracted from banks grew by 25.7%, deposits of individuals, by 21.4%, deposits of legal entities, by 12%, demand liabilities, by 53.3%. The growth of bank-attracted deposits explains active participation of Armenian banks in foreign interbank market. The growth of legal entity liabilities determines increased amounts of temporarily free resources of legal entities for investment in the banking system. The deposits of individuals grew owing to increased earnings of households and growing confidence of population in the banking system. The growth of demand liabilities explains the country’s reviving business environment in 2002.

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[20] *The analysis of the banking system was made by comparing general indicators of 30 banks functional in the system as at 31/12/2001 with general indicators of 25 banks functional in the system as at 31/12/2002.*

It is expected that the growth of deposits would carry on trending upward in 2003, too. Growing trends for high technology services provided by the banking system allow foreseeing that it would considerably broaden the customer base and seriously contribute to deposit growth. 2003 would see enhanced population confidence in the banking system as the sector is almost cleansed of uncompetitive and insolvent banks that produce obstacle in shaping confidence.

The total capital of Armenian banking system in 2002 decreased by 35.5% or Dram 7.2 billion. The total capital of banks operating under general monitoring increased by 29.4% or Dram 9.6 billion owing to an increase in statutory fund and current year profit. The statutory fund grew as the minimum total capital requirement was set to be an amount equivalent to USD 1.650 million, effective July 1, 2002. The goal of increasing this limit was to upsize the banks and raise reliability of the banking system. Starting the second half of 2002, the sector reported profit that has exceeded the previous cumulative loss.

The total capital of the banking system is expected to have growth trends in 2003, as the statutory fund of the system would grow at the expense of external sources, and because there is anticipation for considerable profit.

The expected growth of the banking system statutory fund is determined by:

- a new total capital standard limit set to be an amount equivalent to USD 2.0 million effective July 1, 2003;
- wish of seeking more competitive position in the banking market as banks, even those that have no problems relating to new total capital adequacy standard, would be inclined to increase statutory fund using external sources.

The expected considerable profit of the banking system in 2003 is explained by:

- growth of interest income attributable to economic growth and growth of earning assets, loans among them, in line with deposit growth;
- growth of income on commission fees attributable to increased quality of banking services and broadened base of service users.

Although move of certain banks from the field of general monitoring implied a decrease in banking system assets, considerable growth of assets at performing banks resulted in growth of the assets of the system by 7.8% or Dram 18.1 billion. The banking system in 2002 reported growth of total assets; loan investments grew by nearly 7.6%, high liquid assets, by round 46%.

Total assets of 20 banks operating under general monitoring grew by 26.7% or Dram 48.2 billion in 2002. Loan investments of the banks performing under general monitoring grew by 26.2%. These growths were concurrent with 16.3% growth of the GDP. The assets of these 20 banks made up 17% of the GDP. 21.4% growth of physical entity deposits of these 20 banks was concurrent with 14.5% growth of the gross national disposable income. Lending to construction grew by 67.8%, to trade, by 68.7%, and to industry, by 24.6%. The industry reported increased lending to ore and minerals, building materials and energy spheres.

Assets of the banking system are expected to grow in 2003. These would be used in lending to the real sector, as economy shows steady growth trends, and because there would not be substantial growth in the government securities market in 2003.

Bank operations in international interbank markets, securities markets and transfer markets revived. Banks are involved in various international lending projects, such as small and medium-size business promotion project under European Bank for Reconstruction and Development, the Lincy Foundation; enterprise development project under the World Bank; and programs under the German - Armenian Fund. Reportedly, rate of collection of the loans provided by the German - Armenian Fund reaches 98-99%.

The growth of financial indicators of the banks performing under general monitoring in 2002 recompensed the indicators of the banks performing under special monitoring.

The banking system is, unfortunately, not free of problems. The share of poor quality loans, related party lending, and corporate management related issues deserve proper attention. The Central Bank will continue remedies in 2003 to improve management systems of banks. Great attention shall be paid to make sure that bank internal control systems and their consistent operations are in place. For effective internal control, the bank internal audit will remain to be viewed by the Central Bank as a key component in internal control systems. The plans for improvement of bank management systems include clarification of authorities of various management bodies of a bank, determination of relations between them, and more importantly, specification of scope of responsibility of each of these.

In 2003, the Central Bank will do further work to improve the risk-based supervision. It developed and will soon publish the manual *Implementation of inspections at banks.* Some others are being developed to help to carry out inspection on a risk-based supervision basis.

Banking legislation

The development of the banking system also implies improved legislative and regulatory frameworks. Certain amendments were made to banking laws and regulations, and some new regulations were adopted. These developments include:

- Adoption of Regulation 7 *Financial rehabilitation of banks and credit institutions* that regulates activity of temporary administration at insolvent banks and credit institutions;
- Adoption of Procedure *Commercial banks' presentation of prospective development program to the Central Bank* and the Form *Model prospective development program* to give new quality to development programs.
- New chart of accounts for accounting treatment at Armenian banks, effective January 2003, to allow the banks to carry out accounting closer to international standards.
- Procedure *Creation of credit registry, an information system on creditworthy customer of banks, credit institutions, foreign bank branches operating in Armenia; participation in credit registry*, to be effective in 2003.
- Improvements in bank regulatory papers for further regulatory clarification and risk minimization.

Underlining the importance of prevention of criminally obtained funds, the Central Bank initiated changes introduced to Armenian Law on "Banks and Banking", and adoption of Regulation 5 *Safeguarding banks and credit institutions from circulation of criminally obtained funds and terrorism*, to be effective in 2003.

Armenian Law on "Credit Institutions", adopted in 2002, and the main regulatory package for credit institutions are designed to shape non-bank financial institutions. This

package includes: Regulation 13 *Registration and licensing of credit institutions; record of branches and representations; manager qualification*; Regulation 14 *Prudential economic standards for credit institution activity; regulation of activity*; Regulation 15 *Credit institution statements, reporting and release*; Procedure *Consumer loan provision by credit institutions*; *Model regulation for credit institution activity*, and *Chart of accounts for accounting treatment at credit institutions*. These regulatory papers would be effective starting January 2003.

In 2003 too, the Central Bank would carry on clarifying and improving banking legislation. The Central Bank intends suggesting legislative amendments and new laws, as follows:

- transparency in activity of a temporary administration; clearer responsibilities for receivers, new order of priority of claim - to introduce to Armenian Law on "Bank and Credit Institution Bankruptcy";
- clarification to issues related to a deposit insurance scheme designed by the Central Bank - to introduce to Armenian Law on "Central Bank";
- clarification to regulation of check circulation, collateral enforcement mechanisms - to introduce to Armenian Civil Code;
- clarification to: i) observance of liabilities to the budget by taxpayer customers of a bank; ii) transfer of taxpayer's liabilities to a bank once the fee due has been paid to the bank - to introduce to Armenian Laws on "Taxes", "Social Insurance Pays", "Road Taxes", "State Duty";
- release of property obtained through financial lease from VAT - to introduce to Armenian Law on "Value Added Tax";
- clarification to a procedure on implementation of inspections at banks - to introduce to Armenian Law on "The Central Bank";
- adoption a law on payment and settlement system;
- adoption of a law on collection firms carrying out safe transportation of values.

Institutional development

Creation of a credit registry and an individual deposit guarantee scheme comes as a key component in view of institutional development of the banking system.

Armenian Law on "The Central Bank" has provided for creation of the bank deposit guarantee scheme stipulating that all type of dram and foreign currency denominated deposits of individuals shall be subject to guarantee. Effective July 1, 2003, banks will commence contributions, and recompense of the guaranteed fees shall be offered starting July 1, 2005. The mandatory deposit guarantee would enhance the population's confidence in Armenian banking system and encourage the banks to attract savings more efficiently.

The credit registry will operate starting January 2003. The goal of such registry lies in creation of an information system to help prevent from bad borrowers thus minimizing credit risk. Within the framework of credit registry, banks would be given an opportunity to run more prudent and consistent policy in allocating their assets.

Legislative foundations were laid in 2002 to institutionalize credit institutions. The legislation provides for 5 types of entities, as follows: credit union, savings unions, leasing, and factoring firms and versatile credit institutions. The versatile credit institutions would be involved in lending to the economy rather than offering banking services of taking deposits,

demand resources; carrying out settlement operations and bank account service. Existence of these institutions would promote increased financial intermediation, and allow healthy banks to restructure into credit institutions should they fail to meet minimum capital requirements.

Currently, there are some workable credit projects in Armenia awaiting license of the Central Bank once the law on credit institutions enters into effect. These projects would foster a ground on which to develop the credit institutions sector. At least 3 such institutions are expected to pass registration in 2003.

THE DEVELOPMENT OF THE PAYMENTS AND SETTLEMENTS RELATIONS

The Central Bank's plans in 2003 for further development of the payment and settlement system include:

1. Improvement in interbank payment system operations, taking into account the international experience in this area;
2. Action to encourage non-cash circulation in Armenia;
3. Introduction of payment and information systems that are now under development;
4. Improvement of the law framework for the payments and settlements relations.

The Central Bank would develop a new concept and principles for electronic payment system during 2003. Due attention would be paid to the system's efficiency operations, minimization of eventual risks, the system's capacity, higher reliability and safety measures, considering current international criteria that are presented in projecting and developing similar systems.

In view of a new legal framework for circulation of the government securities, the Central Bank plans to install a DVP-based module to ensure operation of the government securities accounting and settlement system in the secondary market. Further work would be done to install a module in the system to carry out operations on pledging.

Pursuant to the unified "Armenian Card" plastic cards payment system, the ArCa system, which was created in 2001 to provide improved financial and banking services and develop the retail payments market, work would be done to ensure wider use of non-cash payment instruments in Armenia. The plastic cards would be used as a means of payment not only in commerce and services, but also in payments for electric energy, gas, heating, water and other public utilities. The Central Bank intends measures to make salary, pension fee, social allowance and other type of fees payable through the banking system.

Further work in 2003 for improvement of the card payment system and service network enlargement would include installments of new ATMs and POS terminals in both Yerevan and certain regions of Armenia.

The Central Bank will carry on developing the law on payment and settlement system, and drafting regulatory papers for activity of organizations providing payment and settlement services, as set forth in Armenian Law on "Licensing".

In view of rapidly growing plastic cards system in Armenia, the Central Bank plans for 2003 include designing measures to prevent fraud and falsification in plastic cards, checks and other payment instruments area and minimize the associated risk.

In 2003, the Central Bank will carry on improving efficiency in its internal automated systems.

Commentary for the main indicators

1. There are data discrepancies in actual nominal GDP and its expenditure components, real growth rates and deflators among the monetary policy programs for 2003 and 2002 and other publications of the Central Bank. In 2002, the National Statistics Service of Armenia (NSSA) revised these indicators and published them in the report Socio-economic situation in Armenia, January-May and January-June, 2002 issues. The Central Bank used the revised data in preparing the program for 2003.
2. The 2001 indicators are still subject to revision; the 2002 indicators are: i) preliminary data by the NSSA, and ii) estimations by the Central Bank.
3. The 2002 and 2001 external and fiscal sectors indicators used in the 2003 and 2002 programs, respectively, are: i) preliminary data by the NSSA and MoFE, and ii) estimations by the Central Bank.
4. The aggregate and private sector disposable income indicators were calculated by the Central Bank.
5. The indicators of the tables Broad Money Structure and Monetary Base Structure for the end of 2002 are preliminary and subject to revision. The figures used in section Development of the Banking System are not compatible with those provided in other sections and annexes of the program because of different classification and grouping. In addition, the broad money figures were calculated involving indicators of the 22 banks operating in Armenia, as the nature of liabilities of these banks conforms to the definition of money set forth in Monetary and Banking Statistics Manual of the Central Bank.
6. The Central Bank Net Foreign Assets indicator for 2001 differs from the same indicator for 2002 because of different program exchange rates. Hence, the Central Bank Other Assets Net figures for 2001 differ, too.

Macroeconomic indicator survey

	2000	2001	2002	2003
National income and prices (interest change)				
Real GDP growth index	105.9	109.6	113.0	106.0
GDP deflator	98.6	104.0	102.9	103.2
Consumer price index (period end)	100.4	102.9	102.0	103.0
Consumer price index (period average)	99.2	103.1	101.1	103.2
External sector				
Export of goods and services (share in GDP)	23.4	25.5	28.5	31.0
Import of goods and services (share in GDP)	50.5	46.2	44.8	46.7
Current account (excluding official transfers, share in GDP)	-19.9	-12.9	-9.4	-9.1
Current account (including official transfers, share in GDP)	-14.6	-9.5	-6.9	-6.7
Import coverage (by months)	3.9	4.0	4.8	4.3
Exchange rate (period average)	539.5	555.1	573.4	586.4
Exchange rate (percentage change)	0.9	2.9	3.3	2.3
Public sector				
Budget revenue (share in GDP)	19.8	20.0	19.6	19.5
Budget expenditure (share in GDP)	25.0	23.6	21.9	22.7
Budget deficit (share in GDP)	-5.1	-4.7	-2.0	-3.2
Capital investments and net credit (share in GDP)	5.4	4.7	4.0	4.6
Monetary sector				
Broad money growth, % (M2X average)	22.8	27.0	6.9	28.6
Broad money velocity (GDP/M2X average)	8.6	7.7	8.4	7.4
Money multiplier (M2X)	2.1	2.2	2.0	2.1
Dram broad money growth, % (M2 average)	10.1	24.2	21.3	34.3
Dram broad money velocity (GDP/M2 average)	17.6	16.2	15.5	12.6
Dram broad money multiplier (M2)	1.04	1.04	1.08	1.16
Monetary base, % (average)	15.1	23.8	17.8	25.0

GDP expenditure component deflators and real growths

	2000	2001	2002	2003
Deflators				
GDP deflator	98.6	104.0	102.9	103.2
Consumption deflator	97.5	103.9	101.0	102.9
Public	100.8	103.2	101.0	102.9
Private	97.2	103.9	101.0	102.9
Capital investments deflator	100.9	101.2	106.0	106.2
Public	100.9	101.2	106.0	106.2
Private	100.9	101.2	106.0	106.2
Export deflator*	101.8	101.6	104.2	102.0
Import deflator*	101.4	102.7	103.9	102.4
Real growth index				
GDP	105.9	109.6	113.0	106.0
Consumption	107.7	105.7	107.8	104.5
Public	102.8	100.0	115.8	110.0
Private	108.3	106.4	107.0	104.0
Capital investments	105.2	112.6	119.0	115.6
Public	93.8	98.5	176.5	145.9
Private	113.6	116.5	105.9	104.0
Export of goods and services	118.9	122.8	124.4	116.6
Import of goods and services	107.2	100.8	109.2	111.4

** Central Bank estimates.*

GDP by expenditure components

	2000	2001	2002	2003
Current market prices (million of Dram)				
Nominal GDP	1031338	1175487	1366836	1494999
Consumption	1123495	1233375	1344369	1447249
Public	121791	125777	147116	166504
Private	1001704	1107598	1197253	1280744
Capital investments	192278	219016	276409	339252
Public	40874	40840	76419	118437
Private	151405	178176	199990	220815
Export of goods and services	241083	300637	389746	463411
Import of goods and services	521277	539976	612539	698833
Statistical discrepancy	-4241	-37565	-31149	-56080
Net factor income	28758	35296	35085	38690
Net transfers	101706	96740	93795	96166
Public	46258	56785	59380	60983
Private	55448	39955	34415	35183
Gross national disposable income	1161802	1307524	1495716	1629855
Private sector disposable income	1036107	1165734	1290928	1395134
Percentage change index				
Nominal GDP	104.4	114.0	116.3	109.4
Consumption	105.1	109.8	109.0	107.7
Public	103.6	103.3	117.0	113.2
Private	105.3	110.6	108.1	107.0
Capital investments	106.1	113.9	126.2	122.7
Public	90.8	99.9	187.1	155.0
Private	111.2	117.7	112.2	110.4
Export of goods and services	117.6	124.7	129.6	118.9
Import of goods and services	106.0	103.6	113.4	114.1

Balance of payments

(million of US dollars)

	2000	2001	2002	2003
Current account (including official transfers)	-278.4	-200.5	-163.8	-171.5
Current account (excluding official transfers)	-380.9	-272.4	-223.8	-231.5
Trade balance	-463.5	-420.2	-345.8	-355.5
Exports	309.9	353.1	509.2	605.3
Imports	-773.4	-773.3	-855.0	-960.8
Services, net	-55.8	-17.8	-42.8	-46.0
Credit	136.9	186.5	170.5	185.0
Debit	-192.7	-204.3	-213.3	-231.0
Income, net	52.9	63.5	61.2	66.0
Private transfers, net	85.6	102.1	103.6	104.0
Official transfers, net	102.5	71.9	60.0	60.0
Capital and financial account	295.4	201.5	242.8	163.0
Capital transfers	28.3	30.1	59.9	80.0
Foreign direct investments	104.2	69.9	77.0	173.7
Portfolio investments	-18.9	-5.7	1.5	0.0
Public sector, net	63.0	62.6	62.6	-15.5
Disbursements	87.8	101.6	94.7	117.7
Amortization	-24.8	-39.1	-32.0	-133.2
Other capital	118.7	44.6	41.8	-75.2
Privatization account	11.3	12.8	-6.8	0.0
Net foreign assets of banks	-21.4	-25.3	-34.8	-20.0
Other capital of private sector	128.8	57.2	83.4	-55.2
Overall balance	17.1	1.0	79.0	-8.5
Change in gross international reserves (-growth)	-19.2	-19.7	-81.0	5.0
Change in gross international liabilities (+growth)	-14.9	7.3	12.1	3.5
International Monetary Fund, net	-16.4	3.5	7.5	3.5
Purchase/disbursement	0.0	13.0	25.1	27.1
Repurchase/repayment	-16.4	-9.5	-17.7	-23.6
Other, net	1.5	3.8	4.6	0.0
Financial gap	-17.0	-11.4	10.1	0.0
Error and omission	17.0	11.4	-10.1	0.0
Vertical review	0.0	0.0	0.0	0.0
Exchange rate (AMD/USD), period average	539.5	555.1	573.4	586.4

Export and import prices

	2000	2001	2002	2003
Exports				
Total	100.9	98.7	100.9	99.7
Investment commodities	98.9	102.1	100.0	100.0
Consumer goods	104.9	100.8	101.9	102.3
Diamond	99.9	100.3	100.0	100.0
Intermediate consumer goods	99.0	96.5	99.7	97.6
Exports, total (in Dram terms)	101.8	101.6	104.2	102.0
Imports				
Total	100.5	99.9	100.6	100.2
Investment goods	101.8	99.7	100.2	100.6
Consumer goods	100.5	105.3	105.8	104.7
Intermediate consumer goods	98.4	95.9	98.5	97.6
Oil product	107.6	102.7	96.1	97.0
Diamond	97.4	102.9	100.0	100.0
Natural gas	96.9	98.4	100.0	100.0
Imports, total (in Dram terms)	101.4	102.7	103.9	102.4

Cash flows of Central Bank foreign assets and liabilities

(million of US dollars)

	2000	2001	2002	2003
Interest on Government loans	-9.6	-9.9	-7.0	-8.6
Interest on Russian loans	-6.1	-5.9	-9.9	-1.9
Interest on Central Bank loans	-3.0	-2.2	-1.5	-1.4
IMF	-3.0	-2.2	-1.5	-1.3
KfW	0.0	0.0	-0.1	-0.1
Income on international reserves management	19.0	15.3	9.7	8.9
Interest on Georgian loan	0.8	0.4	1.1	0.7
Repayment of Georgian loan	0.0	0.0	0.0	3.9
Loans to Government	20.6	-3.2	14.2	0.5
Multilateral (excluding IMF loan, net)	17.8	6.4	26.6	31.0
Disbursement	25.3	14.4	35.1	40.0
SAC	25.3	14.4	35.1	40.0
Amortization	-7.6	-7.9	-8.5	-9.0
Bilateral	2.8	-9.7	-12.4	-30.5
Disbursement	7.4	6.8	0.3	0.0
Amortization	-4.5	-1.8	-12.6	-30.5
Repayment of Russian loans	-12.7	-14.7	0.0	0.0
Loans to Central Bank	-14.8	7.3	12.1	3.5
IMF loans	-16.2	3.5	7.5	3.5
Disbursement	0.0	13.0	25.1	27.1
Amortization	-16.2	-9.5	-17.7	-23.6
KfW	1.5	3.8	4.6	0.0
Disbursement	1.5	3.8	4.6	0.0
Amortization	0.0	0.0	0.0	0.0
Other	-0.2	0.0	0.0	0.0
Lincy grants	18.3	11.3	50.1	64.0
Other grants		13.1	26.4	20.3
Conversion from privatization funds	41.4	12.8	8.8	0.0
Other conversions*	-5.9	-19.2	-22.9	-94.9
Change in gross international reserves	19.2	19.7	81.0	-5.0
Change in gross foreign liabilities	-14.8	7.3	12.1	3.5
Change in net foreign assets	34.0	12.4	69.0	-8.5
Memorandum items				
Privatization funds	16.4	3.6	10.4	10.4
Gross international reserves (by program exchange rate)	313.7	330.1	430.2	425.2
Gross foreign liabilities	178.3	179.0	206.9	210.3
Net foreign assets (including KfW)	135.4	151.1	223.3	214.8

** Includes Central Bank interventions to the interbank market, and conversions for Government membership fee, etc.).*

Broad money

(million of Dram)

	2000	2001	2002					2003				
			Q1	Q2	Q3	Q4	2002	Q1	Q2	Q3	Q4	2003
Net foreign assets	60531	81410	84491	94679	112109	143816	150775	132790	139358	145744	157527	157527
Central Bank	74783	84908	81764	84002	94867	123657	130616	109698	113337	116797	125640	125640
Commercial banks	-14253	-235	2727	10677	17242	20159	20159	23092	26022	28947	31887	31887
Net domestic assets	90069	75935	64752	60705	65107	67919	60960	67152	67759	72757	81110	81110
Domestic credit	113340	103016	85853	85268	88667	94768	94768	94292	103921	108502	116226	116226
Public sector	31149	20054	11350	8427	10472	15470	15470	21203	21003	20603	24753	24753
Government	9301	9396	2384	-128	-5136	-138	-138	5595	5395	4995	9145	9145
Public organizations	21848	10658	8966	8555	15608	15608	15608	15608	15608	15608	15608	15608
Private sector	82191	82962	74503	76841	78195	79298	79298	73089	82918	87899	91473	91473
Other assets, net	-23271	-27081	-21101	-24563	-23560	-26850	-33809	-27140	-36162	-35745	-35116	-35116
Broad money (M2X period end)	150599	157345	149243	155384	177216	211735	211735	199942	207117	218500	238636	238636
Currency in circulation	59486	65037	58862	59668	66444	89788	89788	77788	80288	84288	94288	94288
Dram deposits	16347	18392	20036	22377	28016	35947	35947	32934	35786	38217	43466	43466
FX deposits	73877	73916	70345	73339	82756	86000	86000	89220	91043	95995	100882	100882
Dram broad money (M2 period end)	76662	83429	78898	82045	94460	125735	125735	110722	116074	122505	137754	137754
Note:												
Broad money (M2X average)	120564	153073	150062	152618	164433	187572	163671	198808	203811	211582	227413	210404
Dram broad money (M2 average)	58444	72582	78737	81811	86872	104725	88036	110229	113398	119290	130130	118262
Broad money velocity (GDP/M2X average)*	8.55	7.68	1.90	2.02	2.24	2.20	8.35	1.65	1.79	1.91	1.85	7.11
Dram broad money velocity (GDP/M2 average)*	17.65	16.20	3.60	3.77	4.22	3.91	15.53	2.90	3.16	3.41	3.32	12.64
Money multiplier (M2X)**	2.15	2.20	1.97	2.00	2.04	1.99	2.00	2.05	2.05	2.07	2.06	2.06
Dram multiplier (M2)**	1.04	1.04	1.04	1.07	1.08	1.11	1.08	1.13	1.14	1.17	1.18	1.16

Broad money
(percentage change)

	2000	2001	2002					2003				
			Q1	Q2	Q3	Q4	2002	Q1	Q2	Q3	Q4	2003
Net foreign assets	99.8	34.5	3.8	12.1	18.4	28.3	85.2	-11.9	4.9	4.6	8.1	4.5
Central Bank	42.1	13.5	0.1	2.7	12.9	30.3	53.8	-16.0	3.3	3.1	7.6	-3.8
Commercial banks	-36.1	-98.4	-1260.4	291.5	61.5	16.9	-8,678	14.5	12.7	11.2	10.2	58.2
Net domestic assets	15.1	-15.7	-14.7	-6.3	7.3	4.3	-19.7	10.2	0.9	7.4	11.5	33.1
Domestic credit	12.8	-9.1	-16.7	-0.7	4.0	6.9	-8.0	-0.5	10.2	4.4	7.1	22.6
Public sector	-18.9	-35.6	-43.4	-25.8	24.3	47.7	-22.9	37.1	-0.9	-1.9	20.1	60.0
Government	-39.5	1.0	-74.6	-105.4	3912.5	-97.3	-101.5	-4154.3	-3.6	-7.4	83.1	-6726.8
Public organizations	-5.2	-51.2	-15.9	-4.6	82.4	0.0	46.4	0.0	0.0	0.0	0.0	0.0
Private sector	32.5	0.9	-10.2	3.1	1.8	1.4	-4.4	-7.8	13.4	6.0	4.1	15.4
Other assets, net	4.7	16.4	-22.1	16.4	-4.1	14.0	24.8	-19.7	33.2	-1.2	-1.8	3.9
Broad money (M2X period end)	38.7	4.5	-5.1	4.1	14.1	19.5	34.6	-5.6	3.6	5.5	9.2	12.7
Currency in circulation	39.6	9.3	-9.5	1.4	11.4	35.1	38.1	-13.4	3.2	5.0	11.9	5.0
Dram deposits	19.5	12.5	8.9	11.7	25.2	28.3	95.4	-8.4	8.7	6.8	13.7	20.9
FX deposits	41.4	0.1	-4.8	4.3	12.8	3.9	16.3	3.7	2.0	5.4	5.1	17.3
Dram broad money (M2 period end)	36.2	8.8	-5.4	4.0	15.1	33.1	50.7	-11.9	4.8	5.5	12.4	9.6
Note:												
Broad money (M2X average)	22.8	27.0	-8.0	1.7	7.7	14.1	6.9	6.0	2.5	3.8	7.5	28.6
Dram broad money (M2 average)	10.1	24.2	-1.1	3.9	6.2	20.6	21.3	5.3	2.9	5.2	9.1	34.3
Broad money velocity (GDP/M2X average)*	-14.9	-10.2	-4.7	6.3	10.9	-1.8	8.7	-24.8	8.5	6.6	-3.3	-14.9
Dram broad money velocity (GDP/M2 average)*	-5.1	-8.2	-12.5	4.6	12.1	-7.4	-4.1	-25.8	8.9	7.9	-2.7	-18.6
Money multiplier (M2X)**	6.7	2.5	-8.0	1.4	1.7	-2.1	-9.2	2.8	0.2	1.0	-0.5	2.8
Dram multiplier (M2)**	-4.3	0.3	-1.1	3.6	0.3	3.4	3.0	2.1	0.5	2.3	1.0	7.5

** Money velocities are calculated based on quarter seasonally adjusted indicators.*
*** Money multipliers are calculated using average quarterly indicators.*

Monetary base

(million of Dram)

	2000	2001	2002					2003				
			Q1	Q2	Q3	Q4	2002	Q1	Q2	Q3	Q4	2003
Net foreign assets, including KfW loans*	74783	84908	81764	84002	94867	123657	130616	109698	113337	116797	125640	125640
o/w, KfW	1575	3581	3581	3580	6138	6138	7447	7447	7447	7447	7447	7447
Net foreign assets	76358	88489	85345	87582	101005	129795	138063	117145	120783	124244	133087	133087
Net domestic assets	-2393	-4539	-9406	-9592	-14439	-12384	-19343	-14787	-15396	-16318	-14301	-14301
Net domestic lending	11624	12123	5705	3110	-1597	681	681	3576	3331	1742	3130	3130
Net claims on the banking system**	3332	3855	6558	7559	9698	10392	10392	7954	8209	7020	4208	4208
o/w, KfW	1575	3600	3750	4200	6525	7200	7200	7200	7200	7200	7200	7200
Net claims on the Government	8292	8268	-853	-4449	-11295	-9711	-9711	-4378	-4878	-5278	-1078	-1078
Other assets, net ****	-14017	-16662	-15111	-12702	-12842	-13065	-20024	-18363	-18727	-18060	-17430	-17430
Monetary base (period end)	72390	80369	72358	74410	80428	111273	111273	94911	97940	100479	111339	111339
Currency outside CBA	61873	66692	60785	61787	68690	92088	92088	80088	82588	86588	96588	96588
Correspondent accounts with CBA	10517	13677	11573	12623	11738	19185	19185	14823	15352	13891	14751	14751
Monetary base (period average)	56117	69493	76065	76285	80800	94188	81834	97138	99426	102210	110409	102296
Percentage change												
Net foreign assets, including KfW loans	42.1	13.5	0.1	2.7	12.9	30.3	53.8	-16.0	3.3	3.1	7.6	-3.8
Net domestic assets	-293	89.7	637	2	50.5	-14.2	326.2	-15.2	4	6.0	-12.4	-26
Net domestic lending	20.4	4.3	-52.9	-45.5	-151.4	-142.6	-94.4	425.1	-6.9	-47.7	79.7	359.6
Net claims on the banking system	146.4	15.7	70.1	15.3	28.3	7.2	169.6	-23.5	3.2	-14.5	-40.1	-59.5
o/w, KfW	110.0	128.6	4.2	12.0	55.4	10.3	100.0	0.0	0.0	0.0	0.0	0.0
Net claims on the Government	-0.2	-0.3	-110.3	421.6	153.9	-14.0	-217.5	-54.9	11.4	8.2	-79.6	-88.9
Other assets, net	-66.5	-18.9	-12.8	15.9	-1.1	-1.7	-20.2	-8.3	-2.0	3.6	3.5	13.0
Monetary base (period end)	34.4	11.0	-10.0	2.8	8.1	38.4	38.5	-14.7	3.2	2.6	10.8	0.1
Currency outside CBA	36.0	7.8	-8.9	1.6	11.2	34.1	38.1	-13.0	3.1	4.8	11.5	4.9
Correspondent accounts with CBA	25.6	30.0	-15.4	9.1	-7.0	63.4	40.3	-22.7	3.6	-9.5	6.2	-23.1
Monetary base (period average)	15.1	23.8	0.0	0.3	5.9	16.6	17.8	3.1	2.4	2.8	8.0	25.0

** Loans from KfW are included in NFAs calculation as foreign liabilities, and are not included in item "Other assets, net".*

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

Financial flows (2000 - 2003)

		Domestic economy			External sector	Statistical deviation	Horizontal review
		Private	Public sector	Banking			
		1	*2*	*3*	*4*	*5*	*6*
	Gross disposable income						
	2000	1037431	124374				
	2001	1165734	139763				
	2002	1290928	204788				
	2003	1395134	234721				
	Consumption						
	2000	-1001703	-121791				
	2001	-1107598	-125777				
	2002	-1197253	-147116				
	2003	-1280744	-166504				
	Capital investments						
	2000	-151404	-40874				
	2001	-178176	-40840				
	2002	-199990	-76419				
	2003	-220815	-118437				
	Export of goods and non-factor services						
	2000				-241479		
	2001				-300637		
	2002				-389746		
	2003				-463411		
	Import of goods and non-factor services						
	2000				521673		
	2001				539976		
	2002				612539		
	2003				698833		
	Net factor income						
	2000				-28757		
	2001				-34124		
	2002				-35085		
	2003				-38690		
	Net transfers						
	2000				-101710		
	2001				-95886		
	2002				-93795		
	2003				-96166		
1	**Non-financial balance***						
	2000	-115675	-38291		149727	-4,240	0
	2001	-120040	-26853		109328	-37,565	0
	2002	-106316	-18746		93913	-31,149	0
	2003	-106426	-50221		100566	-56,080	0
2	**Net lending by the Government**						
	2000	13296	-13296				0
	2001	3229	-3229				0
	2002	18177	-18177				0
	2003	-2498	2498				0

		1	2	3	4	5	6
3	Domestic non-bank funding to Government						
	2000	-21419	21419				0
	2001	-10418	10418				0
	2002	-2542	2542				0
	2003	-1350	1350				0
4	External funding of the Government**						
	2000		32299		-32299		0
	2001		37200		-37200		0
	2002		35445		-35445		0
	2003		45727		-45727		0
5	External funding of the private sector						
	2000	147664			-147664		0
	2001	93008			-93008		0
	2002	127833			-127833		0
	2003	61590			-61590		0
6	Change in net foreign assets of the banking system						
	2000			-30236	30236		0
	2001			-20880	20880		0
	2002			-69365	69365		0
	2003			-6751	6751		0
7	Domestic lending of the banking system						
	2000	12719	149	-12868			0
	2001	772	-11095	10324			0
	2002	-3664	-4584	8248			0
	2003	12174	9283	-21457			0
8	Change in broad money						
	2000	-42055		42055			0
	2001	-6746		6746			0
	2002	-54390		54390			0
	2003	-26901		26901			0
	Change in other items net***						
	2000	-6282	5234	1048			0
	2001	-3808	-2	3810			0
	2002	-6728	0	6728			0
	2003	-1307	0	1307			0
10	Vertical review****						
	2000	-7513	7513	0			
	2001	-6439	6439	0			
	2002	3520	-3520	0			
	2003	-8638	8638	0			

** Involves a difference between savings and investments by individual sectors, grand total of which is the deficit of the current account of the balance of payments.*
*** Involves changes in net debt liabilities of Government, changes in net other assets of the banking system.*
**** Lincy Foundation resources of 2002-2003 are calculated as capital transfers and included in external financing of the budget deficit.*
***** Deviations from the vertical review are due to the difference in indicator on lending to 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 was forecasted through a forecast of value added in net indirect taxes and certain sectors of the economy (industry, agriculture, construction, services). The forecast of the real growth of the sectors was made multiplying the real growth rates for each sector by share of value added of the relevant sector in the GDP of 2002 to produce the sum, which represents the real GDP growth rate for 2003:

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

where
I is real industry growth rate forecast for 2003;
A is real agriculture growth rate forecast for 2003;
C is real construction growth rate forecast for 2003;
S is real services growth rate forecast for 2003;
T is real net indirect taxes growth rate forecast for 2003.

The forecast for real growth of sectors of the economy was based on the following judgments.

The forecast for real industry growth underlined the importance of the trends in 2002 as the sector's development trends did not succumb to overall economic development trends. It was presumed that the sector's development path would incur no essential changes. The real growth of industry would carry the impact of growing construction owing to increased output of ore and minerals. External economic links are expected to develop in 2003 especially in terms of export, which implies enlarging processing industry. The food industry growth rates would broadly depend on the domestic demand and on private consumption, in particular. This is why the real growth rates for the food industry in 2003 are forecasted to be closer to the real growth rates for private consumption. The forecast for real capital construction growth considered the trends of 2002 and the impact of the autonomous factors predicted for 2003, involving, particularly, the construction work at the expense of the resources from the Lincy Foundation. Agriculture would see no considerable developments both in terms of increased investments and improved efficiencies in manufacturing. Therefore, the forecasted real growth would succumb to the same indicator for other sectors of the economy. The real growth rates for the services would be greatly determined by overall economic developments and be almost equal to the economic growth rates. The volume of net indirect taxes was calculated based on the law on The State Budget 2003.

Similarly, the GDP deflator was forecasted having the deflators of the above sectors forecasted separately, then multiplied by share value added of the relevant sector in the GDP of the previous year, to produce the sum, which represents the real GDP deflator. The forecast for sector deflators relied on program 3% inflation, and predicted unit values for the exports and imports. The construction prices deflator underwent certain adjustment as unusual real growth of the sector for period 2002-2003 is estimated to lead to higher price growth in the sector compared to overall price growth in the economy. Because no significant changes are expected in the agriculture, the relative prices in the sector would carry on decreasing, however at slower pace, determined by growing aggregate demand.

Real GDP growth and deflator forecast by sectors of the economy

Produced	Indicators	Value added (million of Dram)					
		Industry	Agriculture	Construction	Services	Tax, net	GDP
1	January-December, 2002	282486.0	302743.7	189280.7	462895.2	129430.4	1366836.0
2 = 1/GDP nom.	Share in GDP	0.21	0.22	0.14	0.34	0.09	
3	**Real growths forecasted for 2003**	**108.6**	**102.0**	**109.0**	**105.4**	**107.1**	**106.0**
4 = (3 - 100) x 2	Contribution to growth	1.8	0.4	1.2	1.8	0.7	6.0
5 = 1 x 3/100	Real GDP	306779.8	308798.6	206316.0	487891.5	138699.4	1448444.6
6 = 5/GDP real	Share in GDP	0.21	0.21	0.14	0.34	0.10	
7	**Deflators forecasted for 2003**	**102.5**	**102.1**	**106.2**	**103.3**	**102.5**	**103.2**
8 = 6 x (7 - 100)	Contribution to deflator	0.53	0.45	0.88	1.11	0.24	3.2
9 = 1 x 3 x 7/10000	Nominal GDP	314449.3	315283.3	219107.6	503991.9	142166.8	1494999.0

Real private consumption expenditures forecast methodology

The private consumption was forecasted as a function from 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 seasonally adjusted forecasted figures were transformed to unadjusted ones using the seasonal ratios after forecasts.

Results of regression analysis of real GDP and real private consumption expenditures*

Table 4.1

Independent variable / Dependent variable	C intercept	First difference of real GDP	Real private consumption (-1)	Real GDP	Ratio of determination (R^2)	Durbin-Watson statistics
The first difference of real private consumption expenditures	1.592 (0.93) **	0.777 (4.02)	-0.827 (-2.62)	0.698 (2.52)	0.77	1.64

** All variables are expressed in logarithms.*
*** The figure in brackets is the value of T statistics.*

Real private capital investments forecast methodology

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

Results of regression analysis of real GDP and real private capital investments*

Table 4.2

Independent variable / Dependent variable	C intercept	First difference of real GDP	Real capital investments (-1)	Real GDP (-1)	Ratio of determination (R2)	Durbin-Watson statistics
The first difference of real private capital investments	-3.222 (-0.72) **	1.738 (3.51)	-1.033 (-3.62)	1.129 (2.197)	0.61	1.69

** All variables are expressed in logarithms.*
*** The figure in brackets is the value of T statistics.*

Fiscal indicator programming methodology

As official indicators on the consolidated budget 2002 lack, the monetary program used the Central Bank estimations of the consolidated budget. The source for such estimation included preliminary indicators on actual state budget performance, provided by the MoFE, and data on the local and social security fund budgets.

The source for the indicators of the consolidated budget 2003 was the draft to Armenian Law on "The State Budget 2003". The quarterly distribution of the 2000-2002 budgets served a basis for distribution of the quarterly proportions of the fiscal indicators for 2003.

Fiscal impulse indicator

The fiscal impulses indicators were used to evaluate the fiscal policy impact on the aggregate demand and, therefore, the prices. The detailed description of the methodology for these impulses is provided in appendixes of the monetary policy program of 2000. Below are the 2002 and 2003 results for the fiscal impulse indicators.

	Revenue impulse	*Expenditures impulse*	*Fiscal impulse*
2002			
Annual (assessed)	-0.6	0.2	-0.4
2003			
Annual (program)	-0.5	1.5	1.0

The calculation of the impulse indicators considered also the impact of resources of nearly USD 60 million, actually disbursed from the Lincy Foundation in 2002, and of nearly USD 80 million, provided for in Armenian Law on "The State Budget 2003".

The indicators in the table denote that the fiscal sector would broaden the aggregate demand by 1.0% under such performance of the budget for 2003.*

Assessment of cash and non-cash financial flows of the budget

The state budget expenditures and collection of tax and non-tax revenues generate cash and non-cash financial flows. However, there is no statistical information on cash and non-cash flows on tax, therefore the assessments are made using the information on hand about the tax administration.

To classify into cash and non-cash, analytic items broke down the state budget expenditures. The structure of expenditures separated the cash and non-cash expenditures items. This was done using the estimations produced in consultation with the MoFE. These estimations helped to determine the cash weights for certain expenditure items.

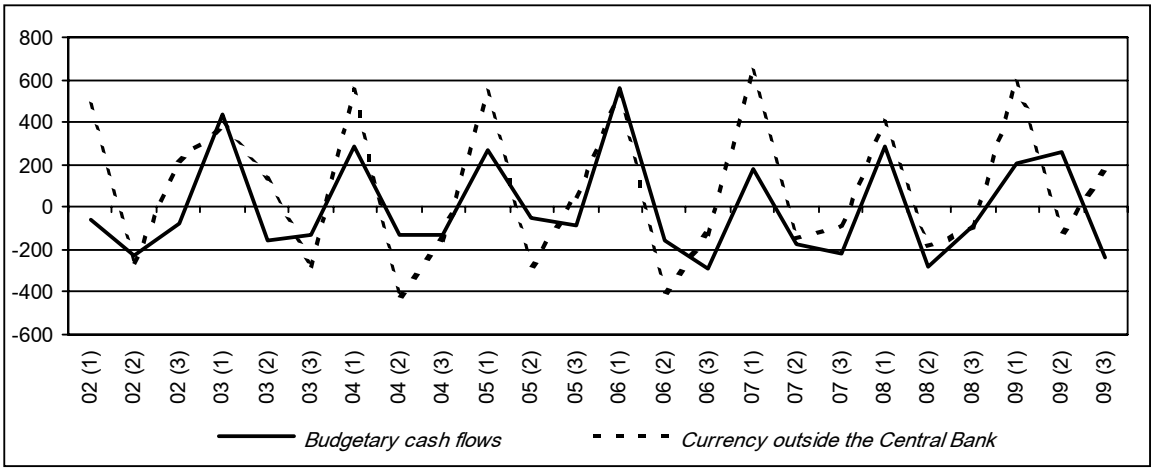
* *The impulse indicators in the table are calculated as percentage in the GDP.*

The cash weights determined for certain tax and expenditures items of the budget are provided below:

Expenditures by economic classification	Weight of cash expenditures in total (%)
Salary	100
Subsidies	0
Interest fees	0
Domestic	0
Foreign	0
Current transfers, o/w,	
Allowance	100
Scholarship	100
Social security fund contributions	100
Pensions	100
Other current transfers	80
Subsidies	30
Goods and services, o/w,	
Acquisition of goods	50
Business trip and assignments	100
Transport services cost	20
Communication and utilities pays	0
Other expenditures	50
Capital expenditures	20
Net lending	0

Budget revenues by items	Weight of cash incomes in total (%)
Taxes and duties	
VAT, o/w,	
on imports	100
Excise duty, o/w,	
on imports	100
Profit tax	0
Income tax	0
Property tax	100
Land tax	100
State duty	100
Customs duty	100
Environmental pays	100
on imports	0
Fixed pays	0
on imports	100
other taxes	100
Simplified tax	100
Non-tax income	0
on tax	0
on imports	0
Grants	0

The relationship between the budgetary cash flows and the base money is straightforward.



The graph shows the change of the currency outside the Central Bank for decades, and average daily cash flows of the budgetary indicators. All this allows forecasting the base money fluctuations based on the monthly budget programs provided by the MoFE.

Methodology to forecast movement in items "Goods" and "Services" of BoP current account

The quarterly data* on foreign trade turnover of the Republic of Armenia serve a basis to forecast movement in items "Goods" and "Services" of the current account of the balance of payments by commodity and service (inclusive of the period from 1996 through Q3, 2002). For a forecast, the commodities were grouped as follows (see Table 6.1.2).

1. The forecast of the volume of commodities of the first group relied on the trends of the previous year. It included calculation of the increase/decrease rate for each commodity in the group. This indicator was then multiplied by the 2002 data to produce the 2003 data. The forecast considered high economic growth and large capital construction in the recent years. This implies an increase in demand that would foster enlarging imports of investment, ore and consumer goods. The above method was used to assess volume of the commodities as follows:
   - Animal and vegetable oil and fat
   - Ores and minerals**,
   - Chemical products
   - Plastics and articles
   - Leather and fur products,
   - Wood and articles,
   - Paper and articles,
   - Textiles,
   - Footwear and headgear,
   - Stone, plaster and cement products,
   - Non-precious metals and articles,
   - Machinery and equipment,
   - Industrial manufacture,
   - Artifact.

2. The second group included the commodities that are manufactured locally and competitive in the world markets. There is anticipation that the exports of these commodities would grow, and the imports would decline. These commodities are:
   - Live animal and animal produce,
   - Vegetable produce,
   - Processed food,
   - Ores and minerals**,
   - Instruments and devices,
   - Transport.

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

** *The "Ores and minerals" was included in the first and second groups as these cover:*
- oil products, the imports of which would presumably increase in 2003 owing to overall economic growth,
- ores and minerals (molybdenum, copper, etc.), the exports of which are expected to grow in 2003.

3. The third group covered the commodities that would have turnover depending on public agreements or international private contracts. The group included the item “Precious and semi-precious stones, metals and articles”, which is expected to report growing exports and imports in 2003 as well.

These forecasts for individual commodities are presented in data of 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 these data to evaluate the Exports (credit) and the Imports (debit) data in the following manner:

- The balance of payments data for 2001-2002 were used to calculate the ratios Exports (credit)/Exports (FOB) and Imports (debit)/Imports (CIF). The forecast for the movement in item “Commodities” for 2003 is based on the average ratio of 2001-2002. The calculation is provided in the table;
- The forecasted Exports (FOB) of USD 590.0 million and the Imports (CIF) of USD 1096.2 million were multiplied by the relevant ratios above to produce evaluation of the amount of the Exports (credit) of USD 605.3 million and the Imports (debit) of USD 960.8 million.

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

Table 6.1.1

	2001	2002	2003
Commodity (credit)	353.1	509.2	605.3
Exports (FOB)	341.8	500.0	590.0
Ratio	1.033	1.018	1.026

	2001	2002	2003
Commodity (debit)	773.3	855.0	960.8
Exports (CIF)	877.4	977.1	1096.2
Ratio	0.881	0.872	0.877

The forecast for non-factor services was made using the data on non-factor services of the balance of payments. These services fell into the sectors as follows:

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

For each sector, the forecast covered the exports and imports and their development pattern. It considered also growth of income and development prospects. The exports and imports of all four groups were then added to achieve assessment of the total exports and imports of non-factor services.

Commodity exports and imports by groups

Table 6.1.2

		2000	2001	2002	2003	2001/2000	2002/2001	2003/2002
1		*2*	*3*	*4*	*5*	*6*	*7*	*8*
	Exports, million of US dollars							
1	Live animal and animal produce	0.7	1.6	2.7	3.0	131.8%	68.4%	11.5%
2	Vegetable produce	1.7	1.3	2.5	3.5	-26.1%	99.0%	39.5%
3	Animal and vegetable oil and fat	0.0	0.1	0.0	0.0	18655.0%	-99.0%	50.0%
4	Processed food	27.3	48.0	59.4	67.0	75.5%	23.8%	12.9%
5	Ores and minerals	37.2	37.4	45.1	50.0	0.6%	20.5%	10.8%
6	Chemical products	3.4	2.8	2.3	3.0	-15.5%	-19.5%	30.8%
7	Plastics and articles	9.0	13.1	7.7	11.0	44.4%	-41.4%	44.3%
8	Leather and fur products	1.4	2.1	1.0	2.0	46.6%	-50.9%	95.6%
9	Wood and articles	0.9	0.9	0.8	0.9	3.3%	-10.2%	11.3%
10	Paper and articles	0.4	1.3	0.9	1.0	205.7%	-33.4%	17.3%
11	Textiles	13.2	24.3	29.6	32.9	83.8%	21.8%	10.9%
12	Footwear and headgear	1.0	0.3	0.5	0.8	-68.7%	73.0%	55.4%
13	Stone, plaster and cement products	2.0	1.6	2.4	2.1	-21.5%	49.2%	-12.6%
14	Precious and semi-precious stones, metals and articles	121.5	122.9	247.4	312.0	1.2%	101.4%	26.1%
15	Non-precious metals and articles	44.2	43.4	43.8	45.0	-1.7%	0.9%	2.6%
16	Machinery and equipment	31.0	28.5	19.8	20.8	-8.1%	-30.6%	5.2%
17	Transport	1.8	2.4	15.2	16.0	34.1%	521.7%	5.6%
18	Instruments and devices	2.3	8.8	17.0	17.6	289.7%	94.0%	3.0%
19	Industrial manufacture	1.2	0.7	1.1	1.1	-37.1%	53.5%	-4.2%
20	Artifact	0.3	0.3	0.7	0.3	20.5%	120.5%	-58.7%
	Total (FOB)	300.5	341.8	500.0	590.0	13.8%	46.3%	18%
	Total (credit)	309.9	353.1	509.2	605.3	13.9%	44.2%	18.9%
	Imports, million of US dollars							
1	Live animal and animal produce	33.6	30.8	27.5	25.0	-8.3%	-10.6%	-9.2%
2	Vegetable produce	99.1	85.2	76.1	75.0	-14.1%	-10.6%	-1.4%
3	Animal and vegetable oil and fat	17.2	19.5	17.7	17.2	13.8%	-9.7%	-2.6%
4	Processed food	69.8	76.9	77.9	77.0	10.2%	1.3%	-1.1%
5	Ores and minerals	179.3	188.2	167.4	190.0	5.0%	-11.0%	13.5%
6	Chemical products	82.4	65.1	64.8	63.0	-20.9%	-0.5%	-2.8%
7	Plastics and articles	23.0	22.5	22.0	23.0	-2.3%	-2.2%	4.6%
8	Leather and fur products	1.6	5.8	1.2	2.3	260.4%	-79.1%	88.8%
9	Wood and articles	4.9	5.9	7.5	9.0	21.3%	26.6%	20.2%
10	Paper and articles	23.1	24.5	19.4	22.0	6.2%	-20.8%	13.4%
11	Textiles	32.1	36.0	38.6	41.0	12.2%	7.4%	6.2%
12	Footwear and headgear	5.3	6.0	5.2	6.0	13.2%	-13.5%	15.7%
13	Stone, plaster and cement products	11.3	15.4	20.5	22.4	36.0%	32.9%	9.2%
14	Precious and semi-precious stones, metals and articles	113.2	106.8	207.3	260.0	-5.7%	94.2%	25.4%

1		2	3	4	5	6	7	8
15	Non-precious metals and articles	24.4	36.1	51.5	54.0	48.0%	42.8%	4.9%
16	Machinery and equipment	117.2	88.4	101.9	133.0	-24.6%	15.3%	30.6%
17	Transport	23.2	25.9	39.8	43.5	11.6%	53.9%	9.2%
18	Instruments and devices	12.3	27.0	20.2	20.5	118.4%	-25.1%	1.6%
19	Industrial manufacture	11.6	11.5	10.7	12.3	-0.7%	-7.2%	14.6%
20	Artifact	0.0	0.0	0.0	0.0	-63.3%	-84.7%	0.0%
	Total (CIF)	884.7	877.4	977.1	1096.2	-0.8%	11.4%	12.2%
	Total (debit)	773.4	773.3	855.0	960.8	0.0%	10.6%	12.4%

Real effective exchange rate

The real effective exchange rate for the economy of Armenia will be calculated by a formula 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 is product,

REER is real effective exchange rate of i country,

CPI is consumer price indices of i and j countries,

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

Wij is competitive weights, which are based on the volume of trade turnover of i and j countries, and are assessed by a formula as follows:

$$Wij = \frac{Exij + Imij}{Exi + Imi} \quad \text{where,}$$

Exij, Imij is trade turnover between i and j countries,

Exi, Imi is volume of exports and imports of i country.

These formulas show that an increase in consumer price index and nominal exchange rate of a country or their decrease in partner countries would appreciate PEER of the present country, which implies better terms for the imports, and worse, for the exports.

The REER for Armenian dram was assessed using the data on foreign trade turnover in period 1997-2001. In assessment, the humanitarian aid, gas and oil product values were excluded in the imports as fuel prices are considered to be relatively inelastic against exchange rate fluctuations. The fuel import prices in Armenia are determined based on the agreements signed, and these are revised once or twice a year.

Real effective exchange rate calculation weights and country impact

Table 6.2.1

Indicators	1995	1996	1997	1998	1999	2000	2001	2002	2003	Weights
REER (1995 = 100)	100.0	101.7	96.3	101.4	103.3	101.0	96.4	87.2	83.4	
REER change	77.8%	1.7%	-5.3%	5.3%	1.8%	-2.2%	-4.6%	-9.6%	-4.7%	
Armenia's inflation	175.8%	18.8%	13.9%	8.8%	0.7%	-0.8%	3.2%	1.1%	3.2%	
Dram exchange rate	-34.2%	-1.8%	-15.7%	-2.9%	-5.6%	-0.8%	-2.8%	-3.2%	-2.2%	
Partner countries' inflation	52.9%	23.6%	13.9%	17.2%	27.8%	12.4%	13.2%	-10.2%	-8.1%	
France	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	-0.1%	0.0%	3.2%
Germany	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	-0.1%	-0.1%	8.5%
Netherlands	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	-0.1%	-0.1%	2.6%
Italy	0.3%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%	-0.1%	-0.1%	5.7%
United Kingdom	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%	0.1%	-0.1%	-0.2%	7.0%

Indicators	1995	1996	1997	1998	1999	2000	2001	2002	2003	Weights
Switzerland	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	-0.1%	5.3%
Iran	8.4%	5.2%	3.2%	3.6%	3.9%	1.9%	2.6%	-2.7%	-2.8%	19.9%
Russia	31.8%	10.4%	3.5%	6.4%	17.0%	4.9%	5.0%	-3.7%	-2.6%	25.3%
USA	0.4%	0.4%	0.3%	0.2%	0.3%	0.4%	0.4%	-0.2%	-0.3%	13.5%
Turkey	5.8%	5.4%	5.6%	5.6%	4.5%	3.9%	3.9%	-3.4%	-2.2%	8.8%
Partner countries' exchange rate	-19.5%	-7.5%	-11.1%	-13.3%	-27.8%	-10.6%	-7.2%	2.9%	2.8%	
France	0.3%	-0.1%	-0.4%	0.0%	-0.1%	-0.5%	-0.1%	-0.2%	-0.3%	3.2%
Germany	1.0%	-0.4%	-1.2%	-0.1%	-0.4%	-1.2%	-0.3%	-0.4%	-0.7%	8.5%
Netherlands	0.3%	-0.1%	-0.4%	0.0%	-0.1%	-0.4%	-0.1%	-0.1%	-0.2%	2.6%
Italy	-0.1%	0.3%	-0.6%	-0.1%	-0.3%	-0.8%	-0.2%	-0.3%	-0.5%	5.7%
United Kingdom	0.2%	-0.1%	0.3%	0.1%	-0.2%	-0.4%	-0.4%	-0.3%	-0.6%	7.0%
Switzerland	0.8%	-0.2%	-0.9%	0.0%	-0.2%	-0.6%	0.0%	-0.4%	-0.5%	5.3%
Iran	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%	0.1%	0.1%	1.5%	19.9%
Russia	-18.9%	-2.1%	-3.1%	-7.1%	-25.2%	-3.4%	-0.9%	1.7%	1.3%	25.3%
USA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.5%
Turkey	-4.5%	-4.8%	-5.3%	-4.8%	-4.0%	-3.6%	-5.2%	3.1%	3.0%	8.8%

Exports and imports price forecast methodology

The analysis and forecast for the exports and imports prices necessitated their breakdown into economically justified groups.

The foreign trade database is produced from the National Statistics Service of Armenia through HS (Harmonized System) classification, which divides the commodities into 21 general groups, and has an 8-digit coding system. The classification is made as per type of commodity other than destination, which is why there arose a need to use BEC (Broad Economic Classification). According to BEC, the first 6 digits of the HS coding corresponds to a 5-digit code, which is then grouped into consumer, investment, raw material and other products. To this end, the Central Bank put this commodity classification methodology into operation in 2002 to allow an analysis and forecast for the exports and imports prices.

BEC classification group weights in imports

Table 6.3.1

Indicators	1998	1999	2000	2001
Consumer commodities	28.35%	26.41%	25.17%	25.32%
Raw material	31.34%	34.35%	37.47%	37.09%
Investment commodities	7.48%	7.78%	6.81%	7.10%
Gasoline	12.48%	10.82%	8.82%	10.51%
Diamond	6.13%	10.86%	12.00%	10.27%
Natural gas	14.14%	9.70%	9.73%	9.70%
Other	0.07%	0.06%	0.01%	0.00%

BEC classification group weights in exports

Table 6.3.2

Indicators	1998	1999	2000	2001
Consumer commodities	16.37%	16.91%	18.67%	26.62%
Raw material	49.18%	38.15%	41.81%	42.69%
Investment commodities	11.99%	5.12%	5.92%	5.14%
Diamond	22.45%	37.60%	33.57%	25.55%
Other	0.01%	0.00%	0.03%	0.00%

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

Previous trends for investment and raw material commodity groups serves a basis for forecast, where the prices on investment commodities (machinery and equipment) are constant, while the prices on raw material commodities trend downward that is consistent with the prices at the world commodities exchanges.

The forecast for prices on consumer goods relied on the methodology of calculation of unit value as per partner countries (see Monetary Policy Program, 2001, Appendix 5.1). The methodology stipulates that the export and import unit values of consumer goods are broadly determined by the inflation and exchange rate levels in the partner countries.

Because these countries are positioned differently in the exports and imports structure, the Central Bank used different methods for forecast. Thus, if there is no strict country concentration in the imports of consumer goods, and it may be forecasted through a classic unit value calculation, about 60% of the exports of consumer goods accounts for the USA. Therefore, the forecast for export prices on consumer goods relied on the inflation in the USA alone, under a stable exchange rate. The forecast for import prices on consumer goods relied on the shares of the partner countries for 2001, as provided below.

Partner country share in imports of consumer goods in 2001 and forecasts for 2003

Table 6.3.3

Country	Share (%)	Inflation	Exchange rate	Impact
Russia	17.4%	11.0%	-5.1%	0.9%
UAE	13.6%	0.0%	0.0%	0.0%
USA	11.4%	2.3%	0.0%	0.3%
Iran	10.3%	15.1%	-7.3%	0.7%
United Kingdom	9.0%	2.2%	8.8%	1.0%
Panama	8.2%	0.0%	0.0%	0.0%
Ukraine	7.8%	9.1%	-3.1%	0.1%
Germany	6.3%	1.1%	9.2%	0.6%
Switzerland	4.7%	1.0%	9.3%	0.5%
Turkey	4.3%	28.6%	-26.9%	0.0%
France	3.6%	1.4%	9.2%	0.4%
Italy	3.4%	1.8%	9.2%	0.4%
Addition: European Union	13.2%	1.5%	9.2%	1.4%
Total	**100.00%**	**5.6%**	**-0.9%**	**4.7%**

In the country shares, one will observe the so called “third country effect”, when goods are imported from a country that is not the manufacturer of the goods (Panama, UAE). These countries were therefore viewed as “fictitious”, keeping their inflations 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 were weighted by geometric mean.

The price indices for the import and export commodity groups are weighted to produce the foreign trade prices in dollar terms, which is then multiplied by the average AMD/USD exchange rate to translate into drams and produce the export and import deflators.

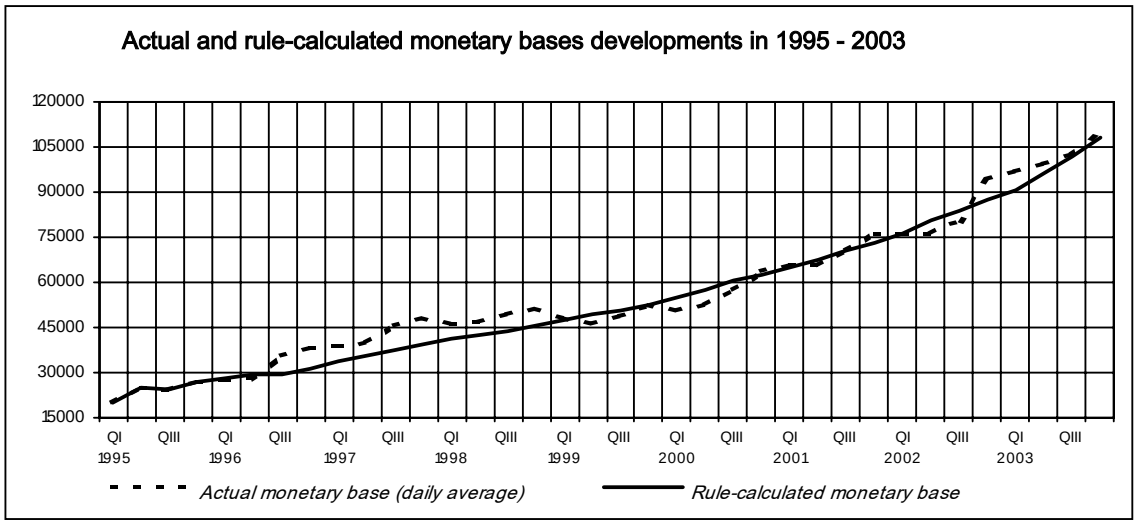
Comparative analysis for actual and rule-calculated monetary bases

The program trends for the money supply forecasted for 2003 were put by the Central Bank into comparison with the rule-calculated monetary base indicators.*

Actual and rule-calculated monetary bases and nominal GDP developments in 1996 - 2003

Year	Nominal GDP *(actual)*	Monetary Base *(actual)*	Nominal GDP *(rule)*	Monetary Base *(rule)*
1996	26.6	34.5	26.4	23.3
1997	21.6	33.9	14.9	23.4
1998	18.8	11.7	12.3	18.5
1999	3.4	0.8	12.3	15.1
2000	4.4	15.1	14.7	18.0
2001	14.0	23.8	15.1	17.6
2002	16.3	17.8	14.7	18.6
2003	9.4	25.0	13.9	21.0

The most volatile component in the structure of the base money rule is velocity of money, which, despite smoothening, evokes certain fluctuations in its quarterly developments. However, these developments that include the coefficient of adjustment in case of potential and actual GDP deviation, is increasingly smooth and consistent with the developments of the aggregate demand, whereas the actual monetary base has historically exhibited steep fluctuations.



* *The description of McCallum's Base Money Rule is provided in the Monetary Policy program, 2002, pages 63-66.*

As shown in a graphic analysis, the monetary base indicators projected for 2003 slightly outstrip the rule-calculated indicators to reflect the expansionary monetary policy for the period projected. As at the end of 2002, with the monetary base growing rapidly, the actual monetary base indicator has markedly outpaced the rule-calculated monetary base. Under these conditions, the deviation would gradually be adjusted throughout 2003, and the actual base money would later on converge to the rule-calculated monetary base.

Analysis of the monetary policy in 2002; assessment of the monetary policy path in 2003 program by monetary impulses indicator

The Central Bank has calculated the money impulses indicator to get an idea of the monetary policy path for 2003 and its impact on the aggregate demand. The table below provides comparative analysis of the monetary impulses (sum of the monetary base and smoothed money velocity*) and nominal GDP growth rates is provided below.

Comparative analysis for money impulses and nominal GDP growth rates

Table 8.1

Period	Money impulse	Nominal GDP growth rate
Quarter I	5.76	14.12
Quarters I - II	9.39	14.81
Quarters I - III	10.30	9.77
2002	**12.40**	**9.43**
Quarter I	18.37	14.33
Quarters I - II	16.14	12.28
Quarters I - III	13.20	11.27
2003	**9.21**	**9.38**

The table shows that the monetary impulses indicator has been below the nominal GDP growth rates during the first six months of 2002, but outpaced the nominal GDP growth rates during the second half, to reflect the policy path throughout these periods as appropriate.

The monetary policy in the first three quarters of 2003 would be somewhat expansionary, as the monetary aggregates converge to the long-run equilibrium level after sharp growth in late 2002.

The monetary policy path throughout the year would be entirely consistent with the developments in the real sector of the economy, and the monetary impulses indicator in 2003 would be 9.2%, which is compatible with 9.4% program growth of the nominal GDP.

* *The description of the monetary impulses calculation methodology is provided in the "Central Bank Bulletin", 1998, No. 3.*

Key monetary indicators forecast methodology

The forecast for dram broad money for 2003 was made through an Autoregressive Distributed Lags (ADL) model. A regression equation underlying the analysis is as follows:

$$M2_t = c + \alpha_1 M2_{t-1} + \beta_0 GDP_t + \beta_1 GDP_{t-1} + \varepsilon_t \qquad (1)$$

where,

M2 is real dram broad money,

GDP is real GDP.

Some simple mathematic modifications changed the equation, as follows:

$$\Delta M2_t = c + \beta_0 \Delta GDP_t - (1-\alpha_1) M2_{t-1} + (\beta_0 + \beta_1) GDP_{t-1} + \varepsilon_t \qquad (2)$$

The regression equation was based on the indicators calculated by the Additive Smoothing Method. Before the modification, the review of the time series stationarity has revealed that each of these series are integrated on the first order I (1). In other words, the first difference time series ΔM2, ΔGDP, 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 ΔM2, ΔGDP:

ΔM2

ADF Test statistics	-6.237950	1% Critical value*	-3.7204
		5% Critical value	-2.9850
		10% Critical value	-2.6318

ΔGDP

ADF Test statistics	-7.646415	1% Critical value*	-3.7856
		5% Critical value	-3.0114
		10% Critical value	-2.6457

The advantage of the model is that in addition to the variables, describing short term developments of the dram broad money, the equation has considered the components describing also long term correlation. Before estimating the model, 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:

$$\Delta M2_t = \beta_0 \Delta GDP_t - (1-\alpha_1)\left[M2_{t-1} - \frac{c}{(1-\alpha_1)} - \frac{(\beta_0 + \beta_1)}{(1-\alpha_1)} GDP_{t-1} \right] + \varepsilon_t \qquad (3)$$

The model shows that a change in the dram broad money reflects the influence of the current change in real GDP 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 - α_1) shows the speed of adjustment.

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})	C intercept	Coefficient of determination R^2
The first difference of real dram broad money (ΔM2)	0.247 (2.69)**	-0.190 (-2.32)	0.428 (3.68)	-3.283 (-4.46)	0.56

** All variables are expressed in logarithms.*

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

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