

NATIONAL BANK OF GEORGIA

# *INFLATION REPORT*

IV Quarter, 2007



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According to the information of the Department of Statistics of the Ministry of Economic Development, at the end of 2007 the annual inflation rate equaled 11.0%. The average annual inflation rate stood at 9.2%.

The annual core inflation rates amounted to 9.07% and 7.05% for goods within one- and two-standard deviations, respectively. The core inflation rates at the end of the year are quite high and need to be adequately addressed by monetary and fiscal policies.

During 2007 price gains were significantly influenced by both monetary and non-monetary (exogenous) factors. In 2007 developments in the world markets continued to exert significant influence on the small open-economy of Georgia. Exogenous factors included increases of world prices on different goods, especially on wheat and flour. Apart from particular goods, the influence of higher-than-projected annual inflation in main trading partner countries should also be pointed out. The oil price gains negatively affected the inflation rate in Georgia both in a direct way as well as via increased production costs of different goods. In addition, there was an increase of regulated prices on certain goods and services in the country.

As it was already noted, inflation was also fueled by monetary factors. In QIV of 2007 the reserve money grew by 8.6% to total 1498.6 million Lari in end-December. In December M3 and M2 broad money aggregates grew at 49.6% and 53.5%, respectively.

The supply of foreign currency at the Tbilisi Interbank Foreign Exchange (TIBFEX) exceeded demand in October 2007 at a record high level of almost 145 million USD. In November the situation was reversed though, when the net demand of foreign currency equaled approximately 82 million USD. In December the demand for foreign currency fell short of the supply by approximately 25 million USD.

In QIV the Lari nominal exchange rate against the US dollar tended to appreciate, at the exception of mid-November, when it insignificantly depreciated. Starting from end-November the Lari nominal exchange rate continued to appreciate.

The appreciation of Lari makes imported goods less expensive, thus exerting a downward influence on the price level.

Compared to 2006, the real effective exchange rate depreciated by 0.38%. As regards the Lari real exchange rate against different currencies, QIV of 2007 showed mixed results. In particular, the Lari real exchange rate depreciated by 10.2% against the Turkish Lira, by only 1.1% - against the Russian ruble, while it appreciated against the US dollar and the UK pound sterling by 14.4% and 8.9%, respectively.

In QIII of 2007 the current account deficit decreased by 9.5%, compared to QII, to total 382.6 million USD. The current account deficit in QIII of 2007 was still conditioned by the goods trade, while the latter continued to be adversely affected by the price gains on petroleum products and, particularly, on natural gas. The officially declared foreign trade turnover in QIV of 2007 amounted to 2040.3 million USD, or 48.7% more than in the same quarter of 2006. Exports grew by 27.5%, while imports - by 54.3%. Compared to QIII of 2007, exports increased by 10.7%, while imports - by 27.1%. In QIV of 2007 the volume of money remittances to the country was impressive, significantly compensating for the current account deficit, despite a certain volume of money remittances from the country abroad.

In 2007 a significant growth of average wages occurred, compared to 2006. Labor productivity increased, in particular, high growth rates were registered in agriculture, industry, construction, transport and communications, public administration, and education sectors. Real growth of labor productivity represents an inflation-containing factor. However, even faster growth of wages promoted internal demand and accelerated inflation growth rates.

In QIV of 2007 high growth rates of loans extended to the economy were preserved, amounting to 71% by the end-year, which increased inflationary pressure. During QIV of 2007 the NBG intensively conducted monetary policy. As of December 31, the volume of monetary mass withdrawn by means of Certificates of Deposits (CDs) totaled 373 million Lari. In October the volume of withdrawn monetary mass equaled 43% of reserve money. However, starting from mid-December, the monetary mass withdrawal by means of CDs slowed down significantly decreasing to 24.9% of reserve money, which was conditioned by acute liquidity deficit in the market.

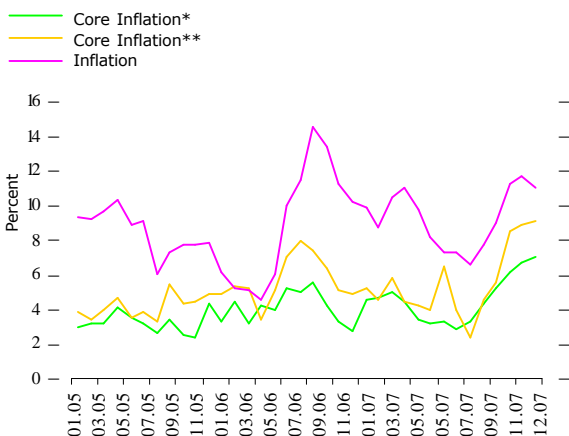
According to the information of the Department of Statistics of the Ministry of Economic Development, the annual inflation by the end-year equaled 11.0%, while average annual inflation rate - 9.2%.

High inflation rates present in the economy since August 2007 slowed down in December, and by end-year the inflation rate amounted to 11%. while the average inflation stood at 9.2%. Similar to the situation in other countries, increased inflation rates were due to the price gains on food and energy. The situation in the country was fueled by political tension, which augmented inflationary expectations. Meanwhile, increased volumes of monetary aggregates and extended loans conditioned by government spending and capital inflows aggravated inflationary dynamics.

The annual core inflation rates amounted to 9.07% and 7.05% for goods within one-and two-standard deviations, respectively. The core inflation rates at the end of the year are quite high and need to be adequately addressed by monetary and fiscal policies. Core inflation rates increased significantly in the recent period, exceeding the targets set by the NBG.

Price decrease of 6.8% occurred in the commodity group „clothing“, prices on commodity groups „communications“ and „alcoholic beverages and tobacco“ grew by 1.3%. Price gains around 10% occurred in the following commodity groups: „food and non-alcoholic beverages (12.9%), „household appliances“ (10.7%), and „healthcare“ (8.9%). Prices on transport grew by 15.6%<sup>1</sup>. During 2007 the largest price gains took place in the group „housing, water, electricity, gas and other fuels“ (23.9%), with price gains on natural gas, cold water, and garbage collection fees mainly accounting for this increase.

**Figure 2.1**  
Annual CPI And Core Inflation (Based on 282 Components of the Consumption Basket, Effective since December 2006)<sup>1</sup>



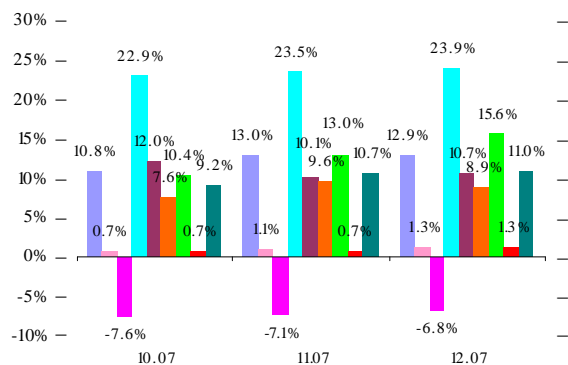
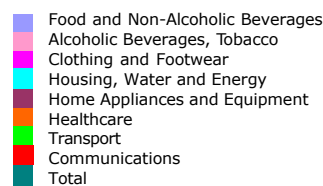
<sup>1</sup> \* for products within the range of one standard deviation.  
\*\* for products within the range of two standard deviations.

<sup>1</sup> Here not only transportation prices on intracity buses and underground trains are taken into account, but the average price increase on transportation in general. This also includes other types of transportation, e.g. intracity taxi, minibuses, suburban and intercity transportation, etc.

**Table 2.1**  
CPI Inflation Rates by Components (%), Their Weight in the Consumption Basket (%) and CPI Impact (Percentage Points)

|  | December 2006 Weights | 12.07/11.07 |        | 12.07/12.06 |        | 01.07-12.07/01.06-12.06 |        |
|--|-----------------------|-------------|--------|-------------|--------|-------------------------|--------|
|  |                       | inflation   | impact | inflation   | impact | inflation               | impact |
| <b>Total</b>   | 100.0%                | 0.3%        | 0.3%   | 11.0%       | 11.0%  | 9.2%                    | 9.2%   |
| Food and Non-Alcoholic Beverages                               | 44.3%                 | 0.0%        | 0.0%   | 12.9%       | 5.7%   | 12.4%                   | 5.4%   |
| <b>Food</b>  | 43.0%                 | 0.0%        | 0.0%   | 13.2%       | 5.7%   | 12.8%                   | 5.4%   |
| <b>Bread and Bakery Products</b>                               | 12.2%                 | 0.0%        | 0.0%   | 29.0%       | 3.5%   | 15.2%                   | 1.8%   |
| <b>Meat and Meat Products</b>                                  | 6.6%                  | -0.5%       | 0.0%   | 0.9%        | 0.1%   | 0.6%                    | 0.0%   |
| <b>Fish Products</b>   | 1.1%                  | -5.0%       | -0.1%  | -1.2%       | 0.0%   | 7.3%                    | 0.1%   |
| <b>Milk, Cheese, and Eggs</b>                                  | 5.2%                  | 3.8%        | 0.2%   | 11.5%       | 0.6%   | 7.4%                    | 0.3%   |
| <b>Oils and Fats</b>   | 3.5%                  | 0.1%        | 0.0%   | 34.2%       | 1.2%   | 15.0%                   | 0.5%   |
| <b>Fruits, Grapes</b>  | 2.3%                  | -3.0%       | -0.1%  | 78.7%       | 1.8%   | 107.6%                  | 2.2%   |
| <b>Vegetables, Watermelons, Potatoes and Other Solanaceous</b> | 8.8%                  | 1.0%        | 0.1%   | -17.4%      | -1.5%  | 1.6%                    | 0.1%   |
| <b>Sugar, Jam, Honey, Syrups, Chocolate, Pastry</b>            | 2.7%                  | -3.4%       | -0.1%  | -8.0%       | -0.2%  | -5.7%                   | -0.2%  |
| <b>Other Food Products</b>                                     | 0.6%                  | -2.8%       | 0.0%   | 6.1%        | 0.0%   | 12.6%                   | 0.1%   |
| <b>Non-Alcoholic Products</b>                                  | 1.3%                  | -0.4%       | 0.0%   | 3.4%        | 0.0%   | 0.9%                    | 0.0%   |
| Alcoholic Beverages, Tobacco                                   | 3.7%                  | 0.1%        | 0.0%   | 1.3%        | 0.0%   | -6.6%                   | -0.3%  |
| Clothing and Footwear  | 5.0%                  | 0.3%        | 0.0%   | -6.8%       | -0.3%  | -4.5%                   | -0.2%  |
| Housing, Water, Electricity, Gas, and Other Fuels              | 10.3%                 | 0.3%        | 0.0%   | 23.9%       | 2.4%   | 25.6%                   | 2.5%   |
| Furniture, Home Appliances and Equipment, Housing Renovation   | 3.7%                  | 0.5%        | 0.0%   | 10.7%       | 0.4%   | 4.3%                    | 0.2%   |
| Healthcare   | 8.0%                  | -0.6%       | 0.0%   | 8.9%        | 0.7%   | 13.1%                   | 1.0%   |
| Transport  | 9.0%                  | 2.4%        | 0.2%   | 15.6%       | 1.4%   | 6.2%                    | 0.6%   |
| Communications   | 4.4%                  | 0.6%        | 0.0%   | 1.3%        | 0.1%   | 0.7%                    | 0.0%   |
| Recreation, Leisure, and Culture                               | 2.7%                  | -0.2%       | 0.0%   | 7.7%        | 0.2%   | 3.4%                    | 0.1%   |
| Education  | 3.5%                  | -0.3%       | 0.0%   | 3.8%        | 0.1%   | 4.0%                    | 0.1%   |
| Hotel, Cafes, and Restaurants                                  | 2.4%                  | -0.8%       | 0.0%   | 2.8%        | 0.1%   | 5.1%                    | 0.1%   |
| Other Goods and Services                                       | 3.2%                  | 1.1%        | 0.0%   | 4.5%        | 0.1%   | 3.7%                    | 0.1%   |
| Non-durable Goods  | 68.0%                 | 0.3%        | 0.2%   | 11.9%       | 8.1%   | 9.8%                    | 6.6%   |
| Semi-durable Goods   | 6.5%                  | 0.7%        | 0.0%   | -3.6%       | -0.2%  | -2.9%                   | -0.2%  |
| Durable Goods  | 1.9%                  | -0.4%       | 0.0%   | -1.0%       | 0.0%   | 0.3%                    | 0.0%   |
| Services   | 23.6%                 | 0.0%        | 0.0%   | 13.1%       | 3.1%   | 11.4%                   | 2.7%   |

**Figure 2.2**  
Price Gains, Compared to December 2006

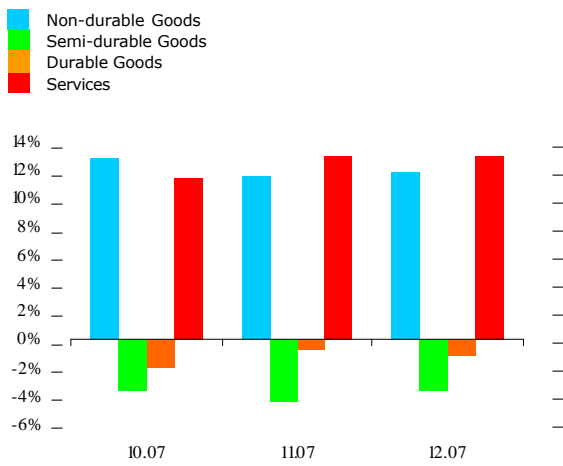


Among consumption goods of different durability the highest inflation rates were observed for non-durable goods (11.9%). High inflation rate (13.1%) was also registered in the services sector.

From December 2005 until December 2007 prices on non-durable goods grew by 23.1%, while in the same period prices on services increased by 20.9%. As regards semi-durable and durable goods, their prices dropped by 1.6% and 1%, respectively.

During 2007 increase of the price level was significantly influenced by exogenous factors. In particular, price gains in the world markets on wheat, sunflower oil, and energy products entailed price gains in the domestic markets on white bread (35.5%), wheat flour (31.7%), sunflower oil (64%), natural gas (42.7%), liquid gas (23.5%), gasoline (19%). Certain regulated fees were also increased: prices on intracity transportation by buses, minibuses, and taxi grew by 13.1%, cold water

**Figure 2.3**  
**Changes in Inflation Rates for Goods and Services of Different Durability**



fee - by 80.3%, garbage collection fee - by 137.2%. The inflation impact of the above-mentioned factors approximately equals 7.3%. It is remarkable that the share of the above-mentioned goods and services in the consumption basket was almost 22%.



## 3

## Inflation Factors

**Table 3.1.1**  
Real Value-Added Per Employee in QIII of 2007,  
Compared to QIII of 2006 (%)

|  | Real Value-Added |
|--|------------------|
| Agriculture                                  | 127.1            |
| Industry                                     | 122.0            |
| Construction                                 | 132.5            |
| Trade  | 106.3            |
| Hotels and Restaurants                       | 102.2            |
| Transport and Communications                 | 113.5            |
| Financial Intermediation                     | 76.2             |
| Real Estate, Rent, and Commercial Operations | 87.1             |
| Public Administration                        | 147.7            |
| Education                                    | 141.2            |
| Healthcare                                   | 84.1             |
| Total  | 121.1            |

**Table 3.1.2**  
Average Monthly Nominal Wages of Employed Persons  
in QIII of 2007, Compared to QIII of 2006 (%)

|  | Nominal Wages |
|--|---------------|
| Agriculture  | 138.1         |
| Mining Industry  | 196.2         |
| Manufacturing Industry   | 136.5         |
| Production/Distribution of Electricity, Natural Gas<br>and Water | 124.9         |
| Construction   | 135.3         |
| Trade  | 151.9         |
| Hotels and Restaurants   | 141.4         |
| Transport and Communications                                     | 127.1         |
| Real Estate, Rent, and Commercial Operations                     | 136.6         |
| Public Administration, Defense                                   | 131.4         |
| Education  | 122.7         |
| Healthcare   | 147.5         |
| Total  | 139.4         |

### 3.1. Labor Productivity, Wages

Compared to 2006, drastic increase in average wages was registered in 2007. In particular, in QIII of 2007 average monthly wages in the official sector of the economy amounted to 385.2 Lari<sup>1</sup>, exceeding the 2006 level by 39.4%. Wages grew almost in every sector of the economy.

In QIII of 2007, compared to the same period of 2006, real growth rate of value-added per employee equaled 21.1%. Particularly high growth rates were manifested in agriculture, industry, construction, transport and communications, public administration and education sectors. Real growth of labor productivity represents an inflation-containing factor. However, even faster growth of wages promoted internal demand and accelerated inflation growth rates.

### 3.2. Monetary Aggregates

In QIV of 2007 the reserve money aggregate grew by 118.7 million Lari (8.6%) to total 1498.6 million Lari in December. Compared to the monthly average in September - last month of QIII - reserve money grew in December by 77.1 million Lari (5.7%).

During QIV of 2007 the situation at the TIBFEX was changeable. Lower-than-expected net purchases of the NBG at the TIBFEX in QIV totaled 11.9 million USD, conditioned by the November events. The NBG operations at the TIBFEX resulted in 20 million Lari cash inflows to the economy.

In the accounting period foreign currency denominated expenditures exceeded revenues by 213.5 million USD, decreasing the reserve money mass by approximately 347 million Lari. In QIV funds on government deposits decreased by 318.2 million Lari and by the end-period data the volume of government deposits amounted to 447.4 million Lari.

<sup>1</sup> Source: Enterprise and Labor Statistical Surveys.

Similar to QIII of 2007, in QIV the NBG actively used CD auctions in conducting its monetary policies. By means of this financial instrument the volume of absorbed liquidity dropped significantly by 91.1 million Lari. As a result, the total value of CDs in circulation decreased to 373.0 million Lari. The volume of CDs issued in October grew to 586.6 million Lari, exceeding the QIII level by 122.5 million Lari.

In QIV the NBG extended loans within the framework of the lender of last resort in the amount of 20 million Lari.

As a result, in QIV the volume of net liabilities of the banking sector amounted to 303.5 million Lari by end-period.

As a result of the above-mentioned monetary flows, in QIV of 2007 the reserve money parameter grew by 118.8 million Lari to total 1498.6 million Lari by end-period.

**Table 3.2.1**  
**Dynamics of reserve money**  
End-month data, 2007

|                                    | 01.07     | 02.07     | 03.07     | 04.07     | 05.07     | 06.07     | 07.07     | 08.07     | 09.07     | 10.07     | 11.07     | 12.07     |
|------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Reserve money                      | 1 226 839 | 1 200 329 | 1 152 684 | 1 275 289 | 1 349 489 | 1 307 509 | 1 342 130 | 1 410 360 | 1 379 801 | 1 362 197 | 1 371 001 | 1 498 601 |
| Money in circulation               | 834 396   | 840 606   | 857 971   | 893 463   | 922 622   | 967 394   | 1 026 111 | 1 065 079 | 1 081 077 | 1 107 397 | 1 139 021 | 1 310 488 |
| Bank deposits                      | 392 443   | 359 723   | 294 713   | 381 826   | 426 867   | 340 115   | 316 019   | 345 281   | 298 724   | 254 800   | 231 980   | 188 113   |
| Required reserves                  | 219 303   | 223 649   | 231 147   | 243 528   | 253 685   | 139 880   | 133 787   | 116 986   | 65 737    | 57 031    | 24 384    | 1 170     |
| Balances on corresponding accounts | 173 140   | 136 074   | 63 566    | 138 298   | 173 182   | 200 235   | 182 232   | 228 296   | 232 988   | 197 770   | 207 597   | 186 943   |

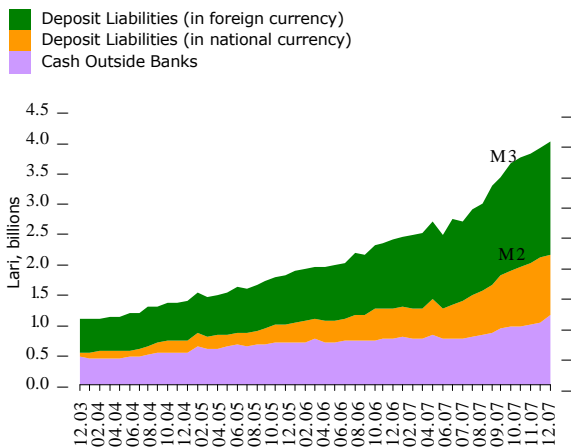
**Table 3.2.2**  
**Dynamics of reserve money**  
Monthly average data, 2007

|                                    | 01.07     | 02.07     | 03.07     | 04.07     | 05.07     | 06.07     | 07.07     | 08.07     | 09.07     | 10.07     | 11.07     | 12.07     |
|------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Reserve money                      | 1 218 235 | 1 208 282 | 1 185 314 | 1 236 298 | 1 299 819 | 1 314 985 | 1 365 013 | 1 374 932 | 1 365 490 | 1 379 037 | 1 373 199 | 1 442 550 |
| Money in circulation               | 848 825   | 834 789   | 843 270   | 877 041   | 902 371   | 937 892   | 998 142   | 1 047 942 | 1 068 789 | 1 093 891 | 1 123 381 | 1 209 154 |
| Bank deposits                      | 369 411   | 373 493   | 342 044   | 359 258   | 397 448   | 377 093   | 366 871   | 326 990   | 296 701   | 285 146   | 249 818   | 233 396   |
| Required reserves                  | 224 227   | 222 223   | 230 922   | 232 818   | 251 264   | 161 124   | 137 197   | 126 692   | 99 654    | 64 929    | 45 434    | 21 473    |
| Balances on corresponding accounts | 145 183   | 151 270   | 111 123   | 126 440   | 146 185   | 215 969   | 229 674   | 200 298   | 197 047   | 220 217   | 204 385   | 211 923   |

**Table 3.2.1.1**  
**Monthly Changes of Monetary Aggregates**  
End-Month Data, 2007

|                                    | 01.07     | 02.07     | 03.07     | 04.07     | 05.07     | 06.07     | 07.07     | 08.07     | 09.07     | 10.07     | 11.07     | 12.07     |
|------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>Broad Money (M<sub>3</sub>)</b> | 2 583 541 | 2 712 182 | 2 674 368 | 2 863 189 | 2 967 426 | 3 247 908 | 3 391 100 | 3 612 537 | 3 708 562 | 3 791 962 | 3 887 195 | 3 980 632 |
| Monetary Mass (M <sub>2</sub> )    | 1 297 637 | 1 298 772 | 1 365 417 | 1 454 927 | 1 536 421 | 1 646 161 | 1 781 935 | 1 863 591 | 1 928 320 | 1 991 032 | 2 077 144 | 2 131 971 |
| Cash Outside of Banks              | 739 864   | 752 811   | 761 988   | 781 242   | 819 339   | 851 145   | 908 966   | 943 985   | 952 466   | 986 457   | 1 007 265 | 1 152 070 |
| Lari in Circulation                | 834 396   | 840 606   | 857 971   | 893 463   | 922 622   | 967 394   | 1 026 111 | 1 065 079 | 1 081 077 | 1 107 397 | 1 139 021 | 1 310 488 |
| Deposits in National Currency      | 557 773   | 545 961   | 603 429   | 673 686   | 717 081   | 795 016   | 872 969   | 919 606   | 975 854   | 1 004 575 | 1 069 879 | 979 901   |
| Deposits in Foreign Currency       | 1 285 905 | 1 413 409 | 1 308 951 | 1 408 262 | 1 431 005 | 1 601 747 | 1 609 165 | 1 748 946 | 1 780 242 | 1 800 930 | 1 810 051 | 1 848 661 |

**Figure 3.2.1.1**  
**Broad Money**



### 3.2.1. Broad Money

At the end of December 2007 the M3 broad money aggregate totaled 3980.6 million Lari, exceeding the QIII parameter by 272.1 million Lari (7.3%). The growth is mainly attributed to increased volume of deposits denominated in foreign currency, the growth rate of the latter being 3.8%. In the accounting period deposits denominated in national currency grew by 4.0 million Lari to total 979.9 million Lari, while foreign currency denominated deposits totaled 1848 million Lari in the same period.

M2 broad money aggregate grew by 10.6% (203.7 million Lari) in QIV.

Annual growth rates of M3 and M2 broad money aggregates amounted to 49.6% and 53.5%, respectively.

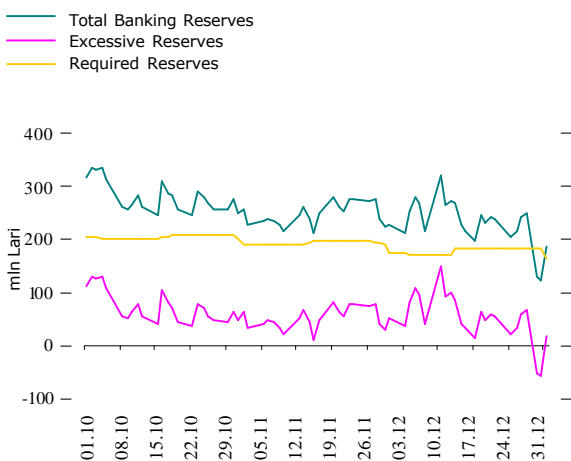
**Figure 3.3.1**  
**Absorbed Liquidity to Reserve Money Ratio**  
September-December, 2007



### 3.3. Certificates of Deposits and Overnight Loans

As of December 31, 2007, monetary mass withdrawn by means of CDs totaled 373 million Lari. By the end of QIII this figure equaled 464 million Lari. In October-November it further increased accounting for 43% of reserve money by end-October. However, from mid-December the volume of liquidity absorbed by the CDs dropped significantly decreasing to 24.9% of reserve money. This was due to the reduction of excessive reserves at the commercial banks (difference between available reserves and required reserves), while reserve money increased. The latter conditioned rapid growth of monetary mass, fueled by the reduction in government deposits and absorbed liquidity via the NBG.

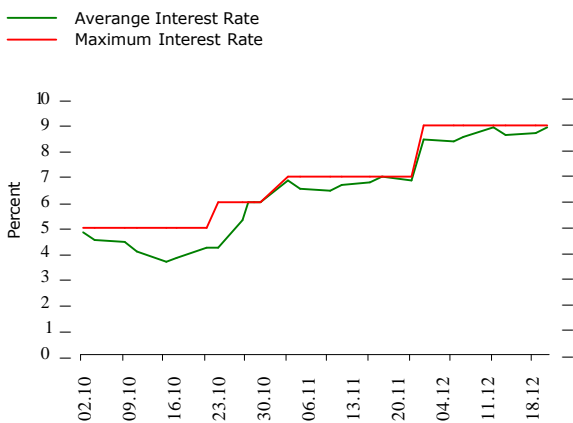
**Figure 3.3.2**  
**Reserves in the Banking System**  
QIV, 2007



In order to avoid drastic fluctuations of the interest rates, as well as taking into account inflationary trends and the situation in the money market, by the decision of the Monetary and Foreign Exchange Commission of the NBG the interest rates at the CD auctions were increased a few times. In particular, the highest interest rate on 7-day CDs (key interest rate of the NBG's monetary policy) was increased 3 times in QIV: by one percentage point on October 25, one percentage point on November 6, two percentage points on November 29, the eventual interest rate level amounting to 9% by the end-year.

Along with the reduction of excessive liquidity in the banking system, which indicated the increased

**Figure 3.3.3**  
7-Day CD Auctions  
QIV, 2007

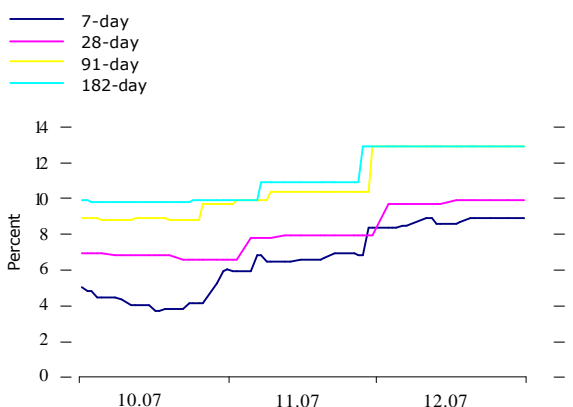


efficiency of liquidity management by the banks, the issue of managing liquidity crunch became important. In this regard, the NBG resumed using the overnight loans instrument. Overall, the NBG extended loans of 90 million Lari (of which, 73 million Lari in QIV). In the accounting period the interest rates on overnight loans grew from 12% to 14%.

### 3.4. Interbank Loans

According to the information received from the commercial banks, in QIV of 2007 interbank loans in national currency increased, which was mainly due to short-term (under one-week) loans. Meanwhile, along with the increased interest rates on CDs, interest on interbank loans also increased.

**Figure 3.3.4**  
Interest Rates on 7-Day, 28-Day, 91-Day, and 182-Day  
Certificates of Deposit



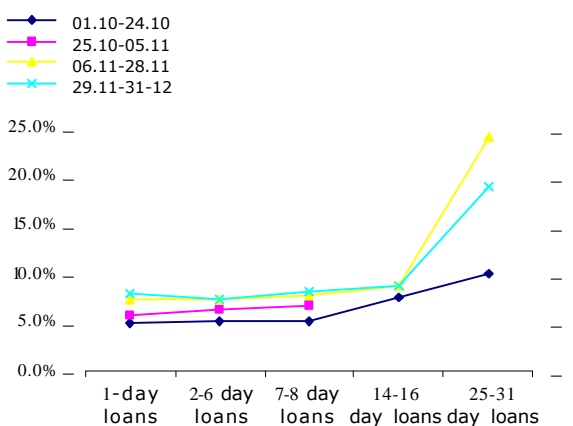
### 3.5. Banking Sector

In QIV of 2007 high growth rates of economy crediting by the commercial banks were preserved, with the annual growth rate amounting to 71% by end-year data. The volume of the credit portfolio equaled 4 636 million Lari. Along with the growth of the credit portfolio, banks increased long-term crediting. Due to active credit policy, the share of the long-term credits in total loans grew to 68.4%, compared to 68.2% in September 2007 and 66.6% at the end of 2006. Concurrently, due to more intensive banking activities in the consumer market the loans extended to physical persons increase at a faster rate than the loans extended to physical persons. By the end of 2007 long-term loans were dollarized at a higher rate than short-term loans, the dollarization rates equaling 79.4% and 43.5%, respectively. Overall, in December 2007 the loan dollarization was 68.5%, compared to 73.7% in September 2007 and 73.8% in December 2006. Traditionally, when extending short-term loans commercial banks prefer to use Lari. In QIV, and especially in November and December, there were strong signs of dedollarization with respect to short-term crediting.

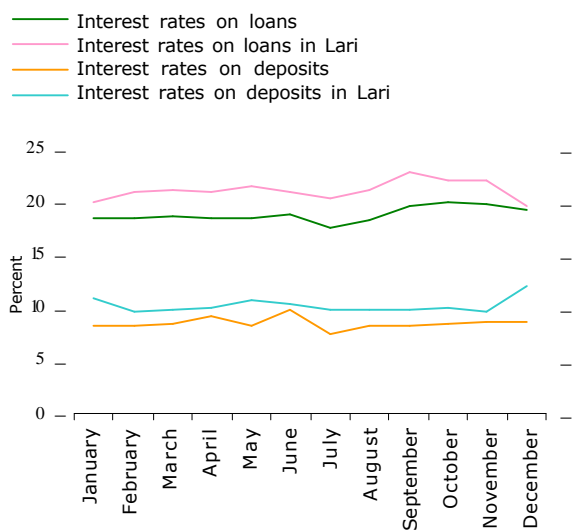
Compared to September 2007, the total volume of extended loans grew by 10.3% in December, with the Lari denominated loans growing at 32.6% and foreign currency denominated loans - only by 3%.

In December 2007 the volume of deposits totaled 2829 million Lari. The annual growth rate equaled 54.2% (including 74.4% growth rate of Lari-denominated deposits), and the growth rate against

**Figure 3.4.1**  
Average Weighted Interest Rate on Interbank Loans



**Figure 3.5.1**  
Interest Rates on Loans and Deposits



September 2007 - 2.6% (0.4% growth rate of Lari-denominated deposits). Slowed down growth rates of deposits in QIV were due to the reduction of current and government deposits. Meanwhile, compared to September, the term deposits grew by 12% in December, with the Lari-denominated deposits posting a 33.7% growth rate.

In general, interest rates on loans and deposits tended to increase in QIV, compared to QIII. Average weighted interest rate on loans grew to 19.6% in QIV from 18.4% in QIII. However, a slight decrease was posted in December. The situation with the interest rates on the Lari denominated deposits was different. In December the Lari denominated deposits at the commercial banks dropped by 8.4%, or approximately 90 million Lari, compared to November, which pushed the banks to increase interest rates on deposits in Lari.

Overall, growth rates of economy crediting, including loans extended in Lari, significantly exceeded growth rates of attracted deposits. In order to finance growing volumes of loans banks attracted resources from international financial institutions. The loans from the NBG as well as term deposits (mainly by resident legal persons) also increased. Such rapid growth of credit promoted aggregate demand expansion and, consequently, fueled inflation. On the other hand, increased interest rates on loans exerted a downward influence on the price level in the country.

### 3.6. External Sector of the Economy and the Balance of Payments

In QIII of 2007 the current account deficit amounted to 382.6 million USD. Compared to QII of 2007, it decreased by 9.5%, approaching the level of QI of 2007, while with respect to QIII of 2006, it grew by 10.5%. Improvements in QIII were due to growth of transportation and tourist services, and the negative effects of investments revenue in QII of 2007 no longer persisted. In QIII of 2007 the current account deficit was still conditioned by goods trade, while the latter was still negatively affected by price gains on petroleum products, and in particular, natural gas.

Officially declared foreign trade turnover in QIV of 2007 totaled 2040.3 million USD, exceeding the analogous figure in 2006 by 48.7%. Exports grew by 27.5%, imports - by 54.3%. If we compare the 2007 data to the previous year, it turns out that trade turnover in 2007 grew by 38.3%, including exports growth of 25% and imports growth of 41.8%.

**Table 3.6.1**  
**Top Ten Partner Countries in Imports (USD, millions)**  
 QIV,2007

| Country              | QI.06 | QII.06 | QIII.06 | QIV.06  | QI.07   | QII.07  | QIII.07 | QIV.07  |
|----------------------|-------|--------|---------|---------|---------|---------|---------|---------|
| Imports, total       | 682.5 | 887.1  | 1 023.2 | 1 085.0 | 1 045.1 | 1 179.3 | 1 317.7 | 1 674.6 |
| Of which:            |       |        |         |         |         |         |         |         |
| Turkey               | 77.7  | 121.2  | 144.9   | 178.8   | 136.2   | 167.4   | 184.0   | 240.2   |
| Ukraine              | 51.1  | 71.9   | 98.4    | 98.8    | 92.4    | 133.1   | 152.7   | 196.6   |
| Russia               | 128.2 | 141.6  | 140.9   | 148.0   | 168.5   | 129.6   | 125.4   | 155.3   |
| Azerbaijan           | 50.2  | 82.9   | 86.0    | 99.3    | 76.3    | 85.5    | 86.8    | 133.4   |
| Germany              | 68.1  | 92.2   | 86.3    | 104.6   | 86.3    | 92.6    | 99.2    | 109.2   |
| United Arab Emirates | 21.2  | 22.4   | 25.8    | 39.6    | 42.4    | 45.5    | 53.2    | 73.7    |
| Bulgaria             | 26.8  | 32.8   | 33.8    | 22.1    | 38.5    | 35.5    | 46.3    | 63.7    |
| China                | 17.4  | 23.5   | 29.1    | 33.3    | 41.5    | 45.2    | 56.9    | 63.1    |
| United States        | 27.1  | 30.1   | 28.5    | 44.0    | 35.5    | 39.7    | 71.2    | 57.5    |
| Turkmenistan         | 19.2  | 27.8   | 39.6    | 14.4    | 21.2    | 33.5    | 41.5    | 53.7    |
| Other countries      | 195.5 | 240.6  | 309.8   | 302.1   | 306.3   | 371.6   | 400.4   | 528.2   |

**Table 3.6.2**  
**Top Ten Partner Countries in Exports (USD, millions)**  
 QIV,2007

| Country         | QI.06 | QII.06 | QIII.06 | QIV.06 | QI.07 | QII.07 | QIII.07 | QIV.07 |
|-----------------|-------|--------|---------|--------|-------|--------|---------|--------|
| Exports, total  | 221.4 | 236.0  | 248.3   | 286.8  | 223.7 | 320.3  | 330.5   | 365.7  |
| Of which:       |       |        |         |        |       |        |         |        |
| United States   | 15.6  | 12.5   | 23.9    | 6.8    | 10.6  | 23.6   | 43.2    | 72.2   |
| Turkey          | 17.3  | 27.3   | 36.6    | 43.7   | 35.5  | 48.3   | 48.0    | 40.0   |
| Azerbaijan      | 14.6  | 20.2   | 22.4    | 34.9   | 21.9  | 41.3   | 35.1    | 39.0   |
| Ukraine         | 12.8  | 14.0   | 14.7    | 15.5   | 17.0  | 20.9   | 19.4    | 36.8   |
| Armenia         | 12.4  | 20.8   | 18.2    | 22.2   | 21.5  | 21.8   | 34.1    | 33.4   |
| Canada          | 10.1  | 12.0   | 12.8    | 14.0   | 9.5   | 14.5   | 19.7    | 26.8   |
| Germany         | 6.9   | 10.9   | 6.5     | 21.1   | 11.3  | 9.4    | 13.8    | 21.6   |
| Russia          | 43.8  | 10.0   | 13.1    | 8.7    | 13.3  | 10.6   | 19.4    | 9.8    |
| Kazakhstan      | 2.7   | 3.9    | 3.0     | 5.8    | 11.2  | 6.9    | 6.8     | 9.3    |
| Bulgaria        | 11.6  | 20.2   | 18.3    | 12.2   | 7.9   | 22.3   | 20.9    | 8.1    |
| Other countries | 73.6  | 84.3   | 78.6    | 101.9  | 64.0  | 100.5  | 70.1    | 68.5   |

**Table 3.6.3**  
**Main Imported Commodities (USD, millions)**  
 QIV,2007

| Country  | QI.06  | QII.06 | QIII.06 | QIV.06  | QI.07   | QII.07  | QIII.07 | QIV.07  |
|--|--------|--------|---------|---------|---------|---------|---------|---------|
| Imports, total   | 682.50 | 887.10 | 1023.20 | 1085.00 | 1044.50 | 1183.80 | 1321.20 | 1675.00 |
| Of which:  |        |        |         |         |         |         |         |         |
| Petroleum and Petroleum Products                       | 80.79  | 122.40 | 142.10  | 97.71   | 97.02   | 131.20  | 141.70  | 186.42  |
| Goods Made of Ferrous Metals, other                    | 0.79   | 1.41   | 3.69    | 6.28    | 21.22   | 49.20   | 67.33   | 117.61  |
| Cars   | 65.46  | 72.76  | 70.17   | 86.94   | 79.11   | 88.46   | 96.18   | 105.98  |
| Petroleum Gas and Other Gaseous Hydrocarbons           | 57.37  | 44.71  | 40.57   | 70.43   | 116.40  | 56.05   | 41.98   | 79.31   |
| Wheat and Meslin                                       | 16.90  | 20.69  | 26.95   | 34.52   | 26.36   | 26.94   | 36.05   | 49.84   |
| Medicaments  | 25.37  | 31.12  | 25.49   | 32.57   | 36.49   | 32.39   | 36.21   | 38.91   |
| Radio, Radio Broadcast, and TV Receivers               | 8.13   | 12.46  | 18.56   | 19.58   | 13.90   | 29.79   | 25.68   | 35.81   |
| Sugar  | 11.04  | 16.36  | 22.41   | 15.78   | 12.65   | 19.46   | 25.31   | 33.04   |
| Wheat and Buckwheat                                    | 8.23   | 6.78   | 5.81    | 8.94    | 6.06    | 4.84    | 8.04    | 26.96   |
| Flour  |        |        |         |         |         |         |         |         |
| Computers and Parts                                    | 7.97   | 10.30  | 14.23   | 13.95   | 14.11   | 20.11   | 19.11   | 24.66   |
| Thereof  |        |        |         |         |         |         |         |         |
| Rods and Bars of Iron Steel, Not Further Worked        | 6.18   | 8.89   | 10.98   | 7.04    | 19.30   | 15.39   | 17.74   | 19.43   |
| Chocolate and Other Food Preparations Containing Cocoa | 6.92   | 6.28   | 5.38    | 15.11   | 9.21    | 6.89    | 6.08    | 19.26   |

Main trading partner countries lists for both exports and imports changed. Russian imports moved down the list from the first place in QI of 2007 to the third in QIV of 2007. Turkey and Ukraine moved up to the first and the second place, respectively.

Due to imports growth rates far exceeding the exports growth rates the foreign trade deficit further expanded totaling 1308.9 million USD in QIV of 2007 and 3976.5 million USD in 2007. The annual growth rate of foreign trade deficit equaled 48.1%.

It should be pointed out that in December 2007, compared to December 2006, imports grew by 72.2%, while exports dropped by 5%. Negative exports growth rate was due to particularly high exports in December 2006.

Top ten partner countries in imports remained practically unchanged in QIV. In particular, Georgian exports go to Turkey (14.3%), Ukraine (11.8%), Russia (9.3%), etc. The eighth position in QIV was changed though - the U.S. (imports dropped by 20%) was replaced by China (imports grew by 10.5%).

In QIV of 2007 Georgian exports amounted to 366 million USD. In this period exports destinations included the United States (19.7%), Turkey (10.9%), etc. It should be pointed out that the first place in the list of Georgian exports destination which traditionally belonged to Turkey moved to the United States. It is interesting to note that Georgia exported to the United States ferroalloys (56 million USD), nitrogenous fertilizers (13.3 million USD), grape wines (0.8 million USD), etc.

Finland dropped out of the top ten list being replaced by Kazakhstan. In QIV of 2007 Georgian exports to Kazakhstan equaled 54 million USD, which included alcohol and alcohol beverages (3.4 million USD), wines (2 million USD), concrete (1.6 million USD), etc.

In QIV of 2007 certain changes occurred in the composition of imported and exported commodities.

In particular, the first place in the imports list still belongs to petroleum and petroleum products accounting for 11.1% of total imports. The second place is taken by the products of ferrous metals (7%), the third - by cars (6.3%), etc.

It should be noted that in QIV of 2007 imports of cars grew. In particular, the value of imported cars in this period equaled 105.98 million USD. In 2007 car

**Table 3.6.4**  
**Top Ten Exports Commodities (USD, millions)**  
 QIV.2007

| Country   | QI.06  | QII.06 | QIII.06 | QIV.06 | QI.07  | QII.07 | QIII.07 | QIV.07 |
|---|--------|--------|---------|--------|--------|--------|---------|--------|
| Exports, total  | 110.23 | 98.57  | 120.51  | 138.82 | 112.23 | 160.85 | 171.13  | 238.19 |
| Of which:   |        |        |         |        |        |        |         |        |
| Ferroalloys   | 19.63  | 20.09  | 30.22   | 19.85  | 18.11  | 33.90  | 43.26   | 64.36  |
| Walnuts, fresh of dried, nec  | 16.99  | 8.61   | 6.26    | 24.72  | 10.66  | 7.96   | 15.94   | 30.56  |
| Gold, Unworked or Semi-manufactured, or in a Powered Form               | 11.10  | 11.85  | 12.54   | 13.89  | 9.44   | 14.46  | 19.31   | 26.18  |
| Ferrous Metals Waste and Scrap  | 13.55  | 20.33  | 19.47   | 19.08  | 20.80  | 30.18  | 24.45   | 21.45  |
| Motor Cars  | 4.48   | 9.48   | 15.50   | 21.17  | 13.09  | 19.93  | 16.82   | 20.34  |
| Ethyl Alcohol, of an Alcoholic Strength under 80%, Spirituous Beverages | 8.41   | 5.27   | 8.43    | 7.97   | 11.58  | 14.30  | 12.30   | 19.24  |
| Portland Cement   | 4.05   | 7.43   | 7.87    | 9.43   | 9.21   | 17.48  | 18.73   | 18.58  |
| Fertilizers, Mineral or Chemical, Nitrogenous                           | 9.98   | 9.02   | 13.46   | 14.17  | 14.29  | 14.55  | 11.57   | 16.62  |
| Fruit and Vegetable Juices  | 0.52   | 0.94   | 0.53    | 0.80   | 0.55   | 0.78   | 1.56    | 10.67  |
| Natural Grape Wines   | 21.53  | 5.56   | 6.23    | 7.73   | 4.50   | 7.31   | 7.20    | 10.19  |

**Table 3.6.5**  
**Money Remittances to Georgia (USD, millions)**  
 2007

|                 | 2007  | Percent | Growth Compared to 2006 |
|-----------------|-------|---------|-------------------------|
| Total Transfers | 866.1 | 100.0   | 1.6 times               |
| Russia          | 544.6 | 62.9    | 1.5 times               |
| United States   | 115.7 | 12.3    | 1.8 times               |
| Spain           | 29.3  | 3.4     | 2.6 times               |
| Greece          | 26.0  | 3.0     | 1.6 times               |
| Ukraine         | 19.8  | 2.3     | 1.8 times               |
| Turkey          | 17.4  | 2.0     | 1.3 times               |
| Kazakhstan      | 11.3  | 1.3     | 3.0 times               |

imports totaled 370 million USD, of which 70 million USD worth cars were reexported.

In the accounting period imports of wheat flour grew considerably, amounting to 27 million USD. Compared to the previous quarter, sugar imports posted a 32% growth rate (Table 3.6.3)

In the exported commodities list there were high growth rates of the volumes of exported ferroalloys, hazelnuts, fruits and vegetables, etc.

In particular, exports of ferroalloys equaled 90 million USD in 2006, whereas in 2007 it grew by 78% totaling 160 million USD. In QIV of 2007 exports of ferroalloys increased by 70 million USD, compared to QIII, while with respect to QI of 2007 they grew 3.6 times.

In QIV of 2007 the volume of money remittances into the country grew considerably, counteracting to a great extent the current account deficit, despite the increase in monetary remittances abroad. In particular, in QIV 266.4 million USD has been transferred to Georgia, exceeding the analogous figure of the previous quarter by 7.9%. In the same period money remittances abroad totaled 34.1 million USD.

In the accounting period the main volumes of remittances came from Russia (more than 60% of total remittances), United States (20.6 million USD, or 7.7%), Spain (12.1 million USD, or 4.5%), etc.

As it was mentioned, in QIV of 2007 money transfers from Georgia abroad also took place. In particular, in this period 34.1 million USD has been transferred, of which 18.5 million USD to Russia (54.3% of total transfers), Ukraine - 4.8 million USD, Turkey - 1.2 million USD, etc.

In QIV of 2007, by preliminary data, revenues from tourism amounted to 56 million USD, or 29% less than in QIII, which explained by seasonality factors. Compared to the same quarter of 2006, these revenues increased by 85%.

Total revenues from tourism in 2007 equaled 210 million USD, exceeding the 2006 figure by 43.8%.

In QIV 399 thousand persons entered Georgia and 396 thousand persons left the country. This is a positive fact, compared to QIII when the number of people who left the country exceeded those who entered it by 19 thousand persons.

## Box 1. The Impact of the Balance of Payments on the Exchange Rate and Exchange Rate Fluctuations Impact on Inflation

The current account deficit of the balance of payment in QIII of 2007, compared to QIII of 2006, worsened by 10.4% totalling -382.62 million USD. With respect to QII of 2007, the current account deficit decreased by 9.5%. This deterioration of the current account deficit again occurred along with the economic growth: the current account deficit to real GDP ratio decreased from 16.77% in QIII of 2006 to 14.06% in QIII of 2007.

Deterioration of the current account deficit is explained by seasonal factors. However, it should be noted that decreased CAD-to-GDP ratio and economic growth rates are related to improved economic activity.

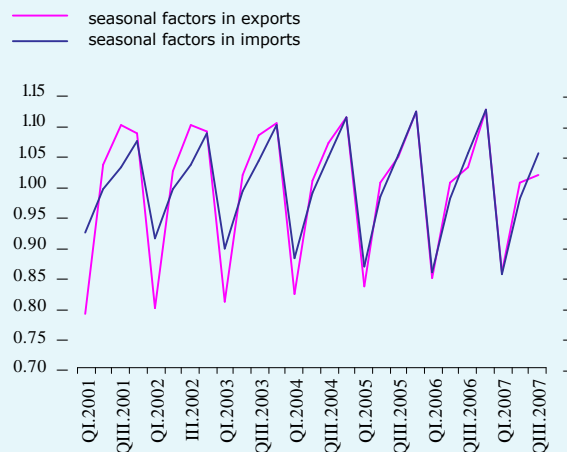
In QIII of 2007 the dynamics of the current account was traditionally determined by the trade balance. Foreign trade deficit grew wider by 21.1% compared to the previous quarter, amounting to 686.63 million USD. Its annual growth rate stood at 14.2%. Foreign trade deficit equaled 25.23% with respect to the GDP, which is 4 percentage points less than the analogous figure in 2006.

In QIII of 2007, compared to QIII of 2006, export revenues grew by 32.6%, while a quarterly growth was insignificantly low at 1.3%, again being determined by seasonal factors. Export revenues are largely influenced by seasonal factors, including seasonality of entrepreneurial activity, dependence of the economy on the climatic conditions, availability of primary raw materials, etc.

In the accounting period demand for imported goods increased in line with the aggregate demand expansion, resulting in a 21.8% annual and 11.4 quarterly increase of imports. Strong seasonal patterns in imports should be pointed out, although these factors were weaker than in the case of exports, which is explained by high demand for energy in autumn and winter.

In the accounting period the services account continued its upward trend and produced a moderate impact on the balance of payments; in particular, this figure increased by 48% amounting to 84.85 million USD.

**Figure 1**  
Dynamics of Seasonal Factors in Exports and Imports Revenues



In QIII of 2007 the volume of current transfers grew by 11.9% with respect to QIII of 2006, totaling 176.05 million USD. Along with the financial account, it largely accounts for the financing of the current account deficit.

The positive balance of the capital and financial accounts totaled 346.1 million USD, posting a 8.2% increase with respect to the same period of 2006. This is explained by the continued growing trends in FDI and other types of investments throughout 2007.

As regards reserve assets, their accumulation continued, posting a 222.458 million USD growth in QIII of 2007.

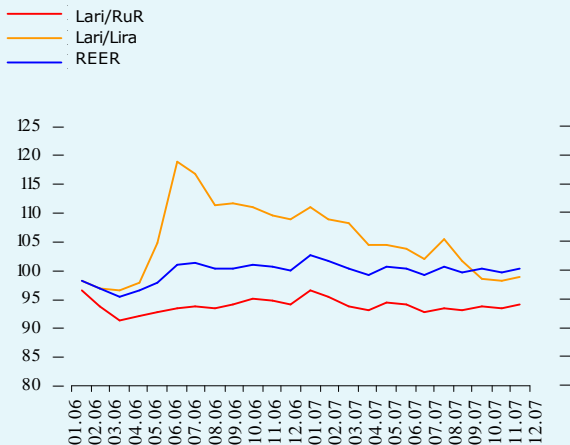
The above-mentioned factors influenced the Lari exchange rates against different foreign currencies. In particular, the real effective exchange rate in QIII and QIV of 2007 depreciated by 0.87% and 0.37% with respect to the respective quarters of 2006.

Accordingly, the Lari real exchange rate against different currencies showed different behavior: it depreciated against the Turkish lira by 9.02% and 10.2% in QIII and QIV, respectively, while it posted an insignificant depreciation against the Russian ruble - 0.8% in QIII and 1.1% in QIV.

In QIV the Lari exchange rate appreciated against the US dollar and the UK pound sterling by 14.4% and 8.9%, respectively.



**Figure 2**  
The Lari Exchange Rate against the Turkish Lira and the Russian Ruble and the Real Effective Exchange Rate

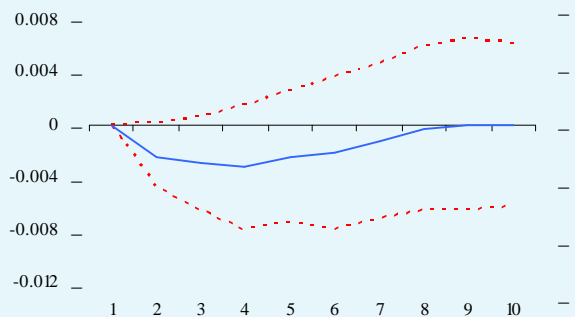


The above-mentioned processes influenced the volatile dynamics at the TIBFEX; in October the supply of foreign currency exceeded the respective demand at a record high level of approximately 145 million USD. In November the situation was reversed, and net foreign currency demand equaled 82 million USD. In December demand for foreign currency slightly lagged behind the supply by approximately 25 million USD.

During QIV of 2007 the Lari nominal exchange rate against the US dollar tended to appreciate, at the exception of mid-November, when it insignificantly depreciated. Starting from end-November the Lari nominal exchange rate continued to appreciate.

To describe the exchange rate impact on inflation, such factors were used as the nominal exchange rate against the US dollar, M2 money, nominal effective exchange rate and consumer price index. Using the vector autoregression estimation it turned out that 1% appreciation of the nominal effective exchange rate causes decrease of the CPI by approximately 0.13%. As it is shown on a graph below, the impact of the nominal effective exchange rate on inflation reaches its maximum in the fourth month and vanishes rather quickly, after eight months.

**Figure 3**  
Accumulated Response of DLP to Nonfactorized One S.D.D NEER Innovation



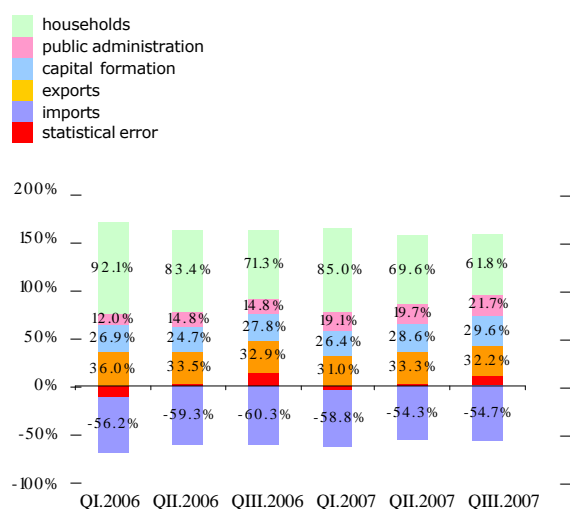
The Lari nominal exchange rate against the US dollar is likely to appreciate further - in the long-term period a 1% appreciation will lead to a 0.33% decrease in CPI, while a 1% appreciation of the nominal effective exchange rate will entail approximately a 0.13% CPI decrease.

### 3.7. Demand and Production

#### 3.7.1. Household Consumption

Compared to QII of 2007, household consumption in QIII decreased by 54.7 million Lari. With respect to QIII of 2006, household consumption increased only by 8.2% in nominal terms. Overall, in the first nine months of 2007, compared to the same period of 2006, household consumption nominally grew by 6.9% only, which means that in real terms there was a contraction of household consumption (in the 9 months of 2007 consumer prices grew by 8.5%, compared to the analogous period of 2006). This allows us to guess that changes in household consumption were negatively influenced by inflation.

**Figure 3.7.1.1**  
Use of Imports and Domestic Production (GDP, %)



**Table 3.7.2.1**  
Changes in Aggregate Demand  
2006-2007

|                       | III Quarter |         |            |             |
|-----------------------|-------------|---------|------------|-------------|
|                       | 2006        | 2007    | Difference | Growth Rate |
| GDP                   | 3626.6      | 4529.1  | 902.6      | 24.9%       |
| Household Consumption | 2586.6      | 2797.9  | 211.3      | 8.2%        |
| Government Spending   | 535.7       | 980.6   | 444.9      | 83.1%       |
| Capital Formation     | 1006.6      | 1339.9  | 333.3      | 33.1%       |
| Exports               | 1191.9      | 1460.3  | 268.4      | 22.5%       |
| Imports               | 2186.4      | 2478.3  | 291.9      | 13.4%       |
|                       | 9 months    |         |            |             |
|                       | 2006        | 2007    | Difference | Growth Rate |
| GDP                   | 9818.0      | 11960.1 | 2142.0     | 21.8%       |
| Household Consumption | 7995.1      | 8548.2  | 553.1      | 6.9%        |
| Government Spending   | 1372.2      | 2438.9  | 1066.7     | 77.7%       |
| Capital Formation     | 2600.5      | 3411.6  | 811.1      | 31.2%       |
| Exports               | 3336.0      | 3881.9  | 545.9      | 16.4%       |

It should be noted that it is difficult to confidently speak about accurate figures due to a high statistical error between GDP volumes calculated by production and expenditure methods.

### 3.7.2. Government Spending

In QIII of 2007 government spending grew in nominal terms by 21.2% with respect to the previous quarter, while in 9 months of 2007 it increased by 77.7%, compared to the same quarter of 2006. Government spending largely influences domestic demand. However, it should be noted that after currency conversion it is partly used for purchasing imports. In QIII of 2007 by the request of the Government of Georgia, the NBG performed currency conversion in the amount of 192.3 million USD, exceeding the analogous figure in 2006 2.4 times. In the first half of 2007 the volume of the above currency conversions totaled 454.7 million USD. Currency conversions in 9 months of 2007 accounted for 30% of total government spending (2438.9 million Lari).

Among the aggregate demand components in QIII of 2007 with respect to the same period of 2006, the highest growth rates were posted by the government spending, which promotes economic growth but complicates the goal of maintaining price level stability.

### 3.7.3. Investments

In QIII of 2007 capital formation totaled 1339.9 million Lari, exceeding the analogous 2006 figure by 33.1%. the share of investments in the GDP increased from 32.0% in QIII of 2006 to 34.5% in QIII of 2007. In nine months of 2007 capital formation grew in nominal terms by 31.2% with respect to the same period of 2006.

The volume of FDIs in QIII of 2007 amounted to 412.9 million USD, or 49.6% more than in the same quarter of 2006.

The main inflows of FDIs is stem from the following countries:

Netherlands (24.0%), Virgin Islands (15.6%), Cyprus (10.2%), United States (7.0%), Ukraine (5.8%), Turkey (5.7%), and Russia (5.4%).

Drastic increase in FDIs represented one of the main factors determining high demand for national currency and the Lari exchange rate appreciation.

Strong capital formation and growth of FDIs is a crucial factor of long-term economic growth in the country. However, it also exerts an upward pressure on the inflation.

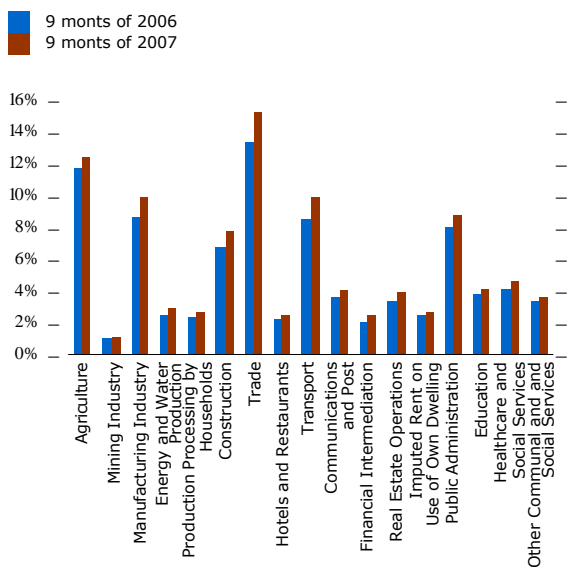
### 3.7.4. Imports<sup>1</sup>

Imports of goods and services in QIII of 2007 grew by 11.3% in nominal terms with respect to QII of 2007 and by 13.4% with respect to QIII of 2006. In January-September 2007, imports growth equaled 16.3% against the same period in 2006, amounting to 938.4 million Lari.

### 3.7.5. Exports

Exports of goods and services show an upward trend. Compared to QII of 2007, an insignificant 0.7% decline in goods exports in QIII was largely compensated by a 23% increase in services exports in the same quarter, resulting in a 7.0% exports growth rate. With respect to QIII of 2006 the exports growth rate is even more impressive equaling 22.5%. The exports growth rate in 9 months of 2007 was 16.4% with respect the same period in 2006, which is equal to the imports growth rate. However, in nominal terms exports growth significantly fall behind imports growth, totaling only 545.9 million Lari.

**Figure 3.7.6.1**  
Value Added Produced in 2006 Prices (9 months of the 2006 GDP = 100)



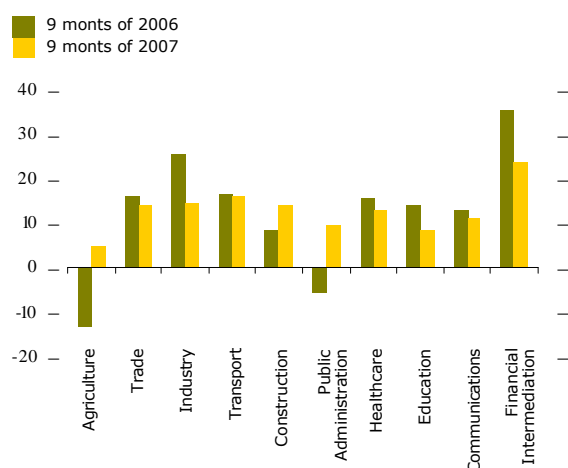
### 3.7.6. Production

In QIII of 2007 the Georgian GDP at current market prices equaled 4,529.1 million Lari, or 1031 Lari per capita.

In nominal terms the GDP produced in January-September 2007 grew by 22.6%, compared to the same period of 2006.

<sup>1</sup> Due to specific methodological issues, there are certain differences in the balance of payments and national accounts data on exports and imports. However, general trends are identical. In these parts on exports and imports the national accounts data is presented.

**Figure 3.7.6.2**  
Growth Rates in Different Sectors  
in 9 Months of 2006 and 2007



In QIII of 2007 the GDP growth with respect to QIII of 2006 equaled 13.2%. As a result, in 9 months of 2007, compared to the same period of 2006, GDP grew at 12.7%.

Sectoral analysis of the economic growth shows that in QIII of 2007 positive growth rates with respect to the previous quarter were posted in every sector of the economy.

**Table 3.7.6.1**  
The Georgian Gross Domestic Product by Sectors

|   | Share in the GDP in 2006 | Real Growth in QI of 2007 | Real Growth in QII of 2007 | Real Growth in QIII of 2007 | Real Growth in QI-III of 2007 | Share in GDP Growth in QI-III of 2007 |
|---|--------------------------|---------------------------|----------------------------|-----------------------------|-------------------------------|---------------------------------------|
| Agriculture, Forestry, Fishing                          | 11.2%                    | -6.5%                     | 6.0%                       | 15.8%                       | 5.0%                          | 0.6%                                  |
| Mining and quarrying                                    | 1.0%                     | 27.8%                     | 9.7%                       | 13.4%                       | 14.6%                         | 0.1%                                  |
| Manufacturing   | 8.7%                     | 9.4%                      | 16.9%                      | 14.6%                       | 14.3%                         | 1.2%                                  |
| Electricity, gas and water supply                       | 2.7%                     | 6.8%                      | 7.2%                       | 23.2%                       | 11.9%                         | 0.3%                                  |
| Processing products by household                        | 2.5%                     | 13.2%                     | 15.3%                      | 15.6%                       | 15.0%                         | 0.4%                                  |
| Construction  | 6.9%                     | 12.1%                     | 7.0%                       | 20.8%                       | 14.1%                         | 1.0%                                  |
| Trade services, Repair services                         | 13.6%                    | 13.9%                     | 17.8%                      | 11.5%                       | 14.2%                         | 1.9%                                  |
| Restaurant and Hotel services                           | 2.3%                     | 4.7%                      | 19.5%                      | 22.3%                       | 16.1%                         | 0.4%                                  |
| Transport and storage                                   | 8.0%                     | 23.2%                     | 16.8%                      | 10.4%                       | 16.2%                         | 1.3%                                  |
| Communications  | 3.6%                     | 5.6%                      | 14.0%                      | 13.3%                       | 11.2%                         | 0.4%                                  |
| Financial intermediation                                | 2.1%                     | 18.2%                     | 33.2%                      | 21.3%                       | 23.7%                         | 0.5%                                  |
| Real estate, renting and business activities            | 3.3%                     | 10.4%                     | 14.9%                      | 25.6%                       | 17.5%                         | 0.6%                                  |
| Imputed rent of own occupied dwellings                  | 2.4%                     | 6.9%                      | 6.5%                       | 1.9%                        | 5.1%                          | 0.1%                                  |
| Public administration and defense                       | 8.5%                     | 10.8%                     | 6.8%                       | 10.8%                       | 9.3%                          | 0.8%                                  |
| Education   | 3.7%                     | 2.8%                      | 20.2%                      | 3.8%                        | 8.5%                          | 0.3%                                  |
| Health care and social Services                         | 4.3%                     | 16.1%                     | 11.9%                      | 12.6%                       | 13.2%                         | 0.6%                                  |
| Other community, social and personal service activities | 3.3%                     | 3.1%                      | 7.9%                       | 3.8%                        | 5.0%                          | 0.2%                                  |
| Private households with employed persons                | 0.1%                     | 3.3%                      | 4.8%                       | 8.8%                        | 5.8%                          | 0.0%                                  |
| (-) FISIM adjustment                                    | -0.8%                    | 136.5%                    | 50.3%                      | 25.8%                       | 66.9%                         | -0.5%                                 |
| (=)Gross Domestic Product at basic prices               | 87.4%                    | 8.6%                      | 13.3%                      | 13.0%                       | 11.8%                         | 10.3%                                 |
| (+) Taxes on products                                   | 13.1%                    | 27.2%                     | 14.5%                      | 14.1%                       | 18.4%                         | 2.4%                                  |
| (-) Subsidies on products                               | -0.4%                    | 2.1%                      | 3.3%                       | 2.0%                        | 2.5%                          | 0.0%                                  |
| (=)Gross domestic product at market prices              | 100.0%                   | 11.4%                     | 13.4%                      | 13.2%                       | 12.7%                         | 12.7%                                 |

Source: Calculations are based on the data from the Department of Statistics of the Ministry of Economic Development<sup>1</sup>.

<sup>1</sup> In order to calculate the sectoral impact on the GDP, the sectoral growth rate in the given time period is multiplied by the impact of this sector on the GDP in the previous period. Such approach does not ensure absolutely accurate data but is very close to reality in presenting the share of each sector in the overall GDP growth.

# 4

## Inflation Forecasts

In QIV of 2007 the actual inflation rate stood at approximately 11%, which was higher than 9.15-9.35% range forecasted by the NBG. The difference is explained by more optimistic assumptions used in the forecast. In particular, the Lari exchange rate appreciation against the US dollar turned out lower than expected, M2 money mass exceeded the forecasted target by 150 million Lari on the average; in addition, in end-December oil price gains in the world market soared significantly influencing the forecast accuracy.

In order to improve inflation forecasting, underlying assumptions have been updated, and the monthly inflation model which is based on long-run equilibrium has been reestimated. Contrary to previous quarters, the variable of imported inflation turned statistically significant again.

As regards the inflation-estimating equation, it has the following form:

$$\delta dp = 0,079de + 0,092de_{-2} + 0,043dm_{-1} + 0,049dm_{-2} + 0,006dp^{oil} + 0,125dp^{food} + 0,09dp^{imp} + 0,016ecm$$

where:

p – consumer price index;

m – money mass;

e – Lari/US dollar exchange rate;

$p^{oil}$  – average oil price in the world market;

$p^{food}$  – prices on fruits and vegetables;

$p^{imp}$  – weighted inflation in main trading partner countries;

ecm is a long-run equilibrium variable having the following form:

$$ecm = p_{-1} - 0,33e_{-1} - 0,67m_{-1} + 1,23y_{-1} - 7,71$$

---

where:

y – a gross domestic product.

The equation also includes seasonal and dummy variables to describe certain seasonal and structural changes;

As regards new assumptions, in the recent period oil price gains in the world market reached record high levels. According to the Blumberg information system, in 2008 both oil and wheat flour prices in the world markets are expected to decline. Such developments will have a positive effect on efforts related to maintaining price stability in Georgia. On the other hand, in 2008 significant increase in social programs financing is expected from the state budget, which will strengthen inflationary pressure on the consumer prices. Taking into account these risks, the NBG will conduct adequate monetary policies in 2008 in order to maintain price level in the appropriate range.

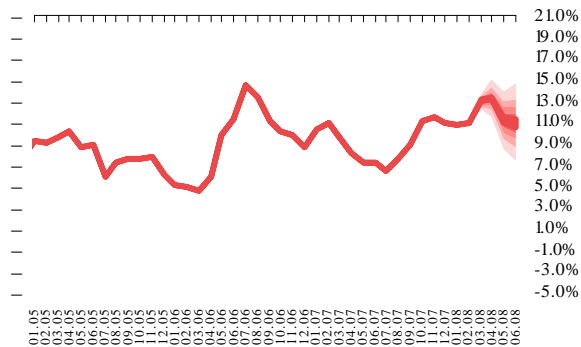
Based on NBG estimates and quarterly break-down of state budget expenditures it is possible to make certain forecasts in terms of money supply.

In 2007 M3 broad money multiplier grew by 19.3% as a result of banking sector development. The multiplier growth is expected to continue at a similar rate in 2008. Assuming that in 2008 the real GDP growth equals 8%, velocity of money decreases by approximately 10% (similar to previous years), and money multiplier grows at 19%, in order to contain a one-digit inflation target the reserve money aggregate growth rate should not exceed 15% in the medium run.

- With pending spring 2008 parliamentary elections it is expected that in the first half of the year foreign currency revenues will be lower than in the second half.
- Government deposits in QI-II of 2008 will decrease, subsequently increasing in QIV. Foreign currency expenditures in QI will exceed foreign currency revenues.

In the short-run perspective there are the following risks of price gains: excessive monetary mass, increased government expenditures and reorientation from capital expenditures to social spending, upcoming parliamentary elections, uncertainties in the world financial markets, and increased inflationary expectations among the population. These risks will

**Figure 4.1**  
Inflation Forecast



deteriorate inflation in the short-run. Accordingly, contractionary monetary policy will be expedient.

In 2007 the growth of economic activity was fueled by state and private expenditures. The latter in turn was conditioned by large capital inflows. According to the available information, double-digit GDP growth rate continues. In QIII of 2007 a record high level of 12.7% was achieved. In addition, exports growth which started in QII and continued throughout QIII of 2007, fueled aggregate demand. On the other hand, the 2007 November political events are expected to slow down economic growth to a certain extent in 2008.

The following assumptions have been made with regard to the variables of the model:

- Broad money less foreign deposits will grow at an annual 50% rate by the end-year; the real GDP growth is expected at the 8% level; the Lari exchange rate appreciation trend against the US dollar will be maintained; prices on fruits and vegetables will growth only at 10% per annum. It should be pointed out though that due to strong dependence on climatic conditions, it is difficult to forecast these events. In line with the crops level, prices on fruits and vegetables could be more or less, but are expected to grow at 10% on the average.
- According to different international sources, and in particular, in line with the research conducted by the Bank of Switzerland, oil prices in the world market will decline to the level of 87 USD/barrel in QII of 2008 as a result of increased supply and expected recession.
- Imports inflation, similar to the previous year, will amount to 8%.

According to the obtained results, the annual equation by the end of QI of 2008, with 10% probability, will be within the range of 12.8% to 13.07%. Inflation rate will decrease in April, due to higher demand for Lari and exchange rate appreciation. In addition, expected decline of oil prices and economic growth will positively affect the inflation decrease.

## Box 2. Principal Components Method

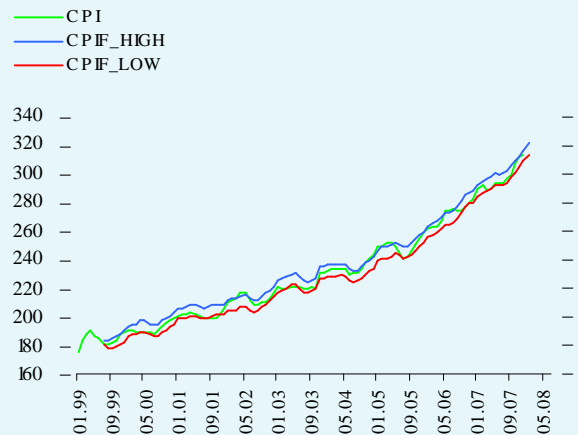
It is a well-known fact that macroeconomic variables could be affected by the same event, which results in strong correlation between these variables. This fact is called multicollinearity. In such cases estimates obtained by the least squares method is not statistically significant, since variances of coefficients estimated by the OLS significantly exceed the theoretically allowed levels.

Among estimation methods used in the case of multicollinearity the principal components method should be pointed out. According to this approach, a new orthogonal system is obtained by means of a linear combination of the explanatory variables. When weighting the variables, only orthogonal linear combinations of the explanatory variables with respect to each other are used, due to which it becomes possible to explain the main part of the variation in the dependent variable. The advantage of the principal components method consists in the fact that by choosing the correct combination from the primary variables system it becomes possible to reduce the number of explanatory variables and, consequently, to increase the degree of freedom without losing necessary pieces of information. However, the number of explanatory variables should not exceed the number of observations.

The international company Global Insight, along with the vector autoregression method, uses principal components method in order to evaluate the models used by the NBG to estimate the consumer prices and the GDP in Georgia. Currently in modeling the consumer price index important work has already been done, which has the following advantages in forecasting:

- the adjusted  $R^2$  is higher than 0.99;
- average changes in the annual growth of consumer prices largely exceeds the average forecasting error;
- the average forecasting error is significantly lower than required for conducting adequate monetary policies;
- real values of the estimates are within small confidence intervals, equaling +/- one standard deviation (See Graph).

Figure 1  
Forecast of Consumer Price Index



With regard to the data, in order to estimate the CPI 41 variables have been used, which take into account not only Georgian realities but also economic developments in the international markets and neighboring countries. The model includes world prices on different goods (non-ferrous metals, fuels, food - flour, sugar, olive oil, rice, coffee, cocoa); the CPIs and the exchange rates of the main trading partner countries (Russia and Turkey); volumes of imports and exports to describe imports inflation; state revenues, expenditures and grants to capture the situation in the fiscal sector; monetary aggregates - cash in circulation, volume of deposits denominated in foreign and national currency.

These data is obtained monthly and is not adjusted for seasonality. In order to model deterministic shocks and describe other historical shocks dummy variables are used. In order to improve the results the regression includes autoregressive and moving average variables.

The estimated regression has the following form:

$$\begin{aligned} \text{CPI} = & 55,23 + 2,45 * \text{DUMMY1} + 1,03 * \text{DUMMY4} - \\ & - 2,65 * \text{DUMMY6} - 2,58 * \text{DUMMY7} - 1,57 * \text{DUMMY8} + \\ & + 5,88 * \text{DUMMY2003\_11} + 0,76 * \text{CPI}_{-1} + 1,69 * \text{PC1}_{-2} + \\ & + 0,82 * \text{PC2}_{-2} - 0,35 * \text{PC3}_{-4} + 0,55 * \text{AR}(1) + 0,21 * \text{AR}(2) + \\ & + 0,24 * \text{MA}(6) - 0,47 * \text{MA}(7) + 0,26 * \text{MA}(8) \end{aligned}$$

where:

CPI – Consumer price index;



DUMMY N – Dummy variable adjusting for the N<sup>th</sup> month's seasonality;

DUMMY 2003\_11 – Dummy variable adjusting for November 2003;

PC<sub>i,j</sub> – i principal component with j time lag;

AR – Autoregressive variable;

MA – Moving average variable;

The obtained estimates of the model look as follows:

where:

CPI – is the consumer price index;

CPIF\_HIGH – estimate plus one standard deviation;

CPIF\_LOW – estimate minus one standard deviation;

The graph above clearly shows that the estimate of the consumer prices adequately describes the actual numbers.

From the model estimated by the principal components method it is possible to derive partial derivatives with respect to the dependent variable, in order to describe the impact of an appropriate explanatory variable.

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