



**NATIONAL BANK OF THE  
REPUBLIC OF KAZAKHSTAN**

**AGENCY OF THE REPUBLIC OF  
KAZAKHSTAN FOR REGULATION AND  
SUPERVISION OF FINANCIAL MARKET  
AND FINANCIAL ORGANIZATIONS**



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# **KAZAKHSTAN FINANCIAL STABILITY REPORT**

**December 2007**

## Foreword

The National Bank of the Republic of Kazakhstan jointly with the Agency of the Republic of Kazakhstan on Regulation and Supervision over the Financial Market and Financial Organizations (Financial Supervision Agency) publishes annually Financial Stability Report since 2006.

According to legislation of the Republic of Kazakhstan, the Financial Supervision Agency ensures financial stability of the financial market and financial organizations and the National Bank promotes stability of the financial system.

According to Memorandum on financial stability, concluded between Government of the Republic of Kazakhstan, National Bank and Financial Supervision Agency on November 10, 2007:

*“Financial stability is defined as the absence of the disproportions in the economy, which may cause the consequent negative correction of the financial markets, emergence of the systemic crisis and inability of the financial institutions to maintain the smooth financial system operations and business activity of the real sector.”*

The following financial stability aspects are evaluated in this Financial Stability Report:

- (1) efficient and timely distribution of financial resources between savors and investors;
- (2) adequate risk assessment and management;
- (3) ability of the financial system to absorb financial shocks without substantial consequences.

This Financial Stability Report is focused on financial market participants and also on audience interested in a problematic of financial stability. The National Bank and the Financial Supervision Agency have set a task to publish the results of researches and analysis of risks, as well as special financial stability researches. For this purpose the Financial Stability Report 2007 consists of general sections and a special section with profound analysis of financial stability factors.

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*This Kazakhstan Financial Stability Report has been prepared by the National Bank of the Republic of Kazakhstan, jointly with the Agency of the Republic of Kazakhstan for Regulation and Supervision of Financial Market and Financial Organizations.*

## **Abbreviations:**

<b>IMF</b>	International Monetary Fund
<b>UN</b>	United Nations Organization
<b>OECD</b>	Organization of Economic Cooperation and Development
<b>ILO</b>	International Labor Organization
<b>CIS</b>	Commonwealth of Independent States
<b>USA</b>	United States of America
<b>FRS</b>	US Federal Reserve System
<b>ECB</b>	European Central Bank
<b>NBRK</b>	National Bank of the Republic of Kazakhstan
<b>SARK</b>	Agency of the Republic of Kazakhstan for Statistics
<b>FSA</b>	Agency of the Republic of Kazakhstan for Regulation and Supervision of Financial Market and Financial Organizations
<b>MF</b>	Ministry of Finance of the Republic of Kazakhstan
<b>MEB</b>	Ministry of Economy and Budgeting of the Republic of Kazakhstan
<b>SCPP</b>	State Center for Pension Payments
<b>KASE</b>	JSC “Kazakhstan Stock Exchange”
<b>KDIF</b>	JSC “Kazakhstan Deposit Insurance Fund”
<b>ARFC</b>	JSC “Almaty Regional Financial Center”
<b>JSC</b>	joint-stock company
<b>STB</b>	second-tier bank(s)
<b>APF</b>	accumulation pension funds
<b>SM</b>	securities market
<b>ISMT</b>	Interbank System of Money Transfer of the Republic of Kazakhstan
<b>GDP</b>	Gross Domestic Product of the Republic of Kazakhstan
<b>CPI</b>	consumer price index
<b>FDI</b>	foreign direct investments
<b>M3</b>	monetary supply
<b>GFD</b>	gross foreign debt
<b>LIBOR</b>	London Interbank Offered Rate
<b>GS</b>	government securities
<b>KZT</b>	tenge
<b>ths.</b>	thousand
<b>mln.</b>	million
<b>bln.</b>	billion

## I. Overview

Within the framework of financial stability report 2006 the potential risks were given strong emphasis, which proved to be stress factors to financial stability in 2007. The following factors were particularly given the emphasis:

- i. low effectiveness of using bank loans by enterprises, as well as high loan concentration in trade, construction and real estate related operation industries.
- ii. high level of indirect risks related to the currency mismatch of the assets and liabilities of the corporate sector and households;
- iii. increase of debt burden of the individuals that outpaces the growth of their available income in the background of relatively low level of savings;
- iv. high dependence of the main bank borrowers' solvency, particularly, in the construction field, on the factors that provide consumer demand and that impede substantial price adjustment for the real and financial assets;
- v. undue emphasis on collateral, primarily on real estate, in lending;
- vi. high level of banks' foreign indebtedness, which will determine requirements in refinancing of their foreign liabilities.

Furthermore, the analysis of banks' risk tolerance adequacy had shown that banks were driven by current conditions which ensured profitability rather than thorough assessment of potential threats. One of those threats was shrinkage of global liquidity owing to mortgage crisis in the US and declining "risk appetite" of international investors which wasn't adequately taken into account by financial market participants.

In this situation main vulnerability factors were revalued by investors, which are referred to:

- a) country's external debt level comparable to GDP;
- b) high share of banks in external debt structure, as well as high share of liabilities to nonresidents in total banks' liabilities;
- c) widening of current account deficit;
- d) high potential burden on foreign exchange reserves of National Bank in case of foreign exchange demand and supply imbalance on domestic exchange market should the capital inflow decline occur.

Consequently, for the period from August to October 2007, the following factors were determinative to financial stability:

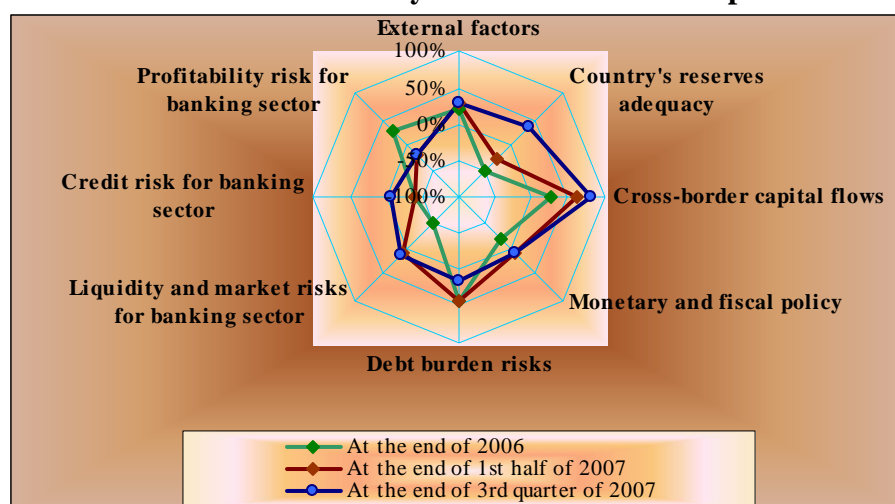
- revision of credit policy by banks, especially related to riskiest lending (mortgage, consumer loans, loans to construction industry);
- interest rate growth on interbank money market;
- slight withdrawal of deposits by households;
- transfer of financial assets to foreign currency by market participants;
- rush demand for foreign currency from households in August 2007;
- increasing imbalance between foreign currency supply and demand;
- decrease of National Bank reserves;
- active use of refinancing instruments by banks.

Overall, combination of internal and external factors has lead to the upgrowth of several groups of risks to Kazakhstan's financial stability in 2007<sup>1</sup>.

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<sup>1</sup> Regarding methods of integrated risk assessment for financial stability on the basis of "Risk Assessment Map", please, refer to Section IV. The 3<sup>rd</sup> quarter data of 2007 is preliminary for some indices.

## Financial Stability Risks Assessment Map



*Note: Values of indicator located close to the center of graph mean lower level of risk or weakening of vulnerability's factors. Values, located in negative area of scale mean insignificant or negligible level of risk.*

Several factors contributed to the pressure on balance of payment and stability of cross-border capital and international reserves of National Bank: import growth along with drop in productivity; increase of average contract prices and gross internal demand; increase of pay-outs to non-residents together with capital inflow cutback under global liquidity crisis development.

The increase of government spending and capital inflow stimulated money supply growth. The combination of price shocks on global food markets, instability of financial markets and growing internal gross demand led to higher inflation in the second half of 2007.

The expansion of financing sources through external borrowing stimulated the credit boom in Kazakhstan's economy. Revision of credit policy by banks in terms of global liquidity cutback creates additional pressure on quality of credit portfolio and higher requirements to banks' profitability as well.

External borrowing cutback in terms of considerable gap between credit and deposit bases of banks will influence the rates of crediting economy and affect the dynamics of economy growth.

The growth of global interest rates, the increase of the price of external borrowing, the volatility of global FX and stock markets slightly increase sensitivity of financial system to market and liquidity risks. At the same time, the decrease of banks' liquidity was balanced by supportive measures of the National Bank. Presently, the banks possess more than sufficient assets, including external assets, which serve as "liquidity cushion".

In spite of high concentration on external borrowing, there is a sufficient level of profitability and liquidity in banking system. The level of nonperforming loans does not exceed the critical values. The credit portfolio is sufficiently covered by provisions.

The credit portfolio of banks includes high share of collateral loans. At the same time, the loan-to-value ratio is acceptable due to conservative collateral policy of banks.

Price correction in the real estate market is expected due to its speculative character and overheats. The intensity of correction depends on the scale of credit activity cutback in the credit market and financial stability of corporate debtors and households.

The financial condition of debtors, including the corporate sector, remained stable. It concerns the level of profitability and debt burden. The construction sector turns out to have the decreasing profitability along with considerable leverage growth. At the same time the problem is not that crucial to the whole sector, as substantial variation of financial indicators' distribution is observed. Further increase of debt burden of households is also observed. Price correction in the real estate market and the inflation growth build up additional pressure on households' solvency.

The potential credit risk is stipulated by considerable gap in FX position of debtors, whereas the assets do not cover the liabilities in foreign currency. This considerably constrains the application of exchange rate policy for stability of balance of payment.

Overall, the growth of risks to financial stability did not increase the possibility of financial crisis significantly. At the same time the level of financial system's vulnerability has risen, which in turn requires aggressive state interventions in order to keep financial stability. Effectiveness of state intervention is determined by necessity to support banks, but for all that support should not create a false feeling of its absoluteness. There is a great need to revise not only the credit policy by banks, but the whole strategy itself, including their expansion to foreign markets. For this reason, banks should more effectively make use of internal sources of funds. In addition, implementation of coordinated actions to stabilize the situation with current account of balance, including the use of monetary and fiscal policy instruments, is essential.

## II. Macroeconomic Risks and Risks of Financial Markets

### 1. Foreign Factors Defining Financial Stability

*Generally, the raised turbulence at the international financial markets continues to define the general line of further world economy development. Thus, the degree of negative effect of external factors on stability of the national financial system will depend on duration of this process.*

#### 1.1. Foreign Factors of Macroeconomic Environment

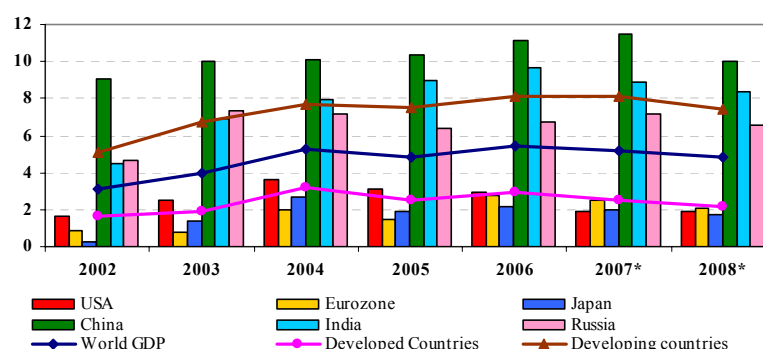
*Despite the fact that a number of factors containing potential threat for stable growth of world economy increases (risk of slowdown of the USA economy, high oil and food commodities prices, risk of economic overheating in some countries with emerging markets), world economy will keep its stable growth in prospect.*

*On the whole, development of world economy in this year is characterized by more moderate growth as compared with previous years.* In 2006 growth rate of the world economy was rather high and according to the estimate of the International Monetary Fund (hereinafter referred to as “IMF”) constitutes 5.4% keeping five-year stable tendency of continuing growth (Figure 1.1.1). In 2006 a high pace of development was achieved due to high economic growth of Eurozone countries (2.8% as against 1.5% in 2005) and Japan (2.2% as against 1.9% in 2005), and the largest developing countries, such as China (11.1%) and India (9.7%). At that time, more moderate rate of economic growth is observed in the USA due to weakening of the housing market.

According to IMF forecasts some slowdown of world economy growth to 5.2% is expected for results of 2007, and in 2008 to 4.8%, as a result of negative impact of the situation at the “subprime” mortgage market in the USA, high oil prices and prices for other primary goods and, consequently, escalation of inflation in many developing countries and continuing fall of US dollar exchange rate. In a greater part adjustment for slowdown of economic development will deal with developed countries which rate of growth in 2007 and 2008 will come to 2.5% and 2.2% as against 8.1% and 7.2% for developing countries, respectively. On the whole, despite the forecasts of moderate economic growth of developed countries, world economy would keep rather high pace of development owing to dynamic growth of developing countries. Further integration into the world market by the developing countries, improvement of functioning of domestic markets and increased demand for many primary goods significantly contributes acceleration to their growth.

Figure 1.1.1

Real GDP in particular countries and regions (annual % change)



\* -forecast

Source: IMF, national sources<sup>2</sup>

<sup>2</sup> Forecast data for Russia were provided on a basis of consensus-projections materials of the Center of Development. The date of the forecast preparation is 23.07.-02.08.2007.

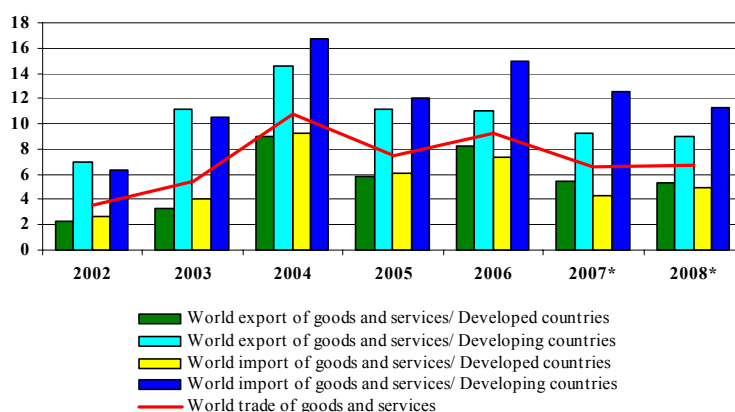


***In this year the tendency of slowdown of world trade owing to decrease of domestic demand in economy of the USA is observed.***

Against a background of the forecasts of the global growth slowdown according to IMF data in 2007 it is expected a decrease in the growth rates of the world trade to 6.6% as against 9.2% in 2006. At the same time increased risks of deterioration the situations connected with the financial and real estate markets and insufficient domestic demand in economy of the USA have been noted as major factors capable to slowdown growth of the world trade (Figure 1.1.2). The forecast data for 2007-2008 actually assume decrease of active growth stage of the world trade in midterm prospect.

**Figure 1.1.2**

**World trade of goods and services (annual percentage change)**



\*-forecast

Source: IMF

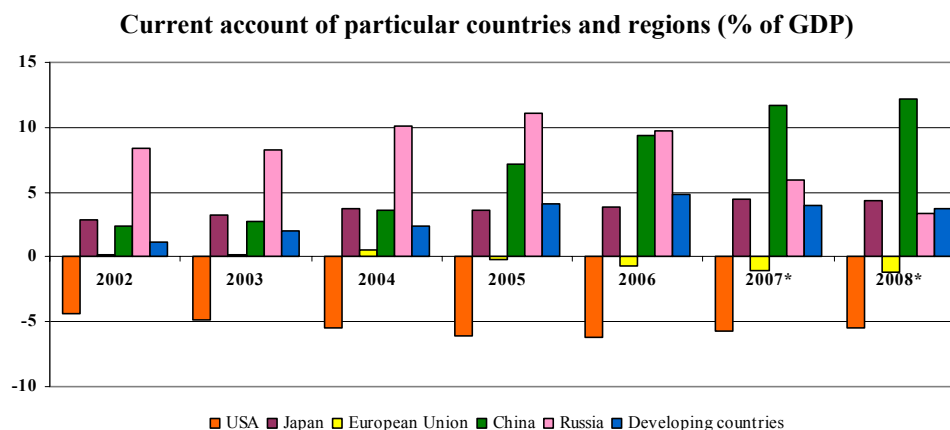
***In prospect, stable global current account imbalances persist in the world economy.***

According to IMF forecasts, as for results of 2007 some reduction of deficit of current accounts of the USA up to level of 5.7% of GDP owing to insignificant growth of competitiveness due to weakness of US dollar exchange rate is expected (Figure 1.1.3). In turn, net surplus of the Chinese current account is growing steadily and in 2007, according to IMF, will come to 11.7% of GDP. Although low domestic demand forecasts for the USA, high level of Japanese export contributes further expansion of current balance to 4.5% of GDP in 2007 as against 3.9% in 2006.

Generally, significant deficit of the US current account and net surplus of the current account in countries - trading partners of the USA, in particular China, imply for world economy a risk of disordered adjustment with greater expenses as well as an intensification of a protectionism policy.

Restoration of balance would be contributed by economic policy of the countries with positive balance of the current account, in particular China, on increase of domestic consumer demand for decrease the dependence of economy from export, achievement of exchange rates flexibility and expansion of sources of demand, and also stimulation of private savings in economy of the USA.

Figure 1.1.3



***The prices for oil and metals in 2007 remain at enough high level and at the same time jump in prices for agricultural goods is observed. The tendency of further rise of prices is expected to persist in 2008.***

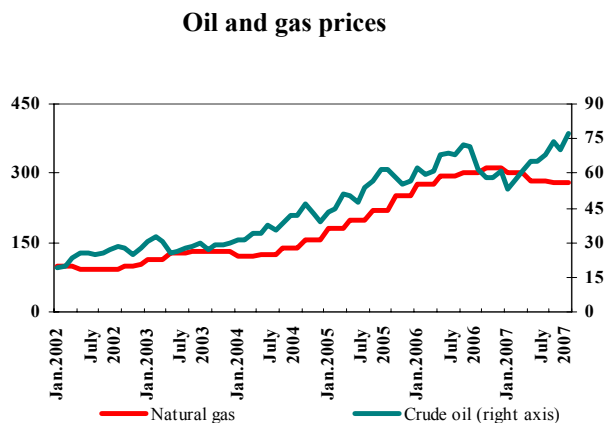
Constant imbalance of demand and supply at the oil market from the countries of oil consumers and exporters and unstable geopolitical situation in the world, particularly in the Middle East, are the major factors determining dynamics of oil price development. Under circumstances of limited reserve capacities for oil production and increased demand, mainly, by dynamically developing countries, stable oil price increase tendency has been observed from the beginning of 2007. Thus, in September of the current year as against the beginning of the year, the average spot price for oil<sup>3</sup> increased by 44% (Figure 1.1.4). According to IMF forecast for 2007, the average spot price for oil shall amount to 68.5 US dollars per barrel, and in 2008 75 US dollar/barrel. However, in September the spot price for oil has already come to 76.9 US dollars per barrel. In conditions of dollar devaluation the oil market is attracting speculative capital increasingly, thus contributing to the fundamental factors of oil price growth.

In 2007 the prices for the basic metals and food products also have continued the growth. Thus, according to IMF, price index for non-fuel commodities including foods products and industrial inputs increased by 6.1% during 9 months of the current year. At the same time price index for metals increased by 1.5% and price index for food products by 18.2%. Wheat price increased by 67% during 9 months of 2007 and came to 327 US dollars per tonne in September as compared with 197 US dollars per tonne in January 2007 (Figure 1.1.5).

As for forecast of dynamics of the prices of food products in 2008 it is possible to note, that further dynamics of the prices up to the end is not certain yet. For example, according to the price index for food commodities as calculated by IMF, price stabilization is expected. At the same time, the UN Food and Agricultural Organizations forecast that in 2008 prices for essential food products may increase, at least, by 80%. Main factors of rise in prices will be rapid growth of demand on food products and oil price increase. Furthermore, in conditions of high oil prices cereal crops will be used more often in biofuel production.

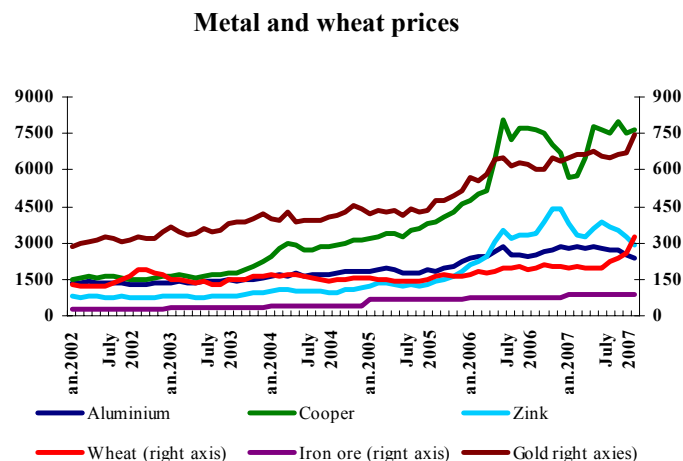
<sup>3</sup> Average of three spot prices (Dated Brent, West Texas Intermediate, Dubai Fateh)

Figure 1.1.4



Source: IMF

Figure 1.1.5



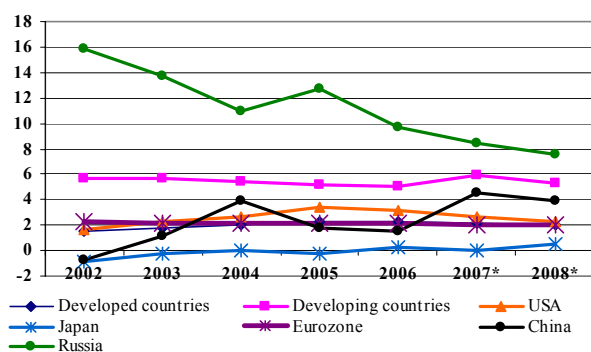
Source: IMF

***In 2007 countries with emerging markets and developing countries experience growing inflation pressure as a result of increase of prices for energy carrier and food products.***

On the whole, inflation remains at rather stable level, especially in the countries with the developed economy. In the USA inflation is decreasing gradually and, according to IMF, it shall come to 2.7% as of the end of 2007. In Eurozone inflation is stable at the level of 2%, except for some European countries. In Japan the price level has not undergone any changes (Figure 1.1.6). At the same time, in some developing countries inflation growth acceleration was observed in the second half of this year due to increase of domestic demand, steady rise in oil prices and rapid food products price increase (Figure 1.1.7). Increase in food products prices, in the first place, was provoked with increase of world prices for corn, wheat and some other crops as a result of increased demand for production of ethanol and, in prospect, biofuel in the USA and European Union, decrease in supply of wheat due to adverse weather conditions which resulted in crop failure in some producing countries.

Figure 1.1.6

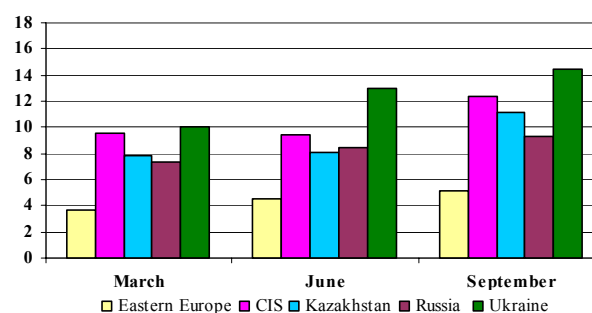
**Inflation in particular countries and regions  
(annual percentage change)<sup>4</sup>**



\*.forecast  
Source: IMF

Figure 1.1.7

**Inflation in CIS and Eastern Europe in 2007  
(to the relevant month of the previous year, %)<sup>5</sup>**



Source: national statistic agencies and central banks

<sup>4</sup> Forecast data for Russia were provided on a basis of consensus-projections materials of the Center of Development. The date of the forecast preparation is 23.07.-02.08.2007.

<sup>5</sup> Groups of countries are formed in accordance with the following selection: CIS- Russia, Ukraine, Tajikistan, Georgia, Moldova, Kazakhstan; Eastern Europe – Slovenia, Hungary, Poland, Czech Republic and Latvia.

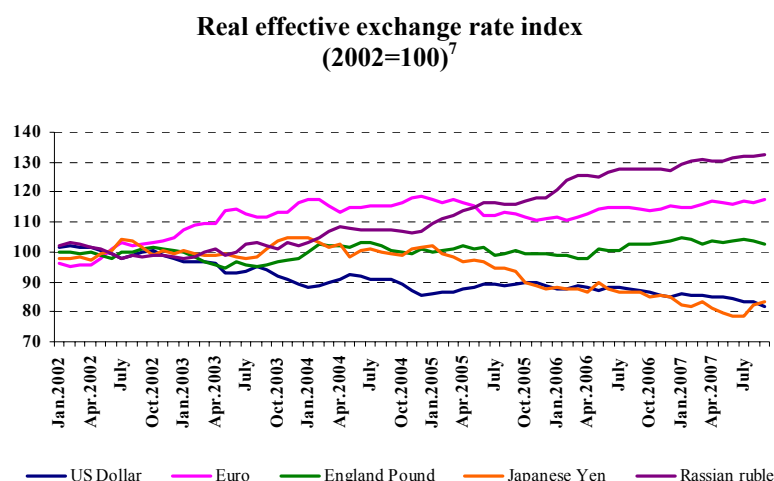
## 1.2. World Money, Foreign Exchange and Capital Markets Tendencies

*The stable tendency of US dollar weakness in relation to other currencies of the world is persisting.*

In 2007 US dollar exchange rate has continued to fall as compared with the key world currencies under strong pressure by some factors, such as high oil and gold prices, volatility at the world stock market, decrease of a FRS target interest rate and problems at the subprime mortgage lending market causing fears for business activity decline in the country. In turn, further tendency for strengthening of the European currencies, such as euro and pound sterling, in real terms is observed. In the first half of 2007 value of Japanese yen decreased in spite of increasing net surplus of the current account of Japan (Figure 1.2.1). However, in July yen became stronger due to decrease of carry trade transactions as a result of concern regarding potential impact of problems at the credit markets on decrease of corporation profits.

According to forecasts made by market participants, the tendency of US dollar weakening as against key exchange rates will continue in future. Thus, according to forecasts from the largest world banks<sup>6</sup>, expected ranges of nominal exchange rates during next year are as follows (Table 1.2.1):

Figure 1.2.1



Source: National central banks

Table 1.2.1

Exchange rates forecasted by leading world banks

Exchange rates	Minimal rate	Maximal rate	Average value	Mode <sup>8</sup>
Euro/US dollar	1,260	1,500	1,369	1,400
Pound sterling/US dollar	1,80	2,10	1,95	1,93
US dollar/Japanese yen	103	130	113,35	112

*Escalation of the problem of liquidity shortage in the world financial system as a result of spreading of crisis at the mortgage lending market of the USA is caused by uncertainty in distribution of risks in the financial system and decrease in confidence of the market participants to their counterpartners that led to increase of funding cost at the interbank markets, toughening of credit conditions and active participation by central banks to support liquidity.*

<sup>6</sup> Source: According to the materials of the website [www.forexpf.ru](http://www.forexpf.ru). The number of banks submitted the forecast is 31. The forecast preparation date is 21.09.2007.

<sup>7</sup> Nominal effective exchange rate is used to England pound sterling.

<sup>8</sup> Mode means the most frequent value.

From the beginning 2007 the tendency of increase in the world interest rates had prevailed, that was caused by continuous inflation pressure that consequently required toughening of the monetary policy by central banks. The European Central Bank (hereinafter referred to as “ECB”) twice increased its target interest rate this year: to 3.75% in March and 4% in June. The Bank of England increased its interest rate thrice during 2007 (by 0.25% to 5.75% in July). The Bank of Japan increased its rate to 0.5% in February 2007. The FRS target interest rate was 5.25% till September, 2007. However, due to pressure of the crisis situation at the mortgage lending market, the FRS target interest rate decreased twice to 4.5% and, consequently, financial institutes could take borrowings at a lower rate as a result of rapid squeeze of market liquidity (Figure 1.2.2). Actions taken to overcome the liquidity crisis were not limited only by regulation of interest rates (Box 1).

Dynamics of the interbank market mirrored a movement dynamics of target interest rates and changes of spread as a result of the mortgage crisis. From the beginning of 2006 to the middle of 2007 stable growth of LIBOR and EURIBOR rates as a result of increase of the FRS and ECB interest rates is observed.

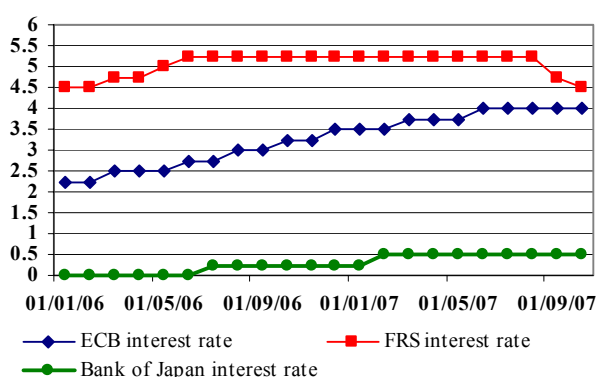
In August and early September 2007 the interbank rates increased rapidly. Difference between LIBOR index and FRS target interest rate came to about 50 basis points (hereinafter referred to as “b.p”), difference between EURIBOR index and ECB interest rate was almost 80 b.p. After the FRS target interest rate had decreased in September and October 2007, interest rates at the interbank market decreased that resulted in decrease of spread between LIBOR index and FRS interest rate to 40 b.p, and 60 b.p. of difference between EURIBOR index and ECB interest rate.

The problems at the “subprime” mortgage lending market had adverse impact on financial markets of developing countries. Following to instability at the world financial market, it became more difficult to attract resources not only at the foreign market, but at the domestic market as well. For example, during the second quarter of this year 3-month MIBOR index of the Moscow interbank market increased from 4.8% to 7.7% (Figure 1.2.3). As a result, interest rate growth has led to increase of loan service expenses in countries depending heavily on foreign capital markets, and liquidity squeeze at the domestic money markets.

In addition, toughening of credit conditions resulted in decrease of acquisition and merger activities as a number of transactions with borrowed funds including direct investment funds, decreased rapidly.

Figure 1.2.2

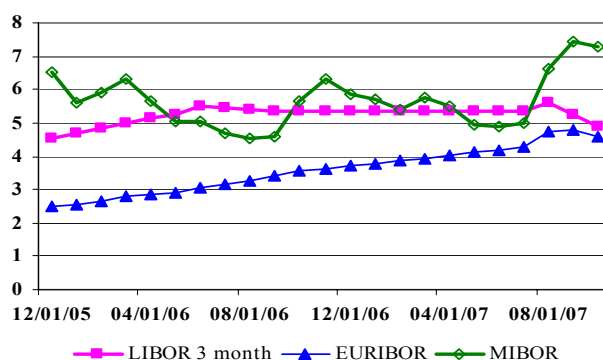
Target interest rates of leading countries



Source: Bloomberg

Figure 1.2.3

Interbank interest rates



Source: Bloomberg

### International liquidity crisis and the role of central banks

Preconditions of the mortgage lending crisis in the USA originate from a period of low interest rates when financial institutes softened their criteria of granting of credits and offered various mortgage programs to compensate decrease of rates at the market and increase their profitability. As a result, borrowers who had not fit crediting standard conditions were able to obtain credits. Mortgage credits with floating interest rates attached to the FRS rate spread widely. Gradual increase of the interest rate caused increase in cost of loan servicing and, as a result, borrowers showed a failure in servicing of their mortgages. On the other hand, the US mortgage crisis covered the international financial market since different schemes of financing with synthetic securitization instruments were used. Thus, attracting resources at the international capital market, financial institutes used them for a purpose of mortgage credits and securitized debts as CDO mortgage bonds. Funds acquired from sale of the mortgage bonds were also used for mortgage crediting. Moreover international rating agencies awarded investment grade to many issues of bonds partially secured with high-risk mortgage credits. Inadequate risk assessment for these instruments by both the rating agencies and bond purchasers, and complexity to determine cost of financial derivatives including different real estate loan portfolios resulted in bankruptcy of hedge funds and considerable losses of financial institutes.

These factors, together with concerns for spread of mortgage sector problems to other sectors of the financial market, led to increase of liquidity demand and decrease of mutual crediting, and that entailed considerable increase of rates at the interbank markets.

Active actions taken by central banks to ensure domestic liquidity had a great importance in stabilization of the crisis situation caused by decrease of liquidity at the international financial market. Analysis of dynamic contribution by FRS to ensure liquidity demonstrates that volume of standard daily REPO operations increased much from July 2007. Average volume of such operations starting from early 2006 to July 2007 amounted from 5 to 15 billion US dollars. Such operations were secured with government securities and public agency securities. However, in the light of the crisis situation at the mortgage market, volume of liquidity provided increased considerably. Thus, in August 2007 the maximum volume of daily REPO operations amounted to 37 billion US dollars, in October 41 billion US dollars. At that, mortgage securities were included in a list of instruments accepted as security.

ECB standard practice of liquidity provision is weekly auctions (liquidity is provided for a period of 7 days) and monthly auctions (for 3 months). Starting from 2006, normal weekly liquidity provision was about 300 billion euro and monthly liquidity provision, to 50 billion euro. From August 2007, additional operations to provide daily liquidity were performed: the most considerable amounts were processed in early August: 94.8 billion euro at 4% interest rate on August 9, 61 billion euro at 4,05% interest rate on August 10, 47.7 billion euro at 4,06% interest rate on August 13, 2007.

It is difficulty enough to define the duration of the crisis process period as risks are distributed irregularly in the financial system that makes them difficult to predict. Overall losses caused by mortgage crisis consequences can be determined under results of the first quarter 2008 when the financial institutes will publish their complete financial reports for this year. At the same time large financial institutes continue to form reserves for covering potential losses that assume lingering character of developed problems at the global financial markets.

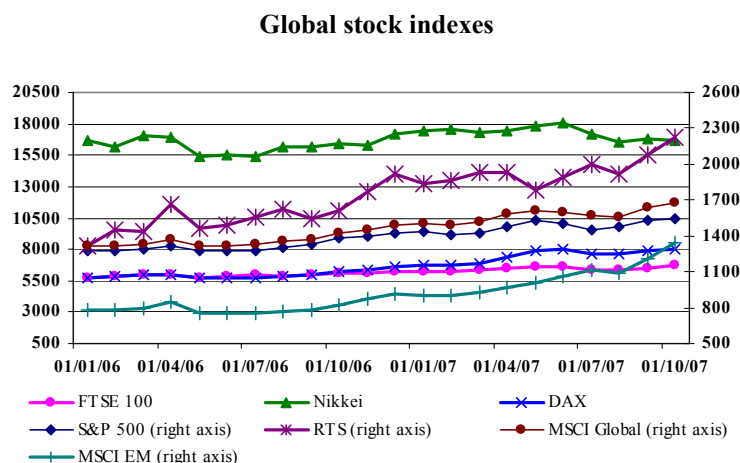
### ***Concern of market participants in case of further development of the situation at the credit market and world economy on the whole contributed to high volatility of stock markets.***

In 2006-2007 the world stock market is characterized by high enough volatility with general ascending trend. 2006 was a positive year for stocks that, mainly, arose from positive forecasts for corporate incomes notwithstanding a policy of interest rate increase by central banks. On the whole, in 2006 yield of MSCI World global stock index came to about 18%.

In 2007, after the stable growth at the beginning of the year, stock indices, Asian indices in particular, came down as a result of considerable quotation fall at Chinese stock exchanges in late February. Consequences of the problems at “subprime” mortgage market have led to substantial losses by majority of banks, tendency for market participants to invest in the least risky assets and as consequence, to falling of stock prices. Thus, in the third quarter this year a negative yield for major stock indexes, such as FTSE100, DAX, Nikkei225 and RTS, is observed (Figure 1.2.4).



Figure 1.2.4

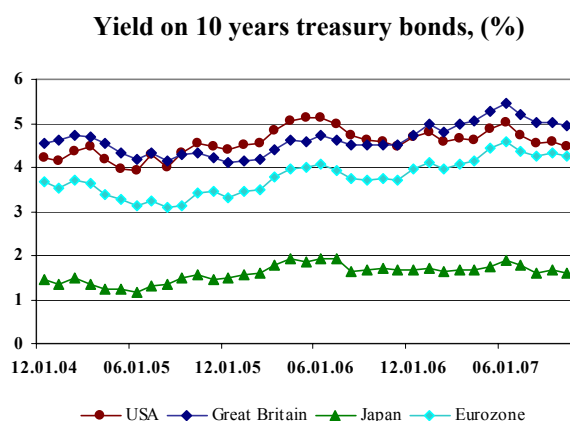


Source: Bloomberg

***Reduction of investors' positions in the risky instruments in the current year was caused by negative consequences of the crisis situation at the American mortgage market.***

Unlike the previous periods when the reduction of investors' positions in risky instruments has been caused mainly by increase of interest rates because of strengthening of inflation pressure in developing countries, in 2007 the crisis situation has caused keen demand on non-risky assets, such as the government securities of developed countries. Thus, increased demand for US treasury bonds has led to increase of their prices and, consequently, reduction of yield in the second half of this year (Figure 1.2.5). Minimum values of 10-year treasury bonds yield of the USA and Japan have been fixed in October 2007 having come to 4.5% and 1.6% respectively.

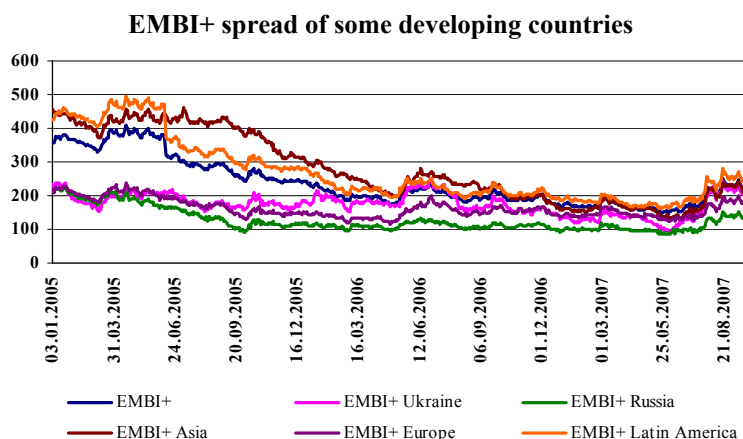
Figure 1.2.5



Source: Bloomberg

Large capital outflow from risky assets has led to expansion of spreads between yield of securities of developed and developing countries. Thus, maximum value of EMBI+ spread index in 251 b.p., has been fixed in the middle of August 2007, that on 102 b.p. higher as compared with minimum value in June (Figure 1.2.6). As of the end of September 2007, EMBI+ spread index amounted to 202 b.p. At that, fluctuation of EMBI+ Russia spread index is the least evident, that demonstrates moderate assessment sovereign risks from investors in relation to financial instruments of this country.

Figure 1.2.6

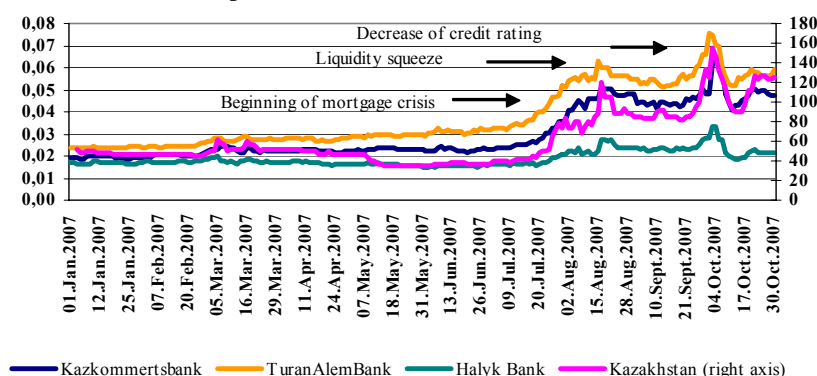


Source: data of information agency [www.cbonds.ru](http://www.cbonds.ru)

In turn, as a result of increased risks at the international financial market, Kazakh banks have appeared to be the most sensitive to the increase of international interest rates, that caused increase the risks of refinancing of external liabilities and, consequently, risks of creditworthiness decrease, as a whole. Risk reassessment, funding difficulties in the financial system of Kazakhstan led to decrease of sovereign credit rating of Kazakhstan by Standard & Poor's international rating agency from BBB to BBB-, and Fitch agency from positive credit rating forecast to stable one, and spread expansion of credit default swap contracts (CDS) for banking issuers and in Kazakhstan as an issuer of sovereign debt in the second half of 2007 (Figure 1.2.7).

Figure 1.2.7

Spreads of credit default swap contracts of Kazakhstan and Kazakh banks in 2007



Source: Bloomberg

### 1.3. World Capital Flows Tendencies

*Despite substantial growth of capital inflow to developing countries in 2006-2007, some decrease in prospect is predicted.*

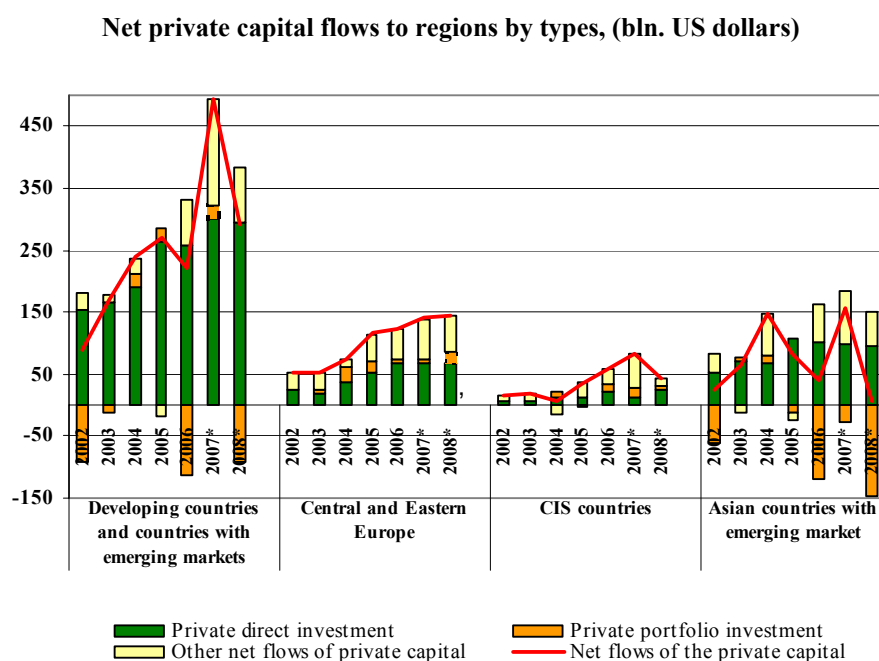
After decrease in 2001-2002 private capital flows recovered, having reached a relatively high level by 2006. Moreover, most of capital flows went to Asian and European countries with emerging markets. Thus, according to the data of IMF, in 2006 as against 2005 private capital inflow to developing countries increased by 37.6% and constituted 993.2 billion US dollars. At the same time, net capital flow made up 730.6 billion US dollars due to intense capital outflow from developing countries (increase by 43.9% in 2006).

Current threats of the world economy slowdown and toughened financing conditions for developing countries can lead to adjustment of capital inflow to developing countries. Thus, according to IMF, 2007 will finish the high values of volumes of inflow of the private capital in developing countries and countries with emerging markets and by 2008 significant decrease as a whole on developing countries is predicted (Figure 1.3.1). Thus, it's expected that decrease of net private capital inflow will come to 41.2% and constituted 291.3 billion US dollars as against 495.4



billion US dollars in 2007. Forecast of flows decrease was developed for CIS and Asian countries with emerging markets only.

Figure 1.3.1



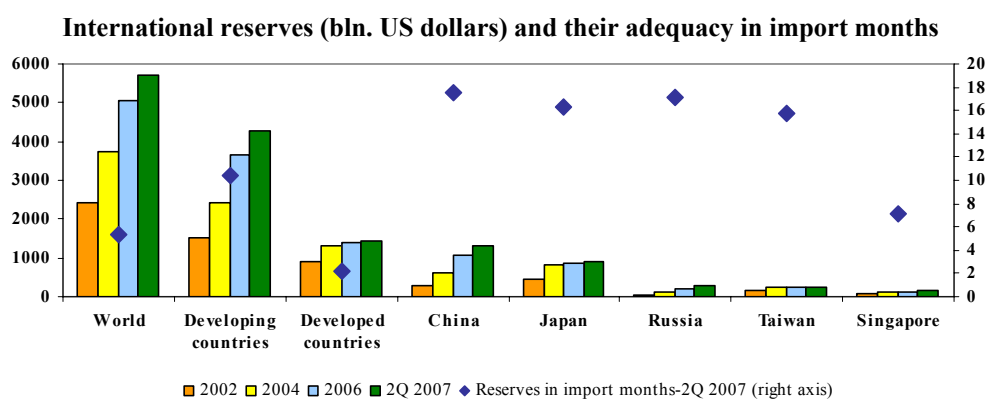
\*-forecast

Source: IMF

***Among leading developing countries rapid growth of international reserves as a result of favorable trade conditions, over income from high oil prices and high capital flows is observed that essentially increase their readiness to resist moderate shock occurrences.***

In 2006 a growth rate of international reserves in the world was 20.7%. Thus, contributions of developed countries and developing countries came to 2.4% and 18.2% respectively (Figure 1.3.2). During the first half year of 2007 the world international reserves increased by 13%. China and Russia are the countries with the rapid growth rate of reserves which share in the total world volume came to 29% as of the end of the 2nd quarter 2007. On the whole, average reserves adequacy in import months in the world is 5 months.

Figure 1.3.2



Source: IMF, central banks

Common sterilization effect of capital inflow to developing countries due to increase of total gold and foreign exchange reserves can be estimated at the level of 11% on average in 2002-2007. Moreover, this value has been gradually increasing: in 2005 it was 8% and in 2007 the sterilization effect came to 13% according to evaluation data. Furthermore, having increased adequate reserves, many developing countries create special foreign exchange reserves funds for future generations to sterilize excess domestic liquidity that causes potential risks of economy overheating

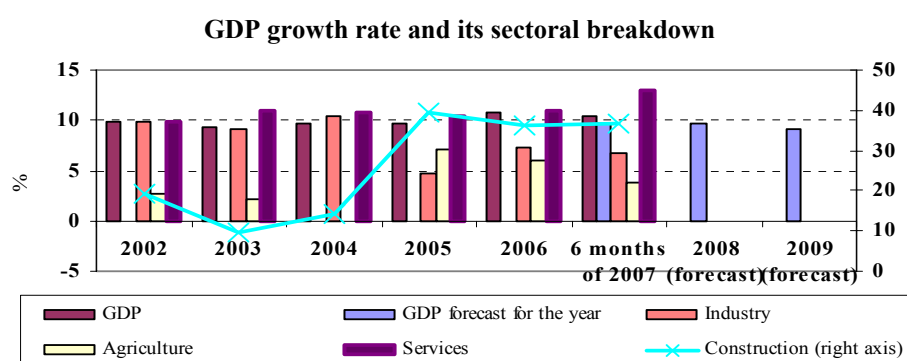
## 2. Macroeconomic Environment and Economic Conditions in Kazakhstan

### 2.1. Factors of Economic Growth

*Recently economic growth in Kazakhstan is promoted, to a greater extent, with development of sectors stimulated by aggregate domestic demand, and it preserves commodity orientation of the economy, that brings risks of volatile development subject to world prices for energy resources and other raw goods.*

According to results of the first half of 2007 further GDP growth is observed in economy of Kazakhstan. The GDP growth is 10.4% compared to the corresponding period of previous year (9.3% in the 1<sup>st</sup> half-year of 2006). The growth was caused, first of all, by dynamic development of the construction sector (36.8%) and services (12.9%), their aggregate share in GDP has increased by 64,8% in the 1<sup>st</sup> half-year of 2007 (Figure 2.1.1). Thus, it can be expected that in 2007 contribution of the above sectors to real GDP growth will increase even more (for comparison in 2006 GDP growth by nearly 70% was caused by real growth of the above economic sectors). According to the Government, in 2007 real GDP growth will come to 9.7% with a slight slowdown to 9,6% in 2008<sup>9</sup>.

Figure 2.1.1

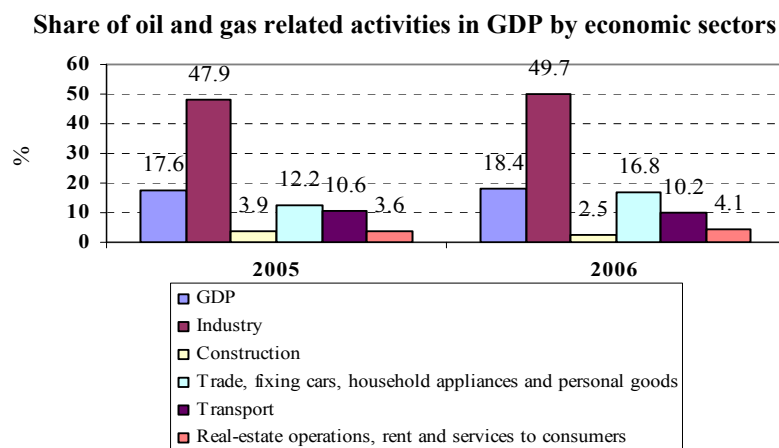


Source: SARK, MEBP

Among factors contributing to real economic growth both a role of oil-gas activities and more dependence on domestic demand can be distinguished. In particular, importance of oil-gas sector in GDP of the Republic and in its particular sectors is increasing evidencing adjacent development and stable dependence on the tendency of the main sector. At the same time, its contribution to industry, trade and real estate transactions increases while influence on construction and transport decreases (Figure 2.1.2). High dynamics of the construction sector is stimulated by domestic demand growth.

<sup>9</sup> IMF is more conservative to assessment of GDP growth in Kazakhstan for 2008: slowdown of nearly 1% relatively to 2007.

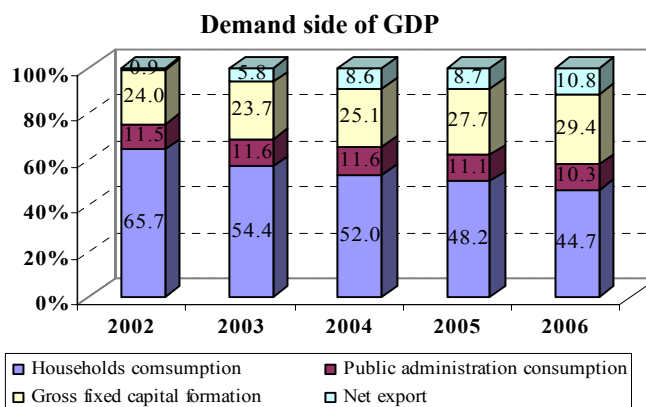
Figure 2.1.2



Source: SARK

Domestic demand growth is demonstrated through a high share of consumer expenditures in private and public sectors compared to the gross fixed capital formation (Figure 2.1.3). In particular, marginal propensity to consume<sup>10</sup> on average during 5 preceding years came to 0.88 compared to marginal propensity to save<sup>11</sup> which was equal to 0.12. In turn, growth of the income has an effect on increase of consumer goods imports in 2007 given the constant investment goods imports which puts pressure on net export balance.

Figure 2.1.3



Source: SARK

***Expansionary fiscal policy due to the high current expenditures financed mostly by oil revenues stimulates an increase of domestic consumer demand.***

Fiscal revenues and expenditures as well as assets of the National Fund increase along with the rise of world oil prices (Figure 2.1.4). At the same time, fiscal expenditures which increased by 26.4% over 9 months of 2007 compared to corresponding period of the previous year outpace the growth of fiscal revenues which constituted 18%.

Moreover, share of current expenditures in total expenditures is 65%. Social security and education take first place in the current expenditures while capital expenditures, for their most part, have been directed to transport, communications, housing and utilities (Figure 2.1.5).

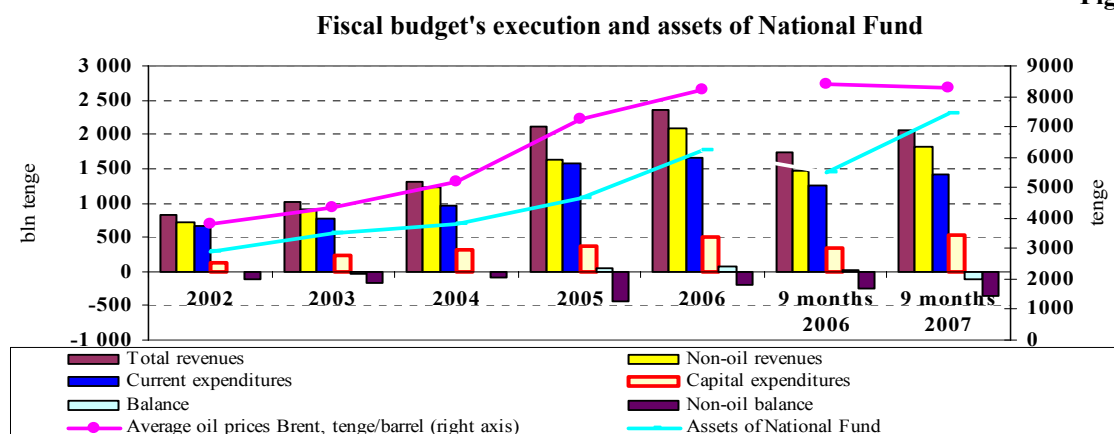
After a period of budget surplus in 2005-2006 outpacing growth of expenditures over 9 months of 2007 contributed to budget deficit of 1.3% of GDP, while during same period of the previous year budget surplus constituted 0.3% of GDP. Negative balance of budget was caused by the expansion of non-oil deficit which increased by 35.9% over 9 months of 2007 compared to the same period of previous year. In future the Government expects decrease in non-oil budget revenues from 20.4% to 19% of GDP in 2007 and to 18.9% in 2008 that can further worsen the

<sup>10</sup> Assessment is based on a ratio of aggregate consumption changes to GDP changes for a period of 2002-2006

<sup>11</sup> Assessment is made as one minus marginal propensity to consume

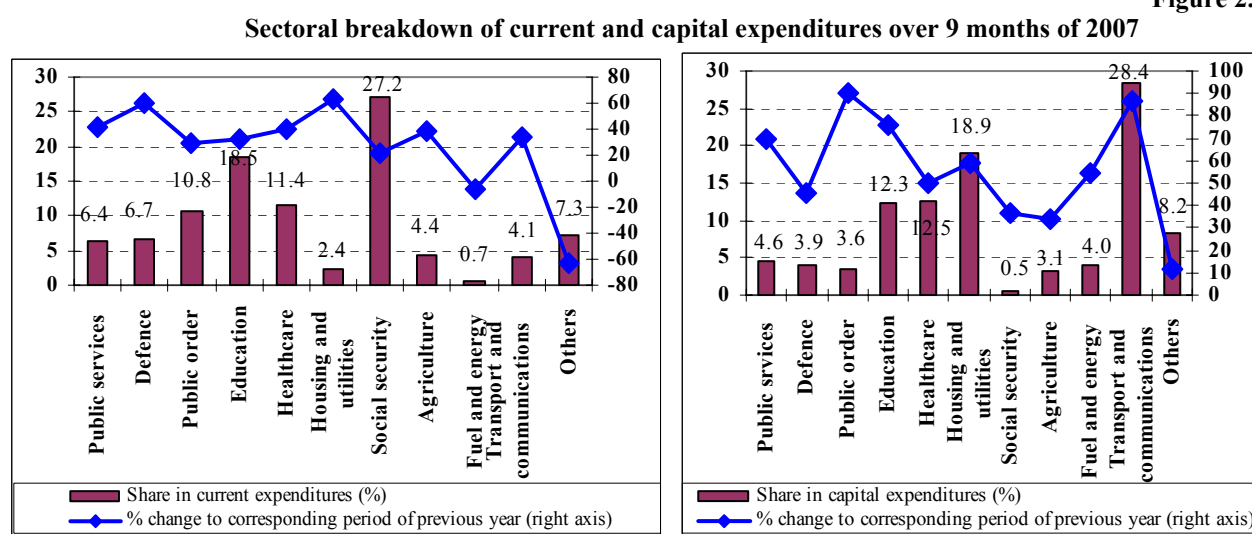
fiscal budget balance, if consumption of public administration will not decrease given the weak efficiency of tax administration.

Figure 2.1.4



Source: MF, NBRK

Figure 2.1.5



Source: MF

**Export orientation of commodity sectors leads to the appreciation of national currency and to the costs growth that may harm competitiveness of the country which indicators are worsening.**

While decreasing gradually, export goods concentration keeps at a rather high level (71,5%) given an increase of oil and gas condensate output. According to the Government, oil and gas condensate output will increase from 65 million tones to 78 million tones in 2009. As a result of that growth and high world prices, exchange rate appreciates gradually and leads to increase of domestic prices in economy through wage-push, undermining competitiveness of the economy.

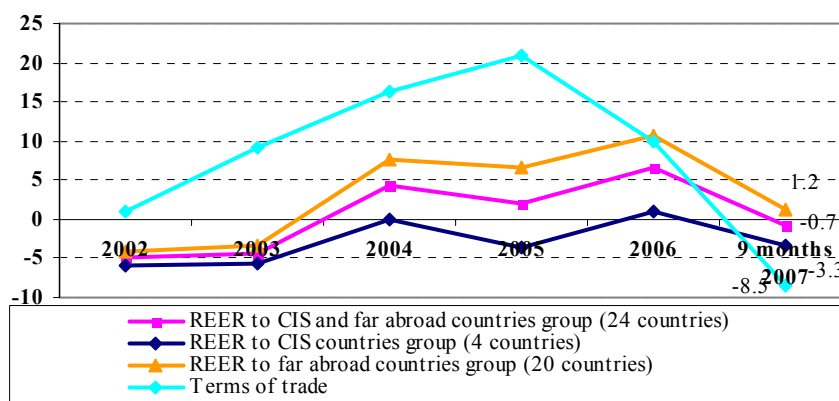
In general, over 9 months of 2007 real value of tenge did not change much with respect to currencies of countries-main trade partners compared to 9 months of 2006. Real effective exchange rate tenge<sup>12</sup> depreciation by 1.2% with respect to currencies of far abroad countries-main trade partners was compensated more than enough by 3.3% appreciation of tenge against currencies of CIS countries (Figure 2.1.6).

Among factors defining the changes in real value of national currency in 2007 terms of trade have worsened by 8.5% due to the significant increase of import prices.

<sup>12</sup> Index is calculated using trade shares with countries-main partners, excluding volume of oil trade

Figure 2.1.6

Terms of trade and real effective exchange rate excluding oil (% change to relevant period of previous year)

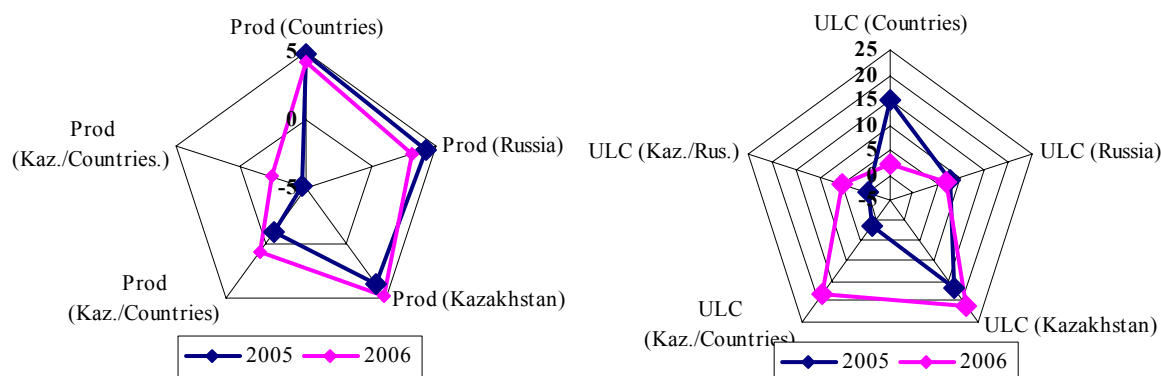


Source: NRBK

A factor influencing on competitiveness improvement before was a higher rate of increase in industrial productivity relative to the main trade partners and Russia. However, with the slowdown of productivity growth in industry and rise of the wages outpacing productivity growth, relative unit labor costs as another measure of competitiveness have worsened on average 9,8% in 2005-2006, with regard to Russia 2.4% (Figure 2.1.7).

Figure 2.1.7

Other indicators of competitiveness (% change over period)



Source: NBRK, SARK, Central banks and statistic agencies of other countries

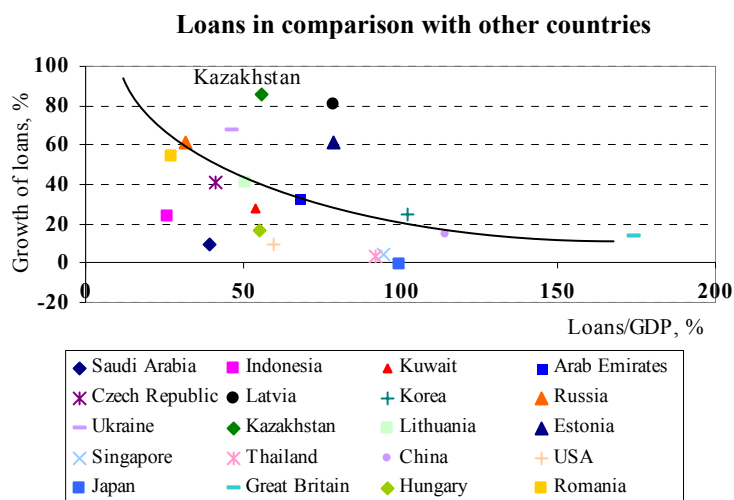
**Domestic loans expansion sourced by foreign loans of financial organizations finances current needs of enterprises which results in disproportion of loans allocation to economic sectors. Meanwhile, monetary policy may not be as efficient as fiscal policy to restrain a credit boom.**

In 2002-2006 average growth of bank loans was 58% and it is growing over time having reached 86.1% from September 2006 to September 2007. High growth rate may be induced by low loans to GDP ratio and it is acceptable for the optimal financial deepening in the economy.

Moreover, countries analysis for loans growth and its ratio to GDP<sup>13</sup> demonstrates that Kazakhstan is located well higher than the trend which may signify credit boom in the Republic.

<sup>13</sup> Analysis was made on data of 20 countries for 2006, Kazakhstan – data at the end of September 2007, change in annual terms

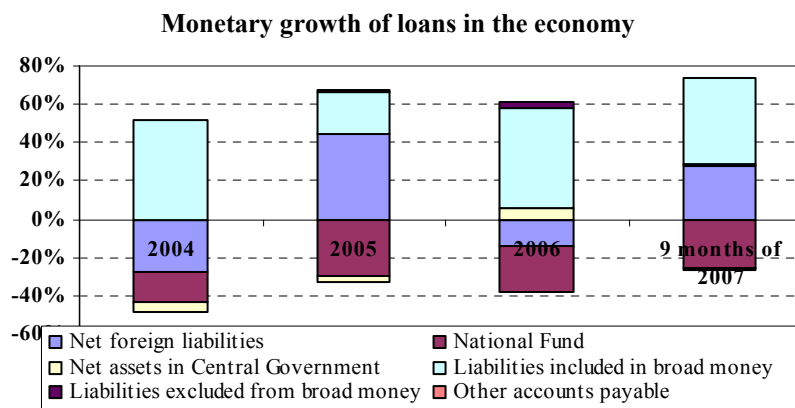
Figure 2.1.8



Source: NBRK, IMF

A monetary source of the credit boom together with broad money growth is an increase of net foreign liabilities of financial organizations from September 2006 to September 2007 and its contribution to the lending rate is 69.4%. Moreover, in 2006 compared to 2005 and 2007 the effect of high borrowings of financial organizations was compensated by considerable growth of bank foreign assets and international reserves of the National Bank (Figure 2.1.9). Increase of the National Fund assets provides insufficient sterilization effect on lending growth in the Republic.

Figure 2.1.9

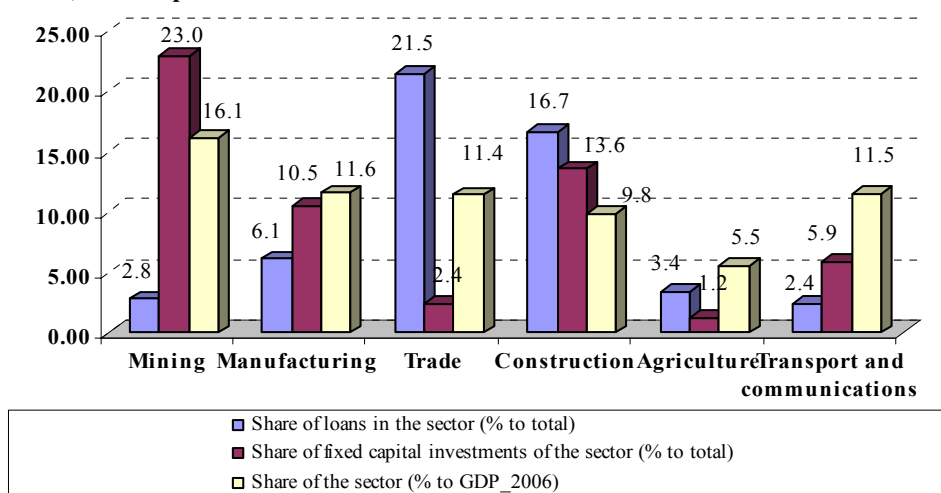


Source: NBRK

As for sectors where loans are directed to, no considerable structural changes occurred. As before, trade and construction are being credited and share of loans to construction has been increased from 13.5% to 16.7% compared to 9 months of the previous year. Meanwhile, loans to industry and agriculture decreased in total from 17.2% to 12.7% (Figure 2.1.10). There is a persistent prevalence to use bank finances for the purchase of inventories rather than for the fixed capital by enterprises.

Figure 2.1.10

Loans, fixed capital investments and structure of GDP over 9 months of 2007



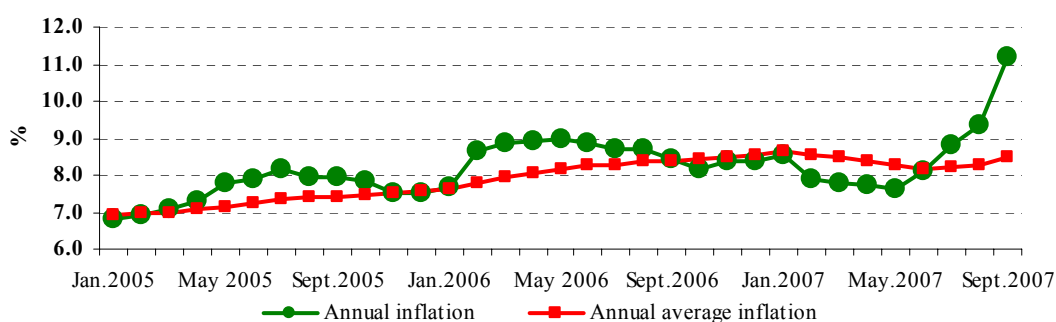
Source: NBRK, SARK

*Inflation processes are intensifying under the lending growth to the sectors creating low added value, under the increase of unit labor costs, under the low productivity of industries and expansionary fiscal policy. It's difficult to ensure a stable price level because monetary policy in conditions of fiscal expenditures growth, significant capital inflows and money supply has to solve the tasks of adequate foreign exchange reserves, inflow sterilization and curbing inflation simultaneously.*

Annual inflation in December 2006 reached 8.4%, in September 2007 11.2% (Figure 2.1.11). One of the reasons for the latter was rise in prices for some types of food products. In general, prices for such food products as bread, flour and sunflower oil increased. Unstable situation in the world grain and sunflower oil markets affected the domestic market of Kazakhstan. In addition, considerable increase in income contributes to growth of consumer demand. Moreover, the aggregate demand growth rate outpaces the supply of goods and services in recent years, causing market imbalance.

Figure 2.1.11

Inflation in 2005-2007



Source: SARK

## 2.2. Vulnerability of Foreign Sector of Economy

*High domestic consumer demand resulting from expansionary fiscal policy, considerable capital inflow, mainly, bank loans and worsening of competitiveness indicators in industries have led to the further extension of current account balance.*

While deficit increases, cover of the current account by foreign direct investments inflow decreases and short-term capital outflow rises. That has an adverse impact on sustainability of current account deficit financing in future (Table 2.2.1).



Table 2.2.1

## Indicators of sustainable balance of payments

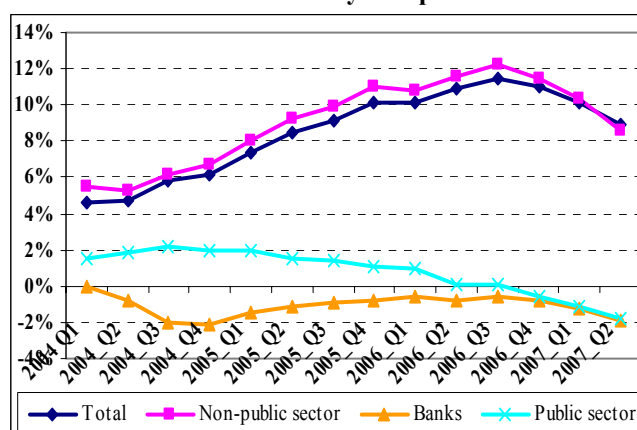
	2004	2005	2006	1 half of 2007
Current account, % to GDP	0.8%	-1.9%	-2.2%	-4.6%
Trade balance, % to GDP	15.4%	18.1%	18.3%	15.6%
Cover of current account with FDI, % to GDP	13.1%	1.9%	6.0%	1.2%
Short-term capital, % to GDP	-7.4%	-2.0%	-3.9%	-8.8%
Change in terms of trade, % year-to-year	30%	17%	-3%	-9%

Source: NBRK

Together with contraction of trade balance, high yield of investments to the non-bank sector of Kazakhstan (Figure 2.2.1) and considerable growth of net foreign liabilities of the bank sector (Figure 2.2.2) did not compensate an increase in yield of overseas investments made by banks and public sector.

Figure 2.2.1

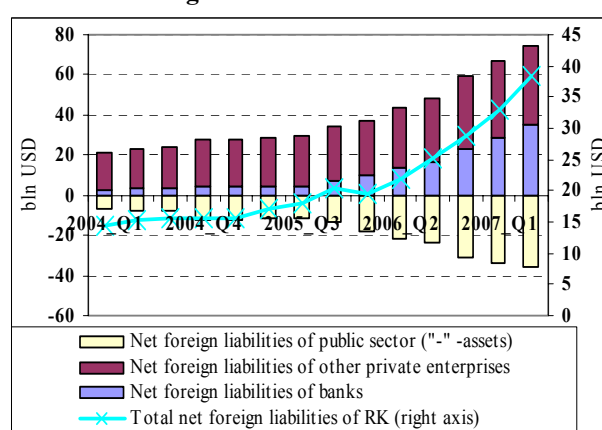
## Investments yield spread



Source: NBRK

Figure 2.2.2

## Foreign liabilities of Kazakhstan



Source: NBRK

Besides, according to results of the first half of 2007 significant increase in capital outflows for financial operations and decrease in capital inflows for current operations are observed. That impacted on growth of foreign exchange reserves of the National Bank (Table 2.2.2). In addition, during the 1<sup>st</sup> half of 2007 increase in financial operations outflows for banks compensated increase in inflows completely. In general, it should be noted that pressure on dynamics of capital flows becomes stronger not only for current operations, but for the financial account as well.

Table 2.2.2

Contribution of inflow components and outflow compensation<sup>14</sup>

	2003	2004	2005	2006	1 half of 2007 <sup>15</sup>
<b>Inflow</b>	<b>35%</b>	<b>56%</b>	<b>24%</b>	<b>75%</b>	<b>52%</b>
current operations	16%	29%	18%	22%	15%
financial account operations	18%	27%	6%	53%	36%
including banks	8%	7%	10%	28%	18%
<b>Outflow</b>	<b>29%</b>	<b>47%</b>	<b>38%</b>	<b>50%</b>	<b>57%</b>
current operations	11%	26%	22%	21%	20%
financial account operations	12%	20%	15%	25%	32%
including banks	2%	6%	9%	13%	18%
net errors and omissions	6%	0%	2%	3%	5%
<b>Reserve assets</b>	<b>5%</b>	<b>9%</b>	<b>-14%</b>	<b>24%</b>	<b>-8%</b>

<sup>14</sup> Inflows and outflows are calculated as the sum of all credit and debit records of the balance of payments respectively. Indicators in part of inflow show the contribution of each component to the total inflow of capital, in part of outflow show by how much the changes of component have compensated inflow dynamics. Increase of item "reserve assets" means the faster international reserves accumulation and vice versa. The sum of outflow and reserve assets gives general change of the inflow dynamics.

<sup>15</sup> Calculated regarding 1 half of 2006



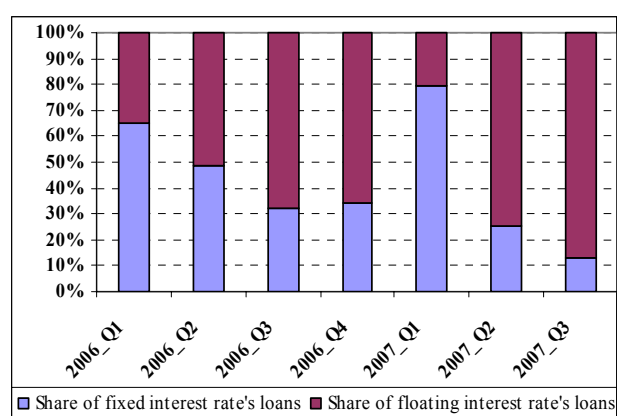
<i>Memorandum items:</i>					
Income paid to exports	14%	16%	22%	26%	30%
FDI inflow to import	36%	54%	30%	39%	36%
Change of reserve assets to inflow	5%	9%	-4%	12%	5%

Source: NBRK

The financial account puts its pressure due to active foreign operations by banks and increase of National Fund assets. As for current operations, significant factors are high world prices making tougher burden on export incomes paid-off, and growth of consumer demand (demand for imports due to foreign direct investment did not change much). Moreover, domestic demand sterilization in terms of savings in the National Fund is not sufficient and that results in stable demand for imports.

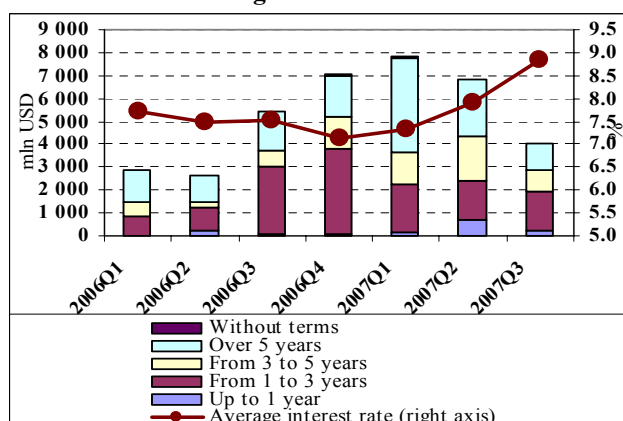
Taking into account the fact that 50% of capital inflows for the financial account in 2006 – 2007 was provided by banks, their foreign loans terms are of great importance to assess debt burden for the balance of payments. With regard to foreign liabilities formation by banks<sup>16</sup> in 2007, risk factors are an increase in share of loans with floating rate (Figure 2.2.3) and increase of the loans average interest rate (Figure 2.2.4). Considerable decrease in foreign loans in the 3<sup>rd</sup> and 4<sup>th</sup> quarters this year will create the additional burden on banks and balance of payments till end of 2007.

**Figure 2.2.3**  
Interest rate breakdown of foreign loans



Source: NBRK

**Figure 2.2.4**  
Terms of foreign loans and interest rate



Source: NBRK

<sup>16</sup> According to data of borrowings contract registration.

## 2.3. Main Vulnerability Factors for Debt Burden and Reserves Adequacy

*Foreign debt burden is distributed among economic sectors irregularly having concentrated in the private sector. Alongside with that, total bank foreign debt is rather large and bears certain risks of inadequate domestic resources of banks and reserves of the National Bank in case of imbalance between demand and supply of foreign exchange not compensated with adequate measures of the monetary and fiscal policies.*

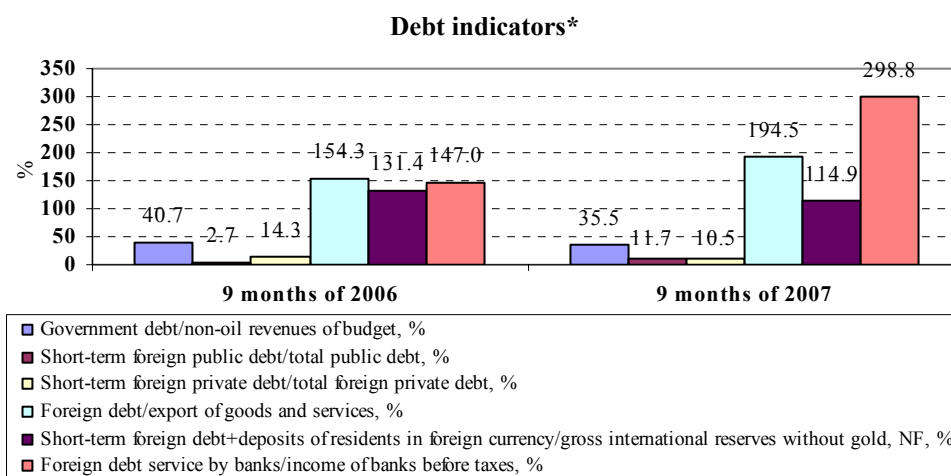
At the end of September 2007 compared with the same period of previous year, ratio of the government debt to non-oil budget revenues decreased from 40.7% to 35.5% due to increase of the budget revenues, while the debt increased by 9% (Figure 2.3.1).

In 2007 further worsening of foreign debt to goods and services exports ratio is observed. That demonstrates that requirements to sustainable export growth and foreign exchange inflows to the Republic became tougher. Such tendency is performed by private sector, including banks. Repayments and foreign debt service pressure on banks' incomes increased a lot over 9 months of 2007 and that makes solvency of the banking sector vulnerable to profitability.

In turn, there is a risk for gross international reserves adequacy<sup>17</sup>, if it would be necessary to compensate potential demand for foreign exchange which might be required to pay off short-term foreign liabilities by participants of foreign-economic activity, and by banks in the event of residents' foreign currency deposits outflows. While international reserves cover more than 4 months imports, they do not cover outstanding foreign debt repayments and its servicing<sup>18</sup>. According to this criteria (Gwidotti's rule), the relevant ratio after 9 months of 2007 did not change compared to the same period of last year and constituted 0.6, while a normal rate is 1.

Compared to the same period of last year, reserves to broad money ratio decreased from 51.3% to 46.1%. That is why reserves may not compensate the potential demand for foreign exchange in case of conversion of assets in national currency by agents of the financial market.

Figure 2.3.1



## 2.4. Financial Indicators of Corporate Sector

*As for the corporate sector, it should be noted that tendencies and dynamics of main financial indicators of 2006 persisted during the 1<sup>st</sup> half of 2007. The most negative tendencies are observed in the construction sector.*

Development tendency of corporate sector's financial indicators is one of the most important components of financial stability of the economy. Moreover, risks of the banking system depend on them as non-financial organizations are large debtors of banks.

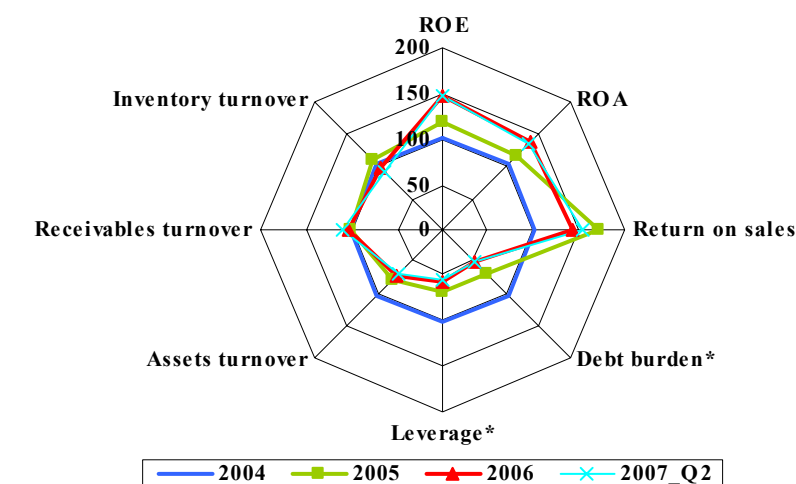
<sup>17</sup> Expressed excluding gold and assets of the National Fund

<sup>18</sup> Calculated as a sum of short-term foreign debt and long-term debt service on average over recent 2 years

In general, favorable domestic and foreign market pricing environment for the corporate sector determines high returns on equity (ROE) as 44.6% according to results of the 1<sup>st</sup> half of 2007, and assets (ROA) as 15.8% due to increase in return on sales (Figure 2.4.1).

Figure 2.4.1

Main financial indicators (corporate sector, 2004=100)<sup>19,20</sup>



\* Positive change means improvement of the value and vice versa  
Source: NBRK, SARK

Further increase in profitability of enterprises is restricted by low efficiency and that is reflected in the decline of assets and inventories turnovers.

High profitability indicators provide the corporate sector with sufficient working capital which is reflected in high self-finance level (use of capital for assets financing) and moderate debt burden (ratio of liabilities to capital is 1.8 in 2006-1<sup>st</sup> half of 2007).

Moreover, situation among sectors is not homogeneous. As regards any risks to financial stability, the most favorable situation is observed in mining and manufacturing industries and transport and communications sectors covering in total 45% of assets (Table 2.4.1). As to construction and trade sectors, a high level of indebtedness under conditions of active bank lending to the above sectors, decline of assets turnover and return on sales are observed. All that can result in further decrease of profitability. A sector that has improved profitability a lot due to the increase in return on sales is agriculture.

Table 2.4.1

ROA, ROE and their factors (by sectors, 2 quarter of 2007)

Sectors	ROE	ROA	Return on sales	Assets turnover	Capital multiplier	Assets share (2007 Q2)
Agriculture	5.38%	1.41%	2.68%	0.53	3.80	2%
Mining industry	77.15%	45.06%	55.61%	0.81	1.71	21%
Manufacturing industry	43.00%	21.72%	22.57%	0.96	1.98	13%

<sup>19</sup> Profitability indicators:

ROE – return on equity, is equal to the ratio of income before taxes to equity

ROA – return on assets, is equal to the ratio of income before taxes to average assets

Return on sales – is the ratio of income before taxes to income from sales of final goods

Debt burden indicators:

Debt burden – is the ratio of liabilities to assets, or the share of borrowings in sources of assets financing

Leverage – is the ratio of liabilities to equity

Effectiveness indicators:

Assets turnover – is the ratio of income from sales of final goods to average assets

Receivables turnover - is the ratio of income from sales of final goods to average stock of receivables

Inventory turnover – is the ratio of cost of sales to average reserves of inventory

<sup>20</sup> The change for 2 quarter of 2007 is estimated to the corresponding period of previous year and added to the index in 2006. Due to the different coverage of respondents in quarterly and annual reports, the data may differ from each other

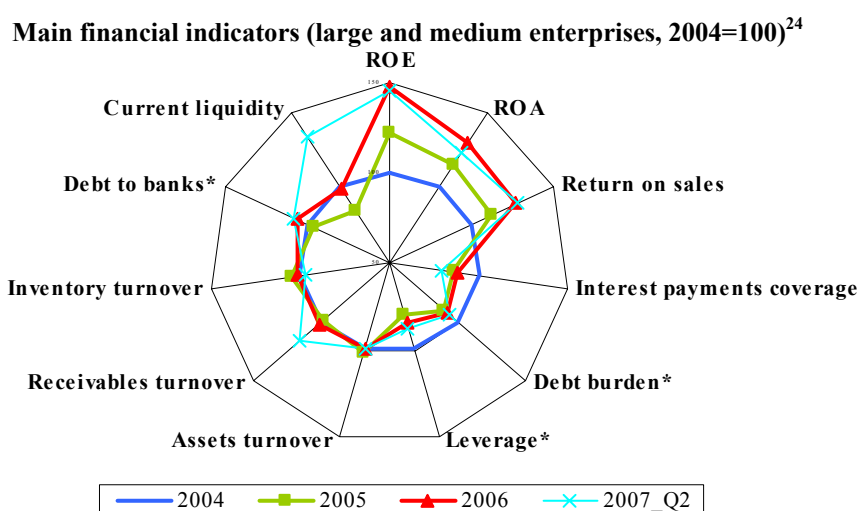
Construction	37.55%	3.43%	4.04%	0.85	10.95	12%
Trade	23.29%	3.76%	2.57%	1.46	6.19	19%
Transport and communications	20.29%	10.66%	16.41%	0.65	1.90	11%
Real estate transactions, rent and services to consumers	31.70%	6.08%	31.49%	0.19	5.21	12%

Source: NBRK, SARK

There is a non-uniform distribution between large and medium<sup>21</sup> and small<sup>22</sup> enterprises. In particular, after a period of considerable increase of profitability in 2005-2006 some stabilization of return on equity and assets is observed according to results of the 1<sup>st</sup> half of 2007 (Figure 2.4.2). Debt burden is increasing moderately as well. In conditions of favorable pricing and high bank lending the enterprises were able to increase liquidity and that had an effect on increase of accounts receivable turnover<sup>23</sup>. Moreover, high profitability compensates moderate indebtedness and does not create significant pressure on profit in terms of debt servicing. The most considerable decline of the financial stability indicators is observed in construction sector. In particular, decreases of profitability, of interest payments coverage by incomes, and of the most liquid assets under conditions of debt burden and indebtedness growth to banks are observed. Moreover, increase of inventory turnover periods can demonstrate the excess activity in this sector and some decrease in consumer demand.

On the other hand, a period of 2006-2007 was notable for further improvement of small business profitability (Figure 2.4.3). The decrease in debt burden due to the rise of capital over last period outpacing an increase of debt liabilities is a favorable factor given the high financial leverage historically.

Figure 2.4.2



\* Positive change means improvement of the value and vice versa

Source: NBRK, SARK

<sup>21</sup> Enterprises having more than 50 employees

<sup>22</sup> Enterprises having less than 50 employees

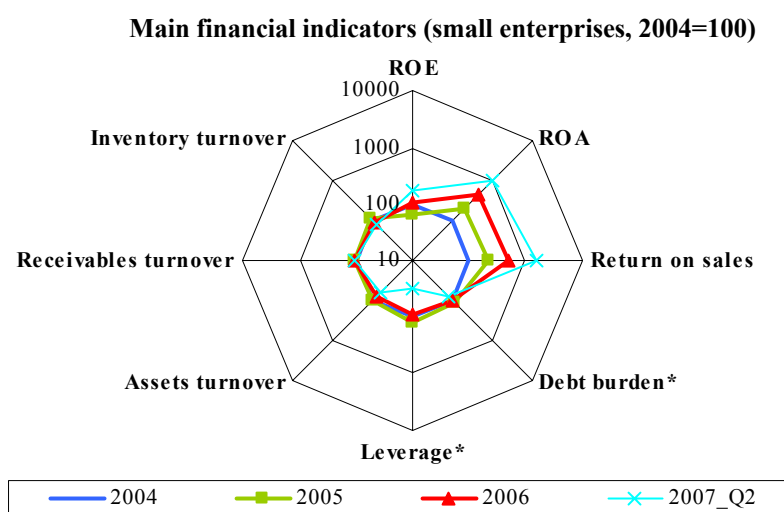
<sup>23</sup> Detailed risks analysis is included in the special research of the Financial Stability Report based on data of enterprises for 2005 -2006

<sup>24</sup> Indicators are identical to those used before. The additional indicators are:

*Cover of interest payments* – a profitability calculated as a ratio of pre-tax and interest income to payments of interest

*Current liquidity* – current assets to current liabilities ratio.

Figure 2.4.3



\* Positive change means improvement of the value and vice versa

This is a logarithmic scale

Source: NBRK, SARK

## 2.5. Financial Standing of Households

*Along with employment growth and increase of population income, rising debt burden leads to the accumulation of solvency, liquidity and exchange rate risks due to a high propensity to consume and its financing with borrowings from banks.*

Favorable factors influencing on households ability to service liabilities are the employment growth and income growth. In particular, in 2003-2006 a number of employees increased by 2.5% on average and, increased by 2.9% at the end of 2 quarter of 2007 compared to the same period of previous year. Unemployed population decreased by 3.4% during the same period. In 2006 average per capita income increased 1.3 times. With that, significant sector differentiation of wages as major source of income results in employment growth in high-income sectors and creates some income inequality. In particular, Gini coefficient<sup>25</sup> in 2006 increased from 0,304 to 0,312 demonstrating growth of population inequality and unequal financial positions of households subject to types of their activity.

The main debt repayments and servicing burden covers 7% of population. Moreover, average consumer expenditures by people of this category exceed their average disposable income<sup>26</sup> which requires additional borrowings (Table 2.5.1). Their negative financial margin<sup>27</sup> is due to the propensity to consume of non-foods, which increased twice during 2006.

Table 2.5.1

<b>Debt burden in a breakdown of monthly income per capita used for consumption in 2006</b>											
	up to 5000	5001 - 10000	10001 - 15000	15001 - 20000	20001 - 25000	25001 - 30000	30001 - 35000	35001 - 40000	40001 - 45000	45001 - 50000	over 50000
Share of population in the observed households, % from the total population	6.2	40.1	27.2	13.3	6.2	2.8	1.4	0.9	0.6	0.3	0.9
Financial margin, tenge	1751.9	1944.2	2255	1335	831.5	-1339.6	-2525.8	-4832.6	-6245.4	-5559	-25381.4
Debt service/Disposable income, %	1.1	1.2	1.9	3.3	4.2	6.2	5.4	6.7	6.3	3.4	12.8
Consumption expenditures/disposable income, %	64.6	76.8	82.6	91.3	95.5	104.4	108.4	116.8	118.8	121.1	160.3

Source: SARK

<sup>25</sup> Data provided by the National Statistical Agency

<sup>26</sup> Disposable income means difference between incomes and personal transfers, taxes

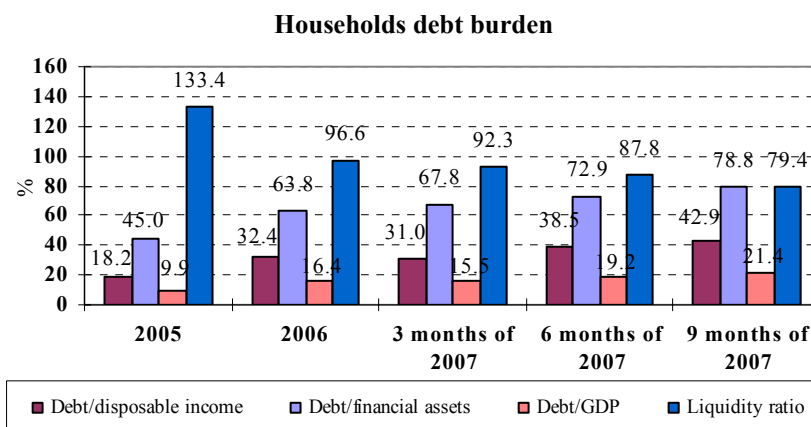
<sup>27</sup> Difference between income and consumer expenditures, including principal and interest payments

Thus, in households sector debt burden growth is observed with respect to disposable income, financial assets and GDP as a result of active borrowings from banks for consumer purposes and housing purchases. Bank loans make 91% of households liabilities (Figure 2.5.1).

While relative solvency of households decreases, exchange risks in this sector increase in case of decline in value of national currency. Over 9 months of 2007 negative foreign exchange position has increased by 35% demonstrating increase in difference between foreign currency loans received and deposits placed (Table 2.5.1).

Furthermore, liquidity risk increases<sup>28</sup>, thus demonstrating decrease in disposable liquid assets to cover loans indebtedness to banks<sup>29</sup>.

Figure 2.5.1



Source: NBRK, FSA, SARK, Central Securities Depository

Table 2.5.2

	end of period, bln tenge				
	2005	2006	3 months of 2007	6 months of 2007	9 months of 2007
<b>Total assets</b>	11 030.70	16 890.30	17 200.10	17 689.70	17 820.50
Non-financial assets*	9 363.80	14 259.10	14 292.80	14 332.90	14 359.90
Financial assets**	1 666.90	2 631.30	2 907.30	3 356.80	3 460.60
excluding pension assets and life insurance reserves	1 017.20	1 718.50	1 940.30	2 310.30	2 349.40
<b>Liabilities</b>	750.2	1 678.20	1 972.50	2 447.10	2 728.50
Debt (loans+other liabilities)	750.2	1 678.20	1 972.50	2 447.10	2 728.50
<b>Net worth</b>	10 280.40	15 212.20	15 227.60	15 242.60	15 092.10
<b>Net financial worth</b>	916.6	953.1	934.8	909.7	732.2
excluding pension assets and life insurance reserves	267	40.3	-32.2	-136.8	-379
Balance (liabilities+net worth=total assets)	11 030.70	16 890.30	17 200.10	17 689.70	17 820.50
<b>Foreign exchange position</b>	-97.1	-351.2	-450.9	-567.2	-474.6

\* Calculated as the product of average real estate price (sale of new houses, resale of comfortable, uncomfortable flats, elite houses) and square of private houses in cities plus individual housing construction over 2007

\*\* Include currency out of financial institutions, deposits, securities, financial derivatives and other assets

Source: NBRK, FSA, SARK, Central Securities Depository

## 2.6. Real Estate Market Determinants

*In environment of drastic differentiation of real estate prices subject to regional urbanization levels, increase in housing prices exceeding previous levels steadily is caused by excess of demand over supply of real assets and the market speculative component.*

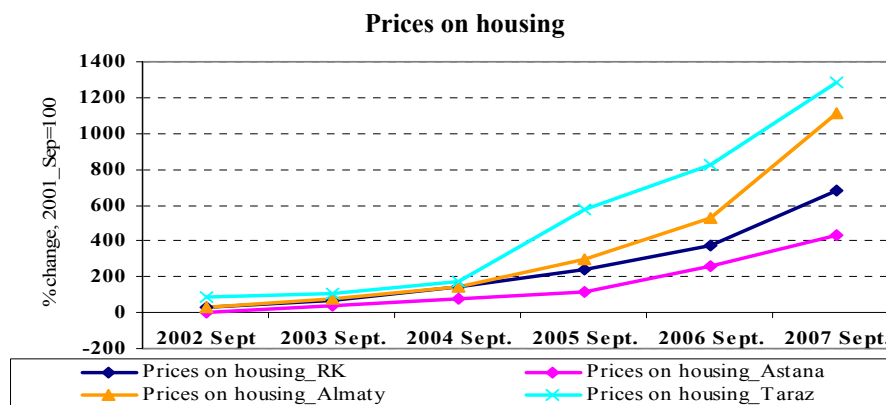
In conditions of high demand for housing by population, increase of its income and availability of mortgage lending, housing prices<sup>30</sup> are increasing steadily in the Republic as a whole

<sup>28</sup> Liquidity risk is calculated as ratio of currency and deposits to loans

<sup>29</sup> This fact is supported by the 4-times increase of overdue indebtedness of individuals (more than 90 days) for bank loans from September to September 2007

and in the regions for more than 5 years. Moreover, non-uniform regional distribution of housing prices increases more in time<sup>31</sup> and prices in low-price regions increase more rapidly (Figure 2.6.1). In absolute terms, real estate prices in the capital city is 1,7 times higher than average prices in the country, in Almaty 3 times, in Taraz the prices are lower twice.

Figure 2.6.1

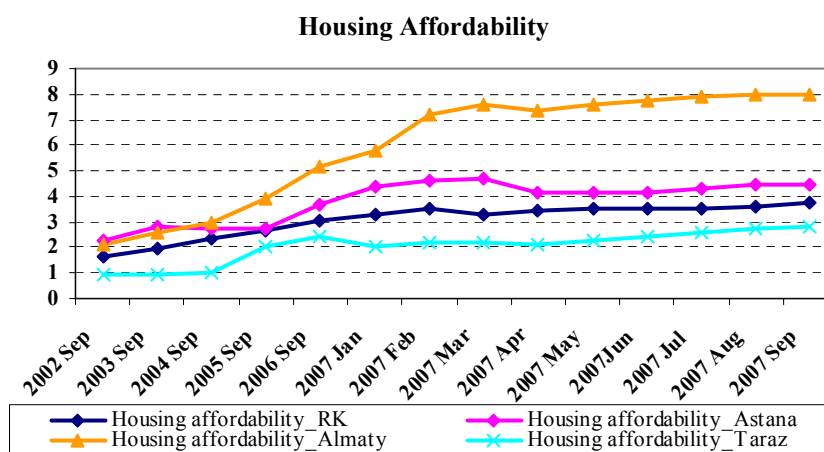


Source: SARK

As for demand and supply, the real estate market is in some imbalance now. As regards to supply, housing shortage of 11.2 mln square m<sup>32</sup> is observed and as regards to demand due to its high level un-affordability of housing is observed. In particular, housing affordability is assessed on a special coefficient calculated as housing value to income ratio<sup>33</sup>. Fluctuation margins of this coefficient define housing affordability (up to 3), moderately un-affordable housing (3,1-4), seriously un-affordable housing (4,1-5) and severely un-affordable housing (more than 5,1).

According to this analysis for Kazakhstan, as a whole<sup>34</sup>, starting from the second half of 2006, moderately housing un-affordability is observed. At the same time, real estate prices in Astana moved to seriously un-affordable ones at the end of 2006. In Almaty housing is severely un-affordable (Figure 2.6.2).

Figure 2.6.2



Source: SARK

<sup>30</sup> Prices are provided as arithmetic mean of a prices per 1 sq m for sale of new typical house, resale of comfortable, non-comfortable and elite house

<sup>31</sup> Standard deviation of real estate prices in regions increases

<sup>32</sup> Calculated as housing funds at the end of 2006, plus new introduced houses in 9 months of 2007, minus number of population multiplied by average housing supply

<sup>33</sup> Third Annual Demographia International Housing Affordability Survey: 2007

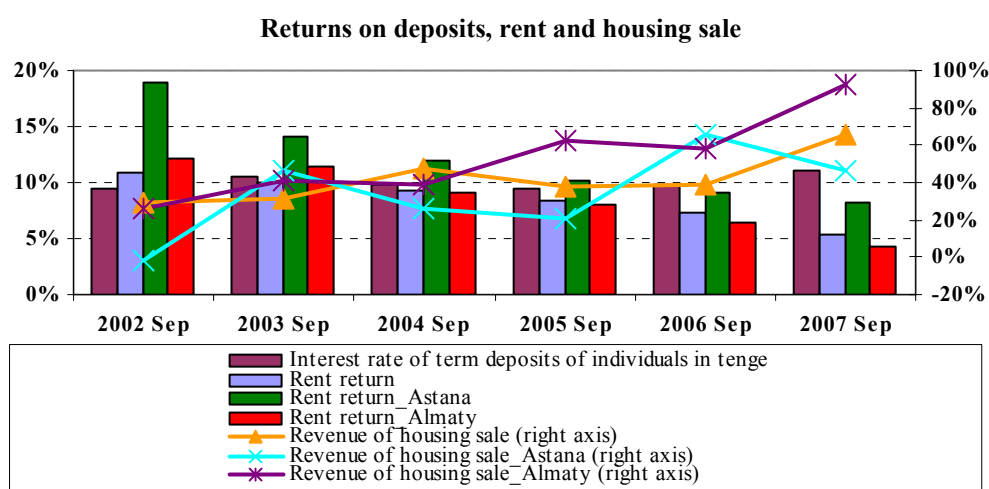
<sup>34</sup> Assessment was based on a ratio of product of average housing prices per 1 sq m and international housing supply norm of 18 sq m to annual wages



On September 2007 actual housing price in Kazakhstan, as a whole, exceeds the equilibrium hypothetically calculated price<sup>35</sup> by 24%, by 44% for Astana and by 149% for Almaty. Possible price correction on average for the Republic can reach 20%, and 30% for Astana. As for Almaty, it should be taken into account that the real estate market is attractive for population of other regions, and, thus, the difference can be overestimated, if merely wage of Almaty is taken. If average wages of a region with the highest wage in the Republic (Atyrau region) and Almaty are taken into account, the housing prices difference is about 117%. Thus, correction of real estate prices in Almaty can reach 35-60%<sup>36</sup>.

On the whole, the price difference between actual level and hypothetically equilibrium one suggests speculative transactions with real estate in the market and that contributed to increase in the prices. Housing resale as a speculative transaction became more and more attractive in terms of significant profitability outpacing interest rate of fixed deposits in tenge and housing rent return. The housing rent return which is observed as a result of real housing demand for a purpose of permanent residence is much less than resale profitability (Figure 2.6.3).

Figure 2.6.3



Source: NBRK, SARK

Among others, an important factor contributing to the growth of housing demand is a demographic situation in the country, i.e. an increase of natural population growth. Thus, in 2006 a natural population growth factor per 1000 people was 9.4, while in 2005 it was 8.05. Moreover, net immigration to the country persists.

To support increasing demand for housing, housing construction became more intensive under stable growth of lending for construction, reconstruction and housing purchases. At the same time a share of new introduced houses to total housing funds is rather low: 2.4% in 2006<sup>37</sup>.

<sup>35</sup> Calculated as annual wage multiplied by 3 (upper margin of the coefficient for affordable housing) and divided by 18 (housing supply norm)

<sup>36</sup> Maximum correction range may be assumed, if borrowing potential of population for housing purchases will be significantly restricted. If lending is kept adequate to borrower's solvency, price correction in Almaty can reach 35%. The basis for this estimation is that when considering credit applications, banks take into account borrower's credit servicing capacity with acceptable risk levels. One of the risk assessment criteria is a ratio of credit servicing payments to monthly income. In our case, a factor of 0.4 is applied. Thus, disposable resources can be increased by a quarter.

<sup>37</sup> For example, it is 4% for Czech Republic



### 3. Financial Markets

#### 3.1. Foreign Exchange and Money Markets

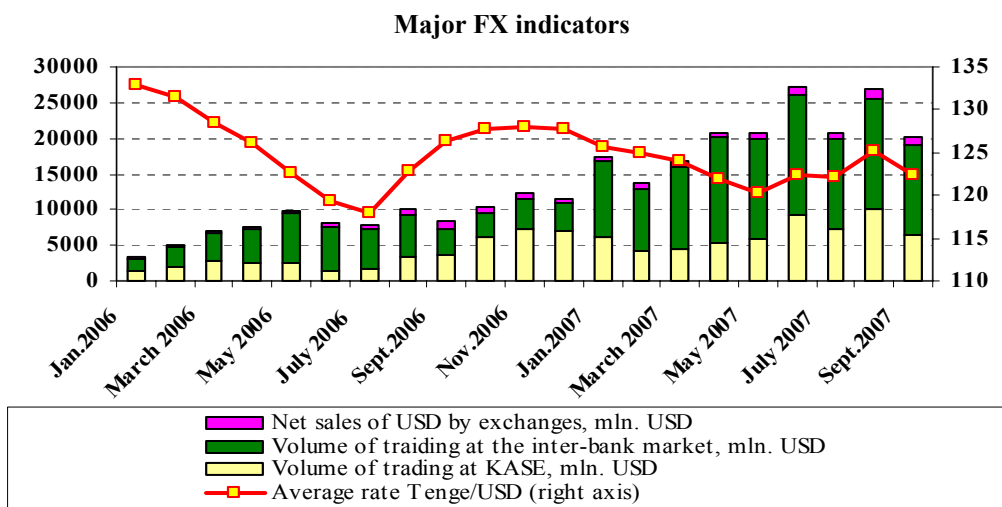
*KZT exchange rate situation in 2007 can be described as multifarious trend like due to FX fluctuations of demand and supply, as well as volatility of global FX markets.*

The first half of 2007 marked strengthening effect of tenge in nominal terms with regard to US dollar, after the 20<sup>th</sup> of July till August tenge lost some positions against US dollar, and in September tenge reinforced again. Instability on the foreign exchange market, mainly, was a consequence of considerable growth of demand for foreign exchange by the second-tier banks (Box 2).

The average weighted market exchange rate for 9 months, 2007 amounted to 123.21 KZT/US dollar. Since the beginning of the year, tenge strengthened by 4.8% as against US dollar in nominal terms. The highest rate of revaluation was observed in April (3.0%) and September (4.2%). The market rate amounted to 120.96 KZT / US dollar at the end of the period.

During 9 months of 2007 stock market US dollar trading amounted to 59.1 billion US dollars, having increased 2.8 times as compared with the same period of 2006 (Figure 3.1.1). On the off-exchange money market, during 9 months of 2007 the volume of transactions in US dollars increased 2.8 times as against the same period of 2006, and amounted to 117.2 billion US dollars. Transactions between resident banks prevail in the structure of the off-exchange money market (increase 2.7 times, 93.8 billion US dollars); though a share of non-resident banks is increasing at surpassing rate (increase 3.1 times, 23.4 billion US dollars). Transactions with Russian roubles and Euro are insignificant on exchange and off-exchange segments of the foreign exchange market.

Figure 3.1.1



Source: NBRK, KASE

*On the monetary market the National Bank kept withdrawing liquidity through major operations, including net foreign exchange sale. In Q3 2007 refinancing operations of the National Bank contributed to adequate liquidity maintenance.*

During 9 months of 2007 net foreign exchange sale in KZT on the KASE and interbank market amounted to about 5.9 billion US dollars. For all that, in August the net sale by the National Bank amounted to 4.6 billion US dollars; that was caused by increase of demand for foreign exchange by second-tier banks. Moreover, in January-September the National Bank assets were converted from KZT into foreign currency to the amount of 4.0 billion US dollars (1.2 billion US dollars through KASE).

### Foreign exchange instability in August

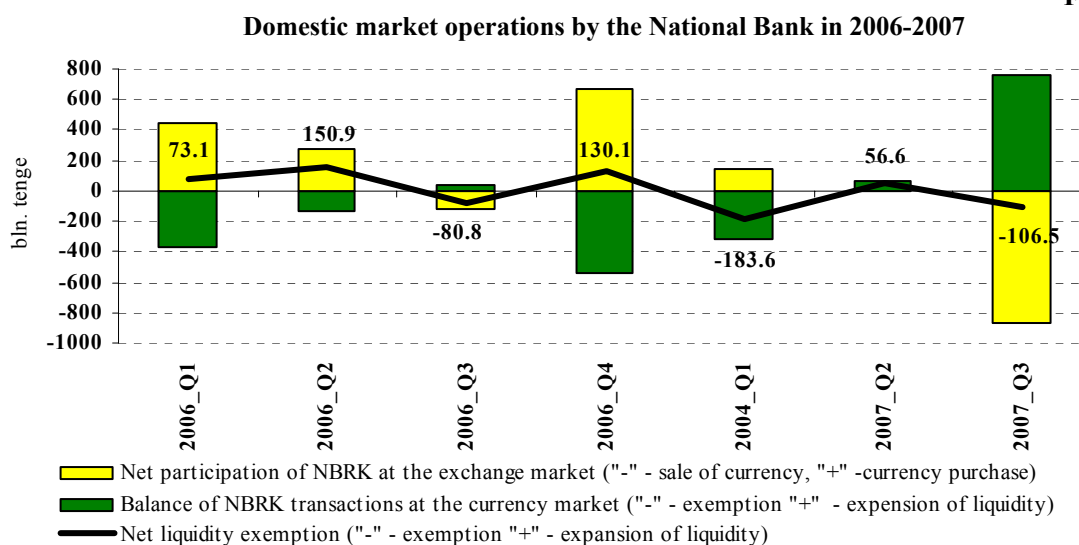
Demand for foreign exchange by second-tier banks increased considerably in August 2007 due to the fact that principal and interest under foreign loans were being paid by banks during the second half-year of 2007, thus resulting in increase of demand for foreign exchange since access to foreign markets was limited.

Moreover, a speculative demand for cash US dollars was observed on the cash exchange market within several days at the end of August and a margin between foreign currency purchase and sale rates amounted to 10-15 KZT. That was provoked by unreasonable rumors regarding the crisis of the banking system in Kazakhstan as a consequence of the world markets crisis.

Amendments to the Customs Code of the Republic of Kazakhstan could be the other potential reason for this situation. According to the amendments, an import of foreign currency should be accompanied with a cargo customs declaration from the country of origin, except for the countries which do not provide customs declaration owing to their legislation. According to banks' press-cutting service, it was a problem for many Kazakh banks to submit the documents requested by customs authorities for cash import, which turned out in currency delay to bureaux de change.

During 9 months of 2007 the National Bank withdrew 233.5 billion KZT of liquidity both through the foreign exchange market and money-market operations (Figure 3.1.2)<sup>38</sup>. With all this going on, in Q3 2007 the National Bank ensured liquidity through reverse REPO and cross currency swap operations.

Figure 3.1.2



Source: NBRK

***On the interbank deposit market the majority of transactions are conducted in foreign currency owing to relations with nonresident banks.***

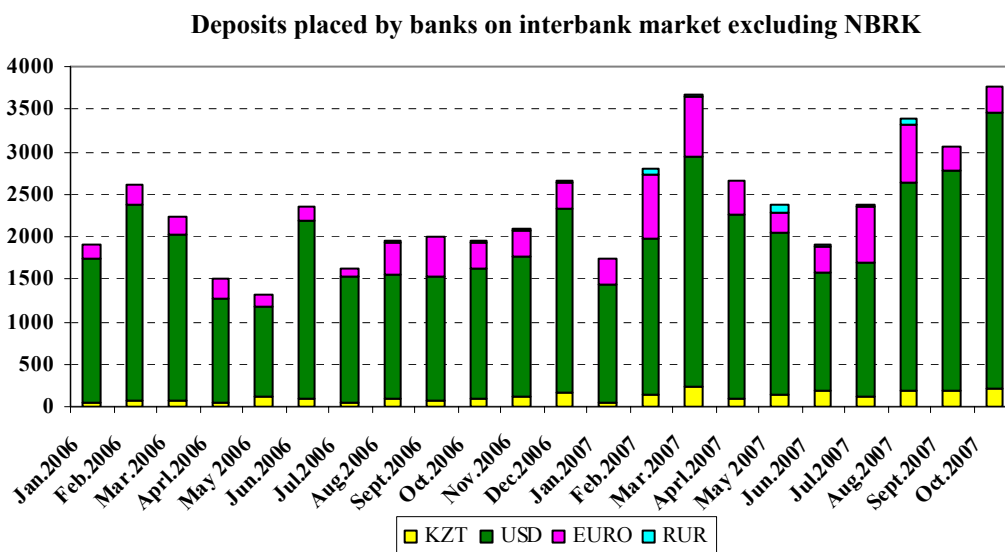
During 10 months of 2007 interbank deposits placed amounted to equivalent of 3,764.1 billion KZT, having increased by 42.6% as compared with the same period of the previous year (Figure 3.1.3). At the same time, deposits in KZT equal to 6% of total deposits placed increased more than twice, while the fee rate increased from 4.32% in December 2006, to 7.40% in October 2007. US dollar deposits increased by 34.1% coming to 77% of total interbank deposits, while the fee rate increased from 5.35% to 4.86%. Euro deposits are 17% of total deposits placed, while the

<sup>38</sup> Balance of operations by the National Bank on the money market is calculated as amount of changes in circulating short-term notes, balance of fixed deposits of banks in the National Bank, balance of reverse REPO and cross currency swap operations of the National Bank, balance of correspondent KZT and foreign currency accounts of banks in the National Bank. At that, any positive amount means withdrawal of banks KZT liquidity and any negative amount, liquidity renewal.

fee rate increased from 3.38% to 3.77%. Deposits in Russian roubles are insignificant - about 1% of total volume.

Interbank deposits in foreign exchange amount to 94.5% of total volume of interbank deposits placed. Moreover, a large portion of such deposits (93.6% of total interbank deposits in foreign currency) is placed at nonresident banks.

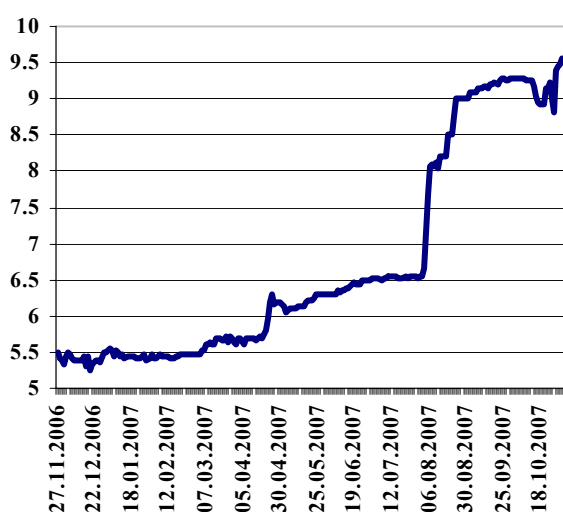
**Figure 3.1.3**



Source: NBRK

**Figure 3.1.4**

**KazPrime**



Source: NBRK

As a result of risk reassessment for world credit and stock markets, money attraction rates on the domestic market increased steeply as well. Thus, Kazprime index<sup>39</sup>, in fact, increased by 370 basing points (Figure 3.1.4).

<sup>39</sup> KazPrime indicator demonstrates the average value of money placement rates at the Kazakh market of interbank deposits for a 3-month period. At present, parties of an agreement regarding KazPrime indicator formation are JSC "Bank TuranAlem", Subsidiary Bank JSC "HSBC Bank Kazakhstan", JSC "Citibank Kazakhstan", JSC "Kazkommertsbank", JSC "People's Savings Bank of Kazakhstan", JSC "DAB"ABN AMRO Bank Kazakhstan".

## 3.2. Securities Market

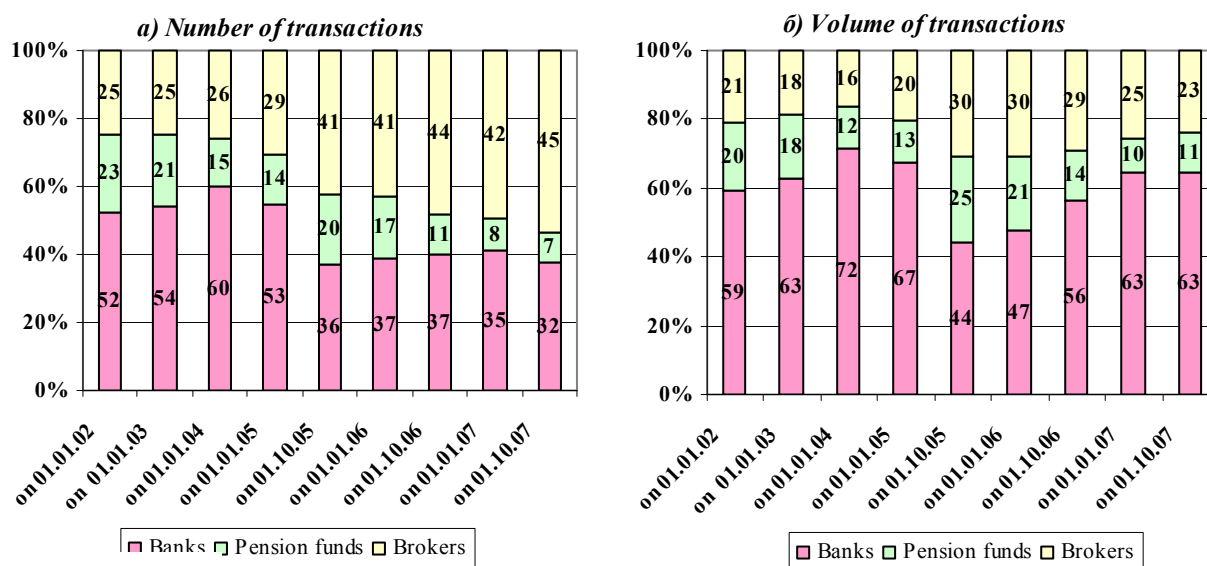
*Foreign investment activity on the securities market of Kazakhstan is insignificant. Bonds are predominating over shares, which volume is less than the current number of joint-stock companies. Primary securities circulation is under-developed. The market of derivative financial instruments is absolutely infantile. Foreign investors' activity has decreased.*

### 3.2.1 Securities Market Structure

Changes in institutional infrastructure of the securities market of the Republic of Kazakhstan in 2007 are associated with expansion of activities by the regional financial center of Almaty. A number of brokers and dealers being ARFC members, a number investment companies and investment portfolio managers have increased. A number of transactions conducted by brokers increases (as of 01.10.2007, this index reached 54%). A share of banks is 32% and a share of pension funds decreased by 10% as against 2006 and amounted to 7% (Figure 3.2.1.1-a). At the same time, most of the transactions (63%) were conducted by banks; by brokers 23% of transactions and by pension funds 11% (Figure 3.2.1.1-b).

Figure 3.2.1.1

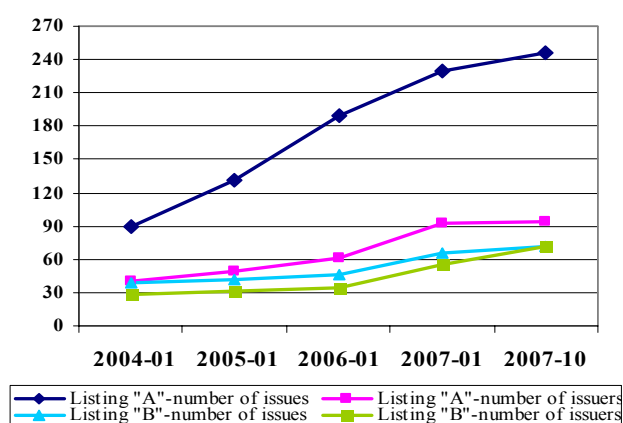
Number and volume of transactions by institutional investors, %



Source: KASE

Figure 3.2.1.2

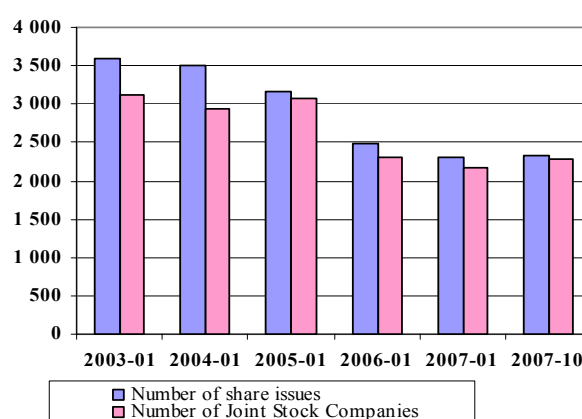
Securities accepted to KASE bids



Source: FSA

Figure 3.2.1.3

Number of joint-stock companies with effective share issues

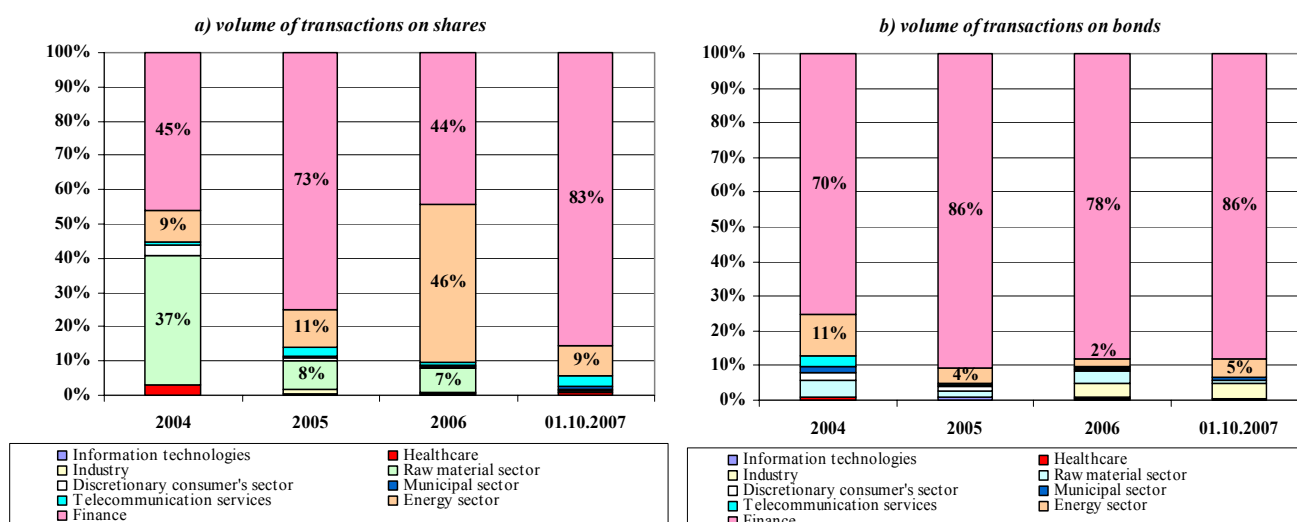


Source: SARC

The role of stock exchange in development of the Kazakh stock market is essential. Numbers of listed securities issues is increasing as well as share and bond issuers (Figure 3.2.1.2). Since 2006 a number of issuers increased 1.5 times and a number of “A” and “B” listings issues increased 1.3 and 1.5 times, having amounted by October 01, 2007 to 246 and 71 issues, accordingly. Moreover, the volume of transactions included in a formal list under Category A decreased by 19.7%, under Category B increased by 22.3%. Major portion of all the securities issued are Listing A bonds (63%), the smallest portion Listing B bonds (8%). 30% fall on shares, that makes about 4% of total issues by all joint-stock companies in Kazakhstan (Figure 3.2.1.3). As for October 1, 2007, total number of effective share issues is 2,325. At the same time a number of joint-stock companies with effective issues for the above date is 2,290 (Figure 3.2.1.3). This situation can be explained by subjective factors having impact on activities of different economical subjects of Kazakhstan (joint-stock companies either are not interested in stock floatation, or want to avoid disclosure of their accounts, that is one of the stock exchange requirements, or joint-stock companies prefer stock floatation on foreign stock exchanges), and general tendency of stock market development. It should be noted that a considerable portion of securities in formal lists of Category A are issues of second-tier banks.

Figure 3.2.1.4

#### Branch structure of securities market in terms of completed transactions, %



Source: KASE

Source: KASE

From the SM branch structure, regarding the volume of transactions completed at the Kazakh stock exchange (Figure 3.2.1.4), it's clear that the financial sector is dominant both in share and bond markets. This demonstrates continuing imbalance in development of the SM. According to results of three quarters of 2007, an increase in turnover of the market of shares amounted to 25.9% as against 01.01.2007, and increase for the market of bonds amounted to 6.3% for the same period. In 2007 the turnover structure for the market of bonds corresponded to the structure of potential corporate debt and was formed, mainly, of inflation-indexed and unindexed securities denominated in KZT.

The situation on the formal market has positive development dynamics of the secondary securities market and insufficient activity of the primary securities market. Thus, during Q3 2007 no shares transaction was completed on the primary market, whereas on the secondary market the volume of shares transactions completed increased by 57.3% and REPO operations by 47.5% as compared with 2006. The identical problem is on the bond market. As a result, by October 1, 2007 a share of REPO transactions amounted to 77%, a share of the secondary market transactions was 21.5% and futures transactions covered 1.41%. Transactions with non-government securities decreased by 19.3% in 2007.

Exchange transactions with government securities on the formal market during a reporting period increased by 40.9% as a result of increase in REPO transactions by 46.2% and primary distributions by 58.2% accordingly (Table 3.2.1.1). 94.46% of total transactions with government securities accounts for REPO transactions.

In 2007 the REPO market took a leading position at KASE as for volume of operations as it covered some functions, including a function of “short money” to support short-term liquidity in KZT of securities market players. Other REPO functions are idle cash investment and money aggregate management instrument of the National Bank.

**Table 3.2.1.1**

**KASE transactions with government securities**

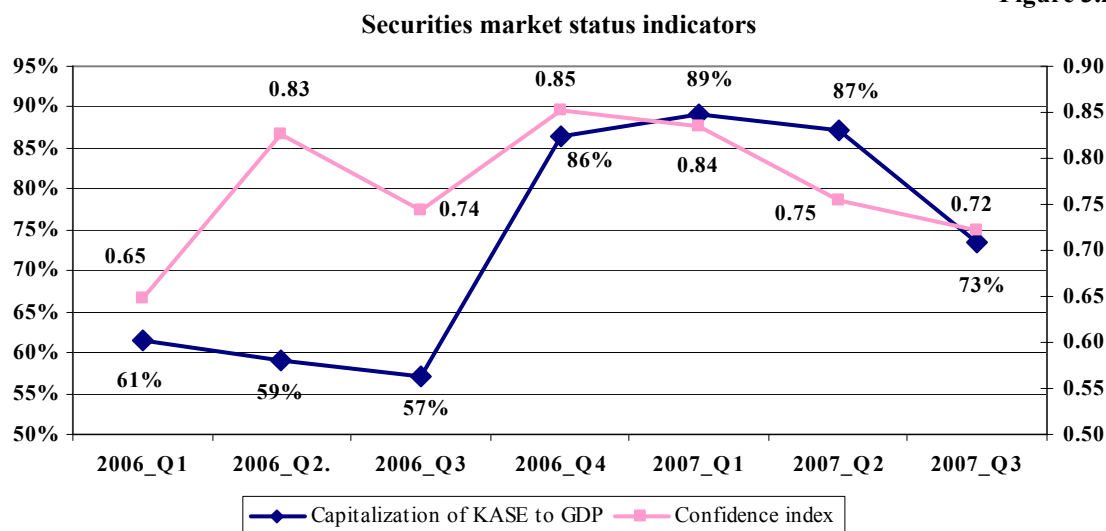
	01.01.2003	01.01.2004	01.01.2005	01.01.2006	01.01.2007	01.10.2007
<b>Volume of transactions, including:</b>	3 084 495	3 456 062	6 278 155	1 754 640	4 227 032	5 956 126
<b>IPOs</b>	3 299	0	0	17 812	25 456	40 282
<b>REPO transactions</b>	2 784 120	2 877 082	5 525 052	1 623 701	3 849 637	5 626 627

Source: KASE

### 3.2.2 Major Indicators of Securities Market

One of the major parameters of the securities market is the stock exchange status indicators: KASE\_Shares<sup>40</sup>, KASE\_BY<sup>41</sup>. On the whole, stock market indicators of the Republic increased significantly.

**Figure 3.2.2.1**



Source: KASE

As of 01.10.2007, KASE total capitalization increased to 8,811,709 mln. KZT (Figure 3.2.2.1), that makes 73% of GDP. The meaning of the same indicator for 01.10.2006 was 57%. Thus, considerable growth of the formal stock market and the entrance of new issuers to the Kazakh securities market are observed. However, if indicators of Q2 and Q3 2007 are compared, the change for the worse is obvious (decrease by 14%).

The confidence index<sup>42</sup> improved as well as against previous periods, but if Q3 2007 compared with Q1 2007, the index changed greatly for the worse. Decrease in capitalization and

<sup>40</sup> KASE\_Shares is a price index of shares showing change in the best price parameters registered at KASE open market for shares of KASE Category A formal listing;

<sup>41</sup> KASE\_BY is a yield index of corporate bonds, i.e. average weighted (through capitalization) yield of corporate bonds included in KASE Category A formal listing calculated for transactions or using average values of market-makers' quotations (in case of no transactions);

confidence index, mainly, resulted from negative price dynamics of listing companies' shares in Q3 2007 owing to upsets at international financial markets and short-term liquidity market pressure.

### 3.2.3 Influence of International Market on Stock Market of Kazakhstan and Major Indicators of Kazakh Issuers

*Owing to the serious problems at the subprime mortgage lending market in the US, investors reconsidered their positions and that resulted in mass capital cross-flow from the higher risk to lower risk assets. The factors that affected the financial market of Kazakhstan are the volatility of world financial markets, rise in prices for non-risk government securities of developed countries, fall in securities quotations of developing countries, and spread expansion of corporate securities.*

Foreign investors' presence at the stock market of Kazakhstan is still insignificant. The circulation of foreign securities on the stock exchange of Kazakhstan is insignificant as well. As of 01.10.2007, liquidity of this market segment is practically equal to zero.

Considerable spread expansion for Kazakh banks is observed; credit protection purchase (Credit Default Swap - CDS<sup>43</sup>) for Kazakh banks has risen in particular (Table 3.2.3.1).

Table 3.2.3.1

Credit default swap for banks of Kazakhstan (CDS premium)

Issuer	01.05.07	08.08.07	08.11.07
Bank Caspiyskiy	500 b.p.	850 b.p.	795 b.p.
ATF Bank	150 b.p.	250 b.p.	346 b.p.
Bank CenterCredit	300 b.p.	500 b.p.	775 b.p.
Nurbank	550 b.p.	800 b.p.	875 b.p.
Temir Bank	550 b.p.	750 b.p.	950 b.p.
Alliance Bank	450 b.p.	800 b.p.	1050 b.p.
Bank TuranAlem	270 b.p.	600 b.p.	717 b.p.
Kazkommertsbank	220 b.p.	450 b.p.	642 b.p.

Source: NBRK

Moreover, considerable landslide of prices for shares of Kazakh banks was observed on the international financial market. As an example, share prices of Kazkommertsbank, Alliance Bank and Bank CenterCredit are given in Table 3.2.3.1. Since the beginning of the crisis the share prices for Kazkommertsbank, Bank TuranAlem and Alliance Bank fell down by about 45% and share price for Bank CenterCredit about 34%. The market tendency of investment inflow to non-risk assets resulted in considerable increase of foreign debt value for Kazakh banks.

Global expansion of spreads (difference in yields of high-risk and low-risk assets) resulted in increase of yield and, as a consequence, to landslide of prices for Kazakh corporate bonds. Thus, average yield of Kazkommertsbank bonds increased by 4% as compared with the beginning of the year, Bank TuranAlem - by 3.5%, Bank CenterCredit - by 4%, Alliance Bank - by 6.7%, Khalyk Bank - by 1%. The table below includes indicative yields for some<sup>44</sup> securities issued by the biggest Kazakh banks for the beginning of the year and their present yield.

<sup>42</sup> Confidence index is a ratio of average yield of high-rating corporate bonds to average yield of low-rating corporate bonds. Stable increase of the index means increase of confidence in a strong market and vice versa.

<sup>43</sup> CDS is a contract requiring the credit protection seller to redeem bonds of a specific issuer from a contracting party (CDS purchaser) at their nominal cost, if a specified credit event occurs. The CDS purchaser shall pay a premium to the seller on regular basis. Premium size is subject to a credit risk of the hedged issuer.

<sup>44</sup> The table includes securities with adequate quotation in Bloomberg system.



Table 3.2.3.2

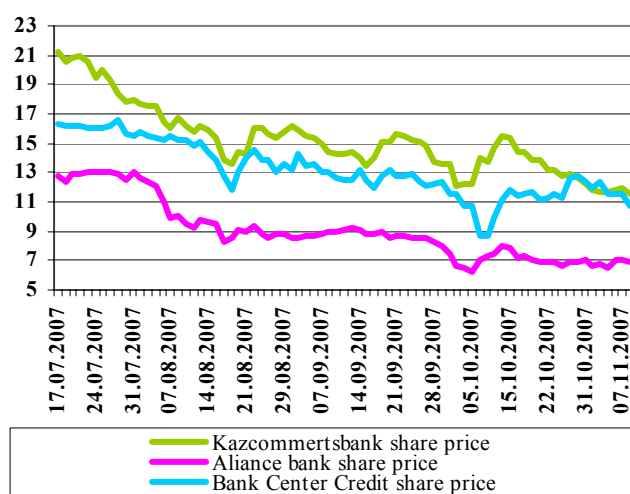
## Bond yield of second-tier banks

	Yield as for 01.01.2007	Yield as for 08.11.07
KKB 8.5% 04/2013	6.9%	10.8%
BTAS 8% 03/2014	7.6%	11%
CenterCredit 8% 02/2008	6.7%	10.8%
Alliance 9% 06/2008	7.9%	14.6%
Halyk 8.125% 10/2009	6.04%	6.95%

Source: NBRK

Figure 3.2.3.1

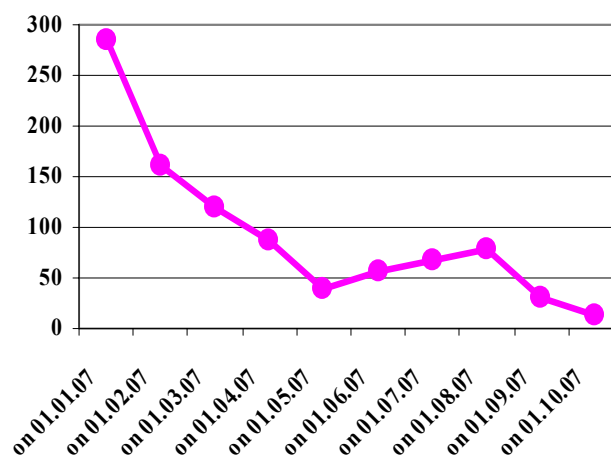
International market price for shares of second-tier banks



Source: NBRK

Figure 3.2.3.2

Average weighted yield of bank shares



Source: KASE

Thus, foreign economic factors, including high volatility of Asian stock markets at the beginning of the year, affected the yield of the banking sector at the domestic financial market (Figure 3.2.3.2). All in all, as for the banking system from 01.01.07 to 01.10.07, average weighted yield of bank shares decreased by 148%.



### III. Financial Intermediary Institutions

#### 4. Role of Financial Sector in Economy

##### 4.1 Financial Deepening

*High growth rate of crediting stipulated for higher credits to GDP ratio as compared with other financial intermediation indicators. Dynamics of financial intermediation indicators is relatively higher than the same indicators of CIS countries and Eastern Europe.*

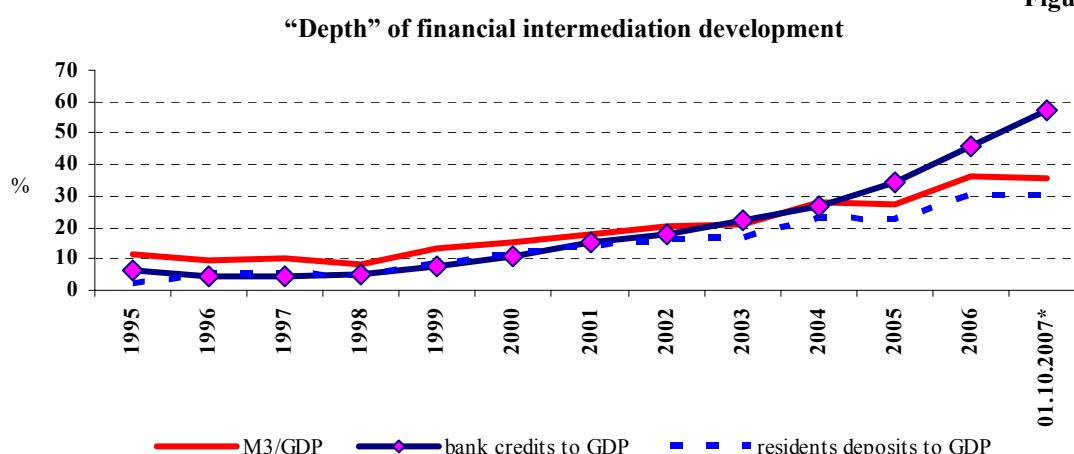
Continuing demand for credit resources provided by economic subjects resulted in increase of crediting volume to GDP ratio. Owing to high growth rate of crediting by second-tier banks this indicator increased from less than 30% in 2004 to 60%, as for results of 9 months 2007.

In turn and owing to increase in funding of second-tier banks out of foreign sources with further crediting of domestic economy, a gap between the credits to GDP ratio and population savings, as well as a wider indicator - economy monetization level, increased (Figure 4.1.1).

Increase in influence of crediting as an instrument of effective demand promotion and, thereafter, economic growth, results in risks susceptibility negative for economic growth factors associated with potential decrease in stability of credit resources facilities due to increase of the gap between crediting and domestic funding (out of deposit base of residents).

On the whole, growth rate of financial relations indicators in Kazakhstan resulted in exceeding of financial intermediation “depth” as compared with some CIS and Eastern Europe countries. Moreover, the “biggest” exceeding is observed for crediting level (Figure 4.1.2).

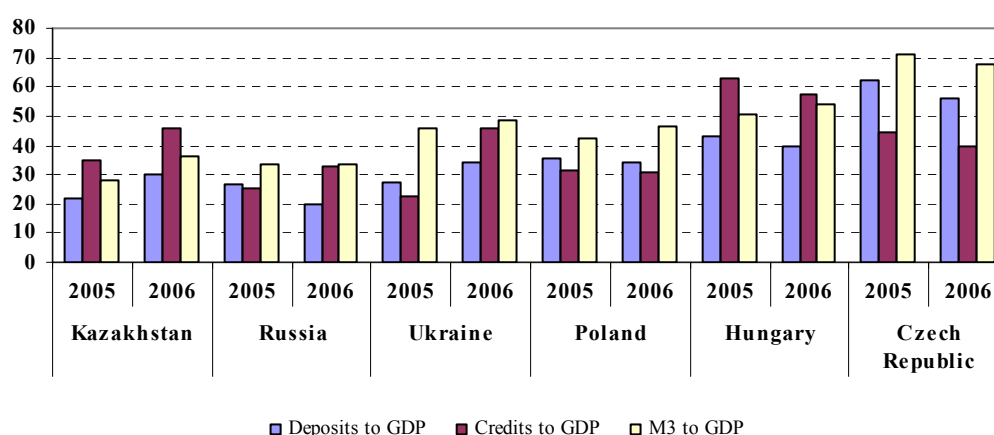
Figure 4.1.1



Source: NBRK

Figure 4.1.2

Comparative analysis of changes in financial intermediation development in 2005-2006 (in percent)



Source: NBRK, IMF, National sources

## 4.2 Financial Sector Structure

***In the institutional structure of the financial sector no changes were observed in the reporting period. The banking sector is still a dominating segment of the financial sector.***

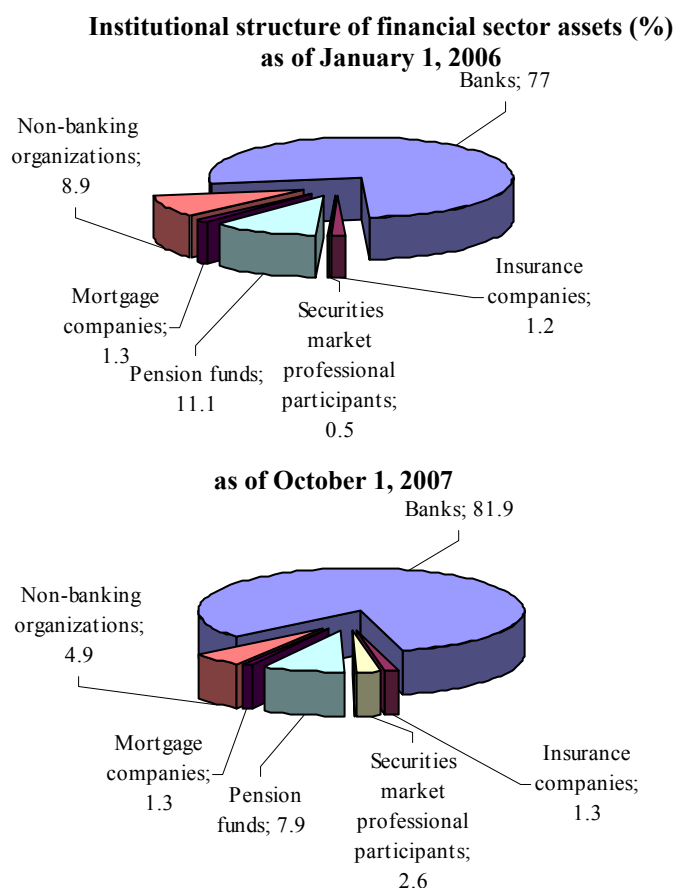
As in the previous years, the most of resources are kept by banks. Specific weight of bank assets in aggregate assets of the financial market keeps increasing. The reason for that is, to a great extent, credit activity of second-tier banks. Further, during a period from the beginning of 2006 to October 2007 assets of securities market professional participants increased, while share of non-banking organizations assets and assets of pension funds decreased, the share of insurance sector is stable (Figure 4.2.1). At that, institutional infrastructure of the financial sector remains steady (Table 4.2.1.)

Influence of the banking sector on other financial market segments is defined with its presence at the market of corporate bonds. Thus, as of October 1, 2007, 40% of total issues of corporate bonds were provided by second-tier banks (Figure 4.2.2).

Despite the continuous increase of corporate bonds in circulating, more than a half of its total volume is in portfolio of non-financial corporations and other investors. Moreover, specific weight of institutional investors, being bond holders, was 43.7% of total bonds issued on the territory of the Republic of Kazakhstan.

Thus, instability of the banking system will have adverse impact on stability of any financial market segments. Moreover, some institutions of the financial sector are bank subsidiaries or members of bank conglomerates and all that increases exposure of the financial sector to the system crisis.

**Figure 4.2.1**



Source: FSA

Table 4.2.1

**Institutional structure of financial sector  
(number of financial institutions)**

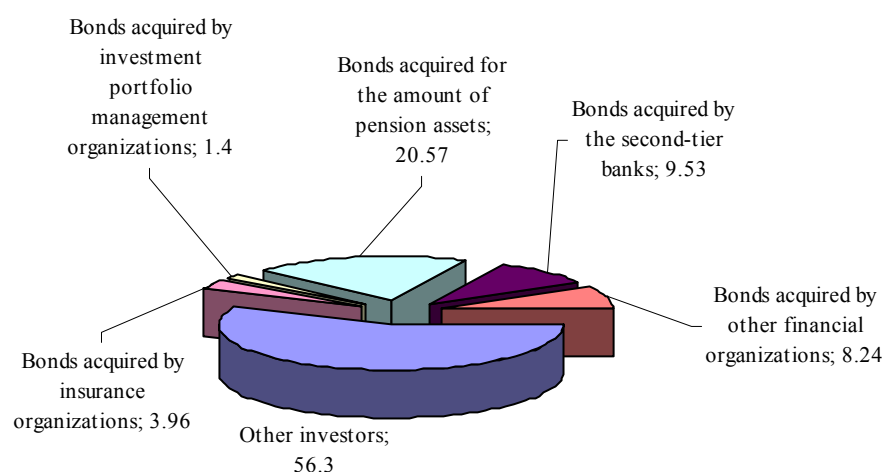
	01.01.04	01.01.05	01.01.06	01.01.07	01.10.07
Second-tier banks	35	35	34	33	34*
Insurance organizations	32	36	37	40	41
Insurance brokers	6	8	12	12	14
Actuaries	28	27	30	33	41
Pension funds	16	16	14	14	14
Pension assets investment management organizations (PAIMO)	10	10	10	13	11
Mortgage companies	2	3	7	10	10
Non-banking organizations	157	201	270	16	22
Brokers and dealers	52	57	62	69	99
Registrars	19	18	18	16	17
Self-regulated organizations	2	2	2	2	2
Transfer agents	0	0	0	2	2
Investment portfolio managers	10	14	28	37	55

\* The bank license was given to JSC "Masterbank" on October 26, 2007.

Source: FSA

Figure 4.2.2

**Major investors at the corporate bond market of the Republic of Kazakhstan  
(%, as of October 1, 2007)**



Source: FSA

## 5. Banking Sector

### 5.1 State, Infrastructure and Concentration of Banking Sector

*From the beginning of this year assets share of 5 largest financial institutions in the banking sector has decreased slightly, while there is a tendency of its increase in the accumulative pension system and the insurance sector. The banking sector and the pension services market are still “moderately concentrated”, while the insurance sector is “low concentrated”.*

*Despite the latest big acquisition by foreign financial institutions, assets share of banks with foreign participation in total assets of the banking sector is low, together with their authorized capital share in the total authorized capital stock of banks.*

While capital concentration is high and competition condition is low, the financial sector is exposed to system risks. Predominance of large banks at the domestic banking services market is a historical aspect. Assets share of 5 largest banks in total assets of the banking sector is 77.9%, on the 01.10.2007 (71.3% on the 01.01.2003). Moreover, from the beginning of this year it decreased slightly. The reason for such decrease is, on the one hand, increase of competitiveness and, on the other hand, some slow-down in aggressive activities by banks due to fluctuations at global markets resulting from the American mortgage crisis (Table 5.1.1). Some increase in the share of 5 largest financial institutions is observed in the accumulative pension system and insurance sector.

Herfindal-Hirshman index is used as a measure of market concentration. According to calculations for the banking services market, this index amounted to 1,486; for pension services market is 1,625 and for insurance sector is 745,5 (Figure 5.1.1).

The assets share of banks with foreign participation in total banking sector assets and their authorized capital share in banks' authorized capital stock have decreased and is minor (Figure 5.1.2).

Table 5.1.1

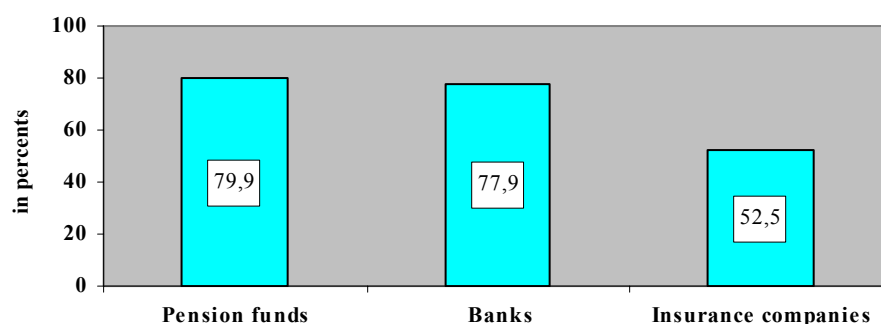
Share of 5 largest financial institutions (%)

	01.01.2003	01.01.2004	01.01.2005	01.01.2006	01.01.2007	01.10.2007
Banks	71,3	73,1	74,1	74,1	79,4	77,9
Insurance companies	72,8	63,3	61,8	57,5	49,6	52,5
Pension funds	79,5	77,35	76,2	77,95	78,98	79,88

Source: FSA

Figure 5.1.1

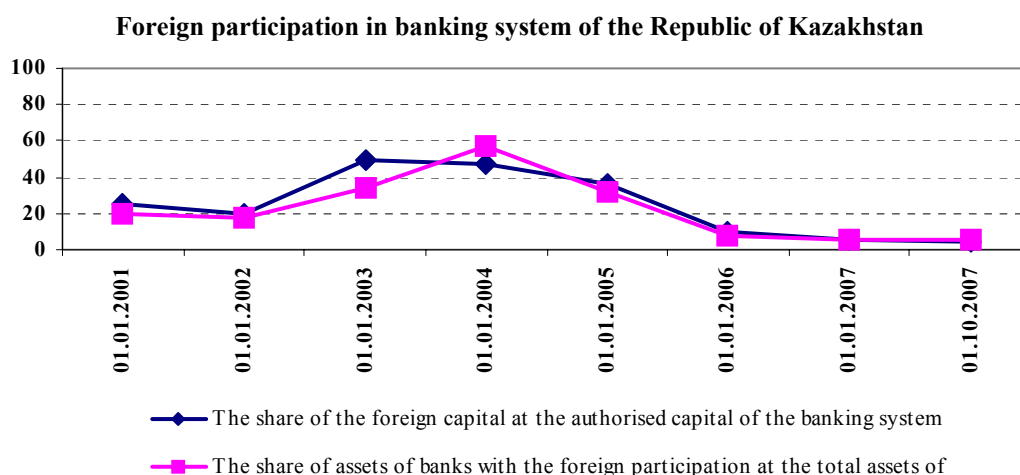
Financial sector segments concentration in Kazakhstan\*  
(as of 01.10.2007г.)



\* The share of the five major financial institutions of each segment at the total segment assets

Source: FSA

Figure 5.1.2



Source: FSA

## 5.2 Credit Risks

*Credit risk in the banking system is still high. Quality of its loan portfolio is of key importance for financial stability of the banking system due to relatively high concentration of borrowers and active participation in real estate and construction sector lending.*

*Stable debt service by borrowers under their credit contracts is determined by their financial statements and depends on general tendencies of economic development.*

*American experience and existed tendencies should be a “lesson” for domestic banks as a subject for credit risk assessment and credit portfolio quality management.*

Owing to remaining tendencies in macroeconomic sustainable development, improving of standard of living, rapid construction growth and unprecedented increase in real estate prices in 2007, a tendency of banks loan portfolio expansion continued as a result of active external borrowing which is relatively cheap (for the results of qualitative parameters analysis defining demand and supply at the credit market, please, refer to Box 3). External borrowing at relatively low cost facilitated growth of banks' funding and, as a consequence, banks' credit activity. This one contributed to rising of exposure of the banking sector to certain risks, in particular to credit risk. Only during 9 months of this year the credit portfolio increased by more than 45%<sup>45</sup> (Figure 5.2.1). Moreover, in view of decreasing the banking activities recently, it could be expected that growth rate by the end of this year will not exceed the previous year growth rate's value.

<sup>45</sup> According to international practice, credit portfolio growth rate of more than 15% a year demonstrates increase in susceptibility of the banking system to credit risk.

### Monitoring of situation at the bank credit market

To analyze situations at the banking market and development tendencies of banking services, studies of qualitative parameters of demand for and supply of credit resources can be applied. Using this research method, available quantitative data and their meanings for a certain period of time could be explained. Regular monitoring is a source of information for analytical survey and comprehensive assessment of bank interrelations, stress-testing and estimation of financial stability indications.

In July 2007 the National Bank surveyed second-tier banks for the first time. The Bank concentrated on determination of demand and supply factors at the credit market, a risk management policy, impact of price and non-price parameters on a bank pricing policy.

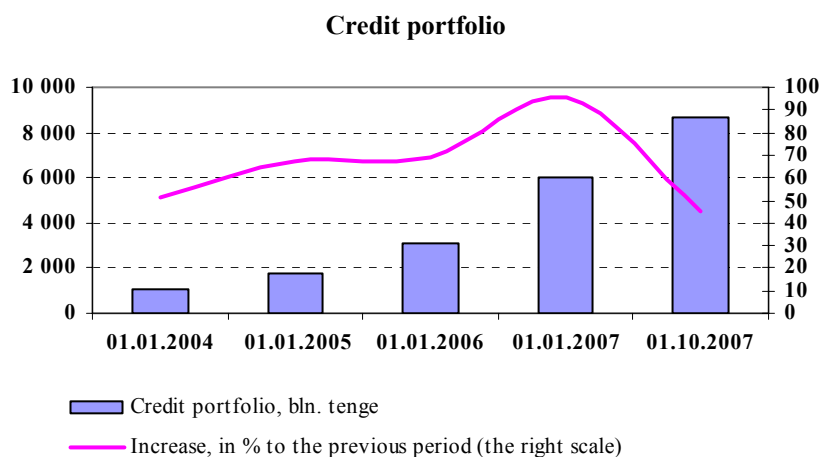
According to results of the survey, in the 1<sup>st</sup> half year 2007 increasing tendency of credits provided by banks to legal entities and individuals was observed. As for the legal entities, appreciable growth was observed for small and medium businesses (hereinafter referred to as “SMB”). The growth was caused by increasing demands for finance of circulating assets and purchase of fixed assets, and changes in bank credit terms and interest rates for SMB.

In the 1<sup>st</sup> half year 2007, under growing willingness by banks to credit individuals, demand for mortgage and consumer crediting products grew due to increase of common wealth and confident awareness of debt burden by borrowers; all that promoted considerable growth of indebtedness of people to banks.

As for expectations for changes in the credit policy, at the time of the survey positions of the banks were different: approximately equal numbers of respondents declared for its mitigation, maintenance and toughening. A dominant for mitigation of the credit policy was competitiveness by other banks and non-financial corporations; for toughening, credit portfolio risk reassessment. For all that, 2/3 banks expected that credit portfolio quality will remain at the current level.

On the whole, the survey results demonstrated that if a positive situation, as for availability of funding resources, keeps at foreign markets, increase of crediting activity by banks in the 2<sup>nd</sup> half year 2007 and further stable growth of the credit portfolio could be expected. However, in the light of the present world liquidity crisis, some slowdown of banks growth and revision of their further development plans were observed contributed, in addition, by regulatory measures and reassessment of risks associated with real estate, construction and mortgage. As a result, crediting conditions changed for toughening.

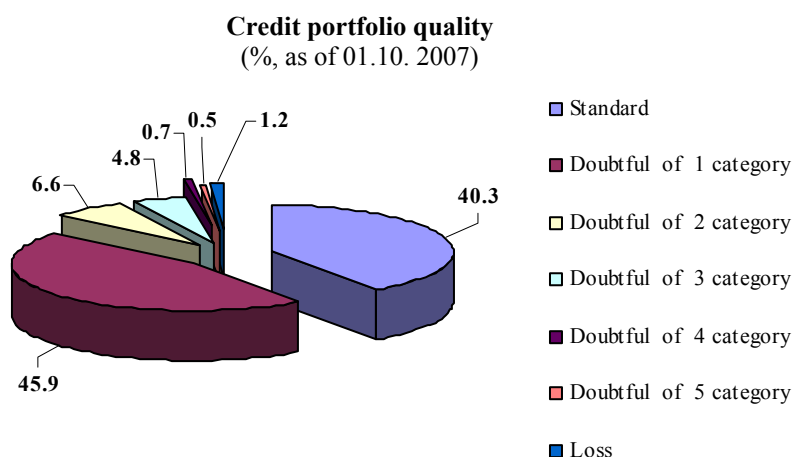
Figure 5.2.1



Source: FSA

From the beginning of the year the bank credit portfolio underwent some changes. First of all, implementation of tougher assets classification and credit documentation requirements to banks, contributed to decreasing of their loan portfolio quality from Q2 2007. Moreover, owing to the global liquidity crisis and debt refinancing problems, banks had to reassess their risks. As a result, their credit policy were revised that affected their borrowers and quality of debt service by them (Figure 5.2.2).

Figure 5.2.2

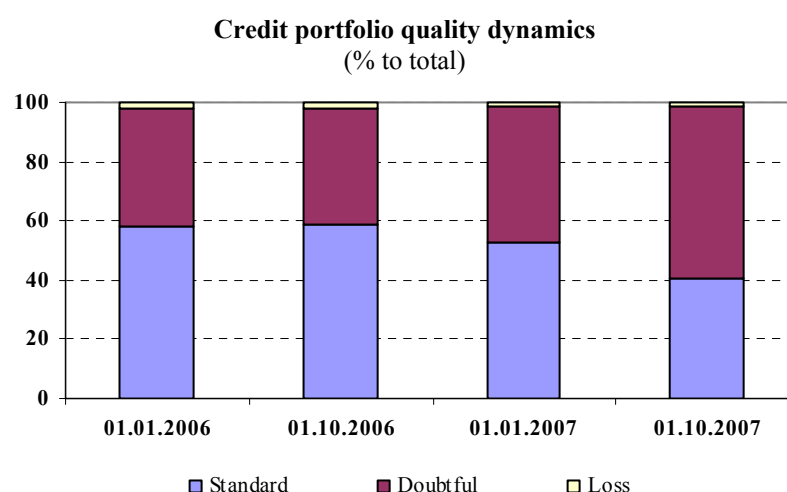


***“Nonperforming loans” are still below critical value. However, at the beginning of the year doubtful loans share increased, while standard credits share decreased.***

Asset quality deterioration caused the most of recent banking crises. For international comparison of loan portfolio quality assessment, mostly an indicator of “nonperforming loans” is applied. In world practice a threat to financial stability is considered significant when nonperforming loans reach to 10% in loan portfolio. Share of such loans in the loan portfolio of the Kazakhstan banking system is less than critical value - 10%. However, starting from April this year doubtful loans share increased while share of standard loans decreased. The reason for that, to a greater extent, are new requirements introduced by supervision authorities to have more adequate credit risk assessment and, accordingly, to adequate provisioning (Figures 5.2.3, 5.2.4). In turn, share of overdue indebtedness of clients in the banks loan portfolio decreased from the beginning of the year from 1.3% to 1.0% (Figure 5.2.5).

It should be noted that potential credit losses increased for overall banking system as a result of decreasing in loan portfolio coverage by collateral value and amount of created provisions (Figure 5.2.6). However, decreasing the coverage may reflect more conservative collateral assessment policy (as a result of changes in the real estate market) and increasing in non-collateralized lending (consumer loans).

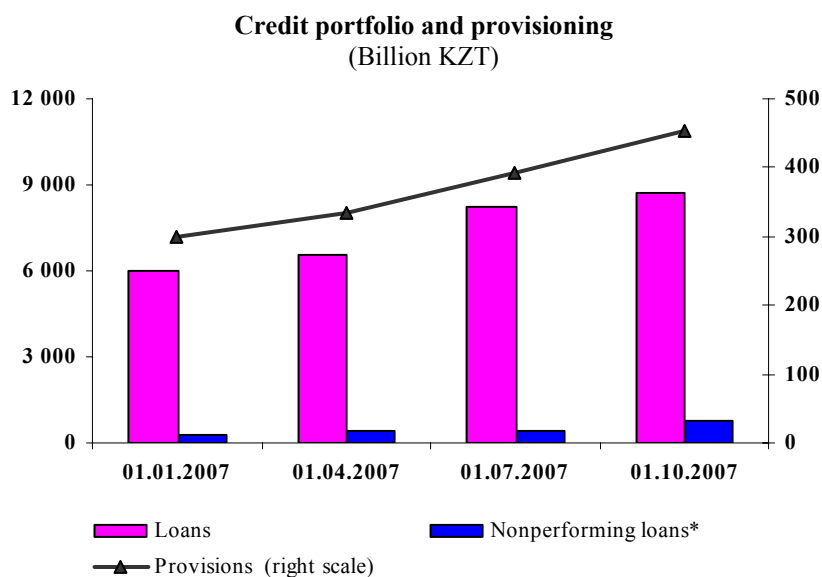
Figure 5.2.3



Source: FSA

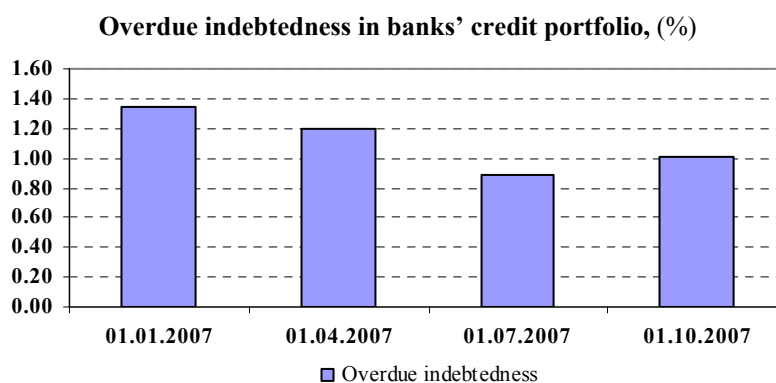


Figure 5.2.4



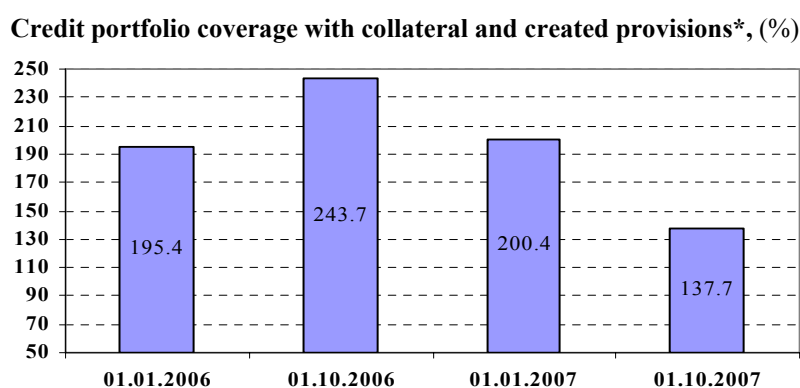
\* doubtful loans of 2, 4 and 5 categories plus loss loans

Figure 5.2.5



Source: FSA

Figure 5.2.6



\* The sum of created provisions and collateral value to credit portfolio of banks

Source: FSA

***Loans concentrated in several sectors, particularly in construction, trade and industry and that makes banks vulnerable under certain shocks in the sector. Banks are more vulnerable in terms of credits given to the construction sector. The reason for that is unpredictable development of this sector and high susceptibility to market price adjustment.***

In lending structure by branches of economy the most represented sectors are trade and construction. Trade is still the most credited sector (28.3%) among total banks credits to economy due to high velocity of money. In trade lending structure doubtful loans take 61.73% and loss loans is 1.25%. Construction is one of the most attractive sectors of crediting by banks as well. In 2005

construction credits amounted to 12.8% of the banks loan portfolio and annual increase made 81.4%. In 2006 construction lending covered 19.6% of the loan portfolio and, on the 01.10.2007, this indicator came to 25.6%. Thus, domestic construction enterprises depend much on bank lending. Moreover, relatively high concentration of the loan portfolio in construction entails considerable risks<sup>46</sup> associated with unpredictable development of this sector. In construction lending structure, doubtful loans amount to 71.99% and loss loans to 1.14% (Table 5.2.1).

Relative measure of risk exposure level in the sector is a ratio of created provisions to loan portfolio per the sector. During third quarter of this year this indicator tended to increase in the most of economic sectors, except for branches such as agriculture and “others” (Figure 5.2.7).

**Table 5.2.1**

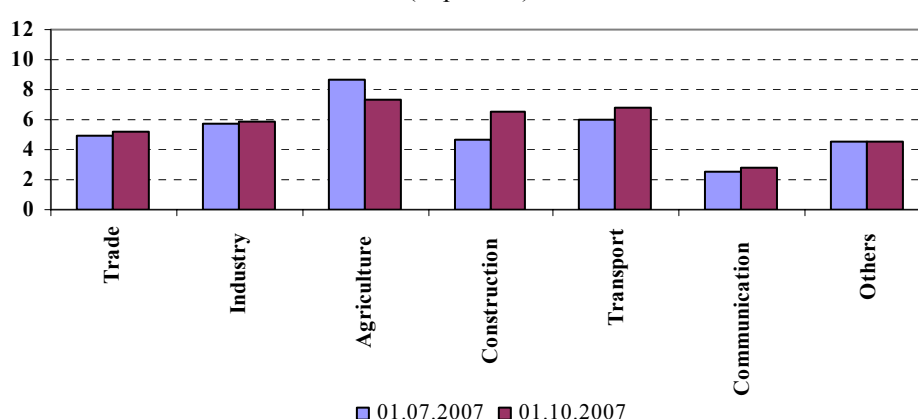
**Classified loans structure**

Branches of economy	Standard loans		Doubtful loans		Loss loans		Total
	01.01.07	01.10.07	01.01.07	01.10.07	01.01.07	01.10.07	
Trade	83,20	37,02	14,18	61,73	2,62	1,25	100
Industry	77,37	54,26	19,55	43,39	3,08	2,35	100
Agriculture	52,63	33,26	38,71	63,75	8,66	2,99	100
Construction	75,15	26,87	20,47	71,99	4,39	1,14	100
Transport	81,76	53,07	9,03	44,68	9,21	2,25	100
Communications	86,15	50,65	12,59	48,94	1,26	0,42	100
Others	86,73	45,73	11,82	53,72	1,45	0,56	100
<b>Total for economy</b>	<b>79,44</b>	<b>39,12</b>	<b>17,18</b>	<b>59,62</b>	<b>3,37</b>	<b>1,26</b>	<b>100</b>

Source: FSA

**Figure 5.2.7**

**The ratio of created provisions to credit portfolio per each branch of economy**  
(in percent)



Source: FSA

*In rapid assets growth banks start operating in new or less known fields such as consumer lending, mortgage, credits to small and medium sized enterprises, etc. , where risk management systems have not been fine-tuned and that results in increase of risks level.*

*Share of loans collateralized by real estate increases and, as a consequence, banks become exposed to risks associated with potential destabilization of the real estate market.*

*In turn, rise in mortgage loans with loan to value ratio not exceeded 70% demonstrates toughening of conditions for this product in response to increased risks level.*

Macroeconomic stability and welfare increasing stimulate growth of credit demand. Moreover, to expand their business, banks implement new types of banking products (express credits, autocredits, etc.) and work for service quality improvement and easing credit standards.

<sup>46</sup> According to international practice, critical credit concentration of 30% of the credit portfolio demonstrates high credit risks.

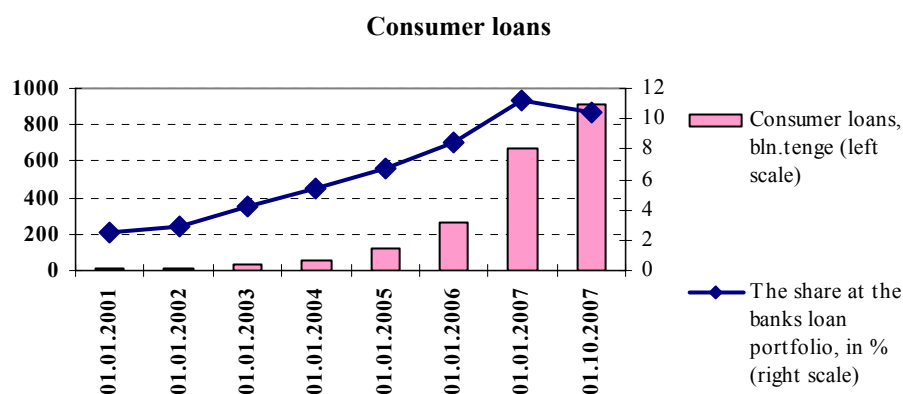
Consumer lending boom is being observed in Kazakhstan at the previous years. During the last 3 years consumer loans amount increased more than 11 times and currently it makes up 10% of the banks credit portfolio (Figure 5.2.8). Appropriate servicing debt by borrowers determined by their financial statements and depends on economic development, as a whole.

Overdue indebtedness on consumer loans increased nearly twice as against April this year, while total overdue indebtedness under credits increased 1.1 times only during the same period. In addition, large share of problem credits in the consumer credit portfolio should be noted (Figure 5.2.9).

In rapid development of the construction sector and increase of real estate prices, real estate remains one of the most preferable lines of banking lending (Figure 5.2.10). That demonstrates higher dependence of the banking sector on the real estate market condition and exposes the system to risks associated with potential destabilization of the real estate market. High concentration of bank credits in the real estate sector is one of the most unfavorable tendencies in the banking sector due to unpredictable development of this sector and its high susceptibility to considerable market price adjustments<sup>47</sup>.

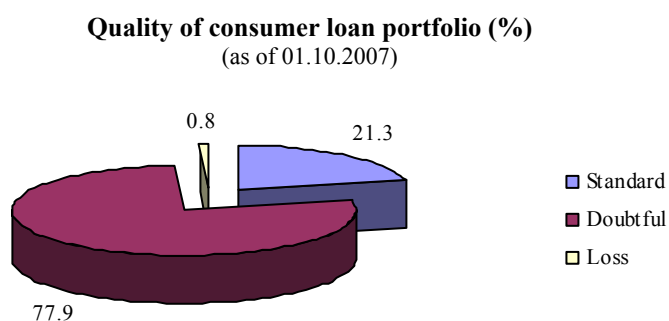
Nevertheless, one of the tendencies of this year is increasing the share of loans not exceeding 70% of collateral value in total mortgage loan portfolio. The reason for such increase is both response by banks to increased risks in this crediting sector and introduction of more stricter prudential regulations (Figure 5.2.11). Further, a number of banks who increase such loans in their portfolios grows, that reflecting a tendency for more conservative “risks appetite” in mortgage lending (Figure 5.2.12).

**Figure 5.2.8**



Source: FSA

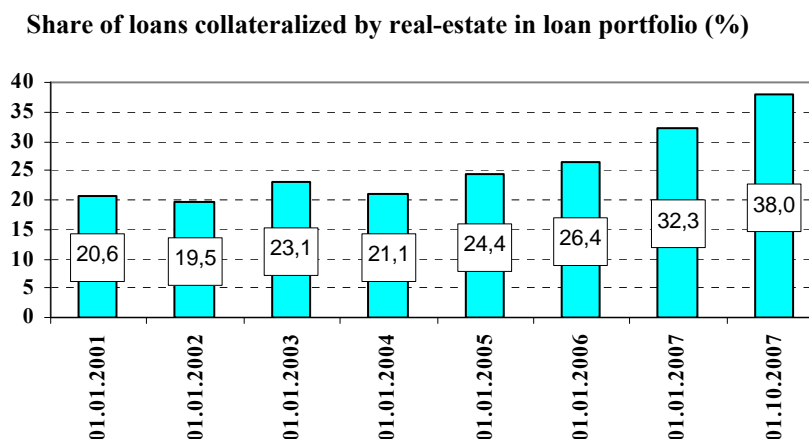
**Figure 5.2.9**



Source: FSA

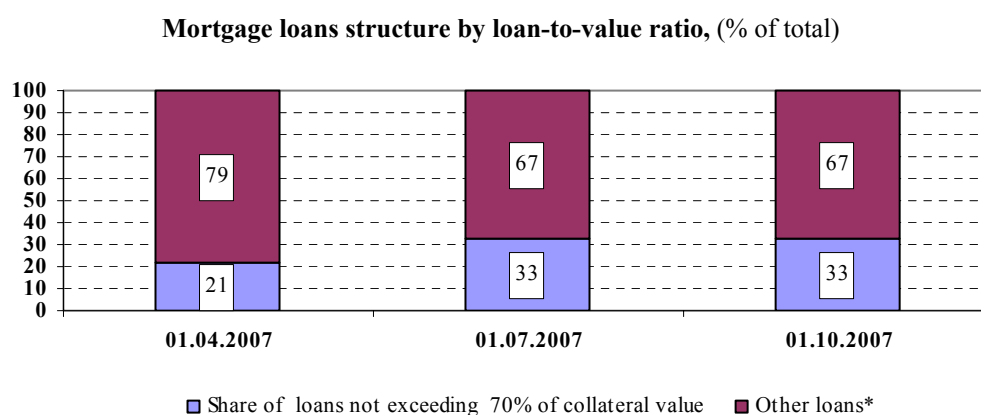
<sup>47</sup> According to international practice, acceptable Property exposure index (Credits secured with real estate/Total Loans) of 40% shows a high credit risk.

Figure 5.2.10



Source: FSA

Figure 5.2.11

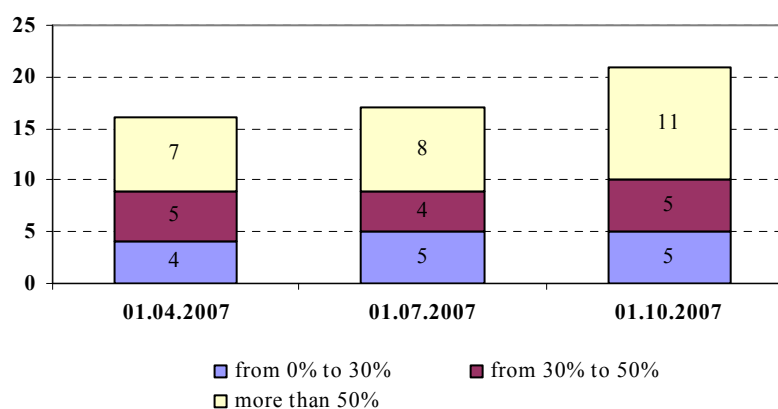


\* The category "other loans" contains loans exceeding 70% of collateral value, including other conditions specified by prudential regulations (loans collateralized by insurance policy and guarantees, etc.)

Source: FSA

Figure 5.2.12

**Banks distribution by share of loans not exceeding 70% of collateral value in bank's loan portfolio\***



\* number of banks with share of such loans in their loan portfolio under certain intervals.

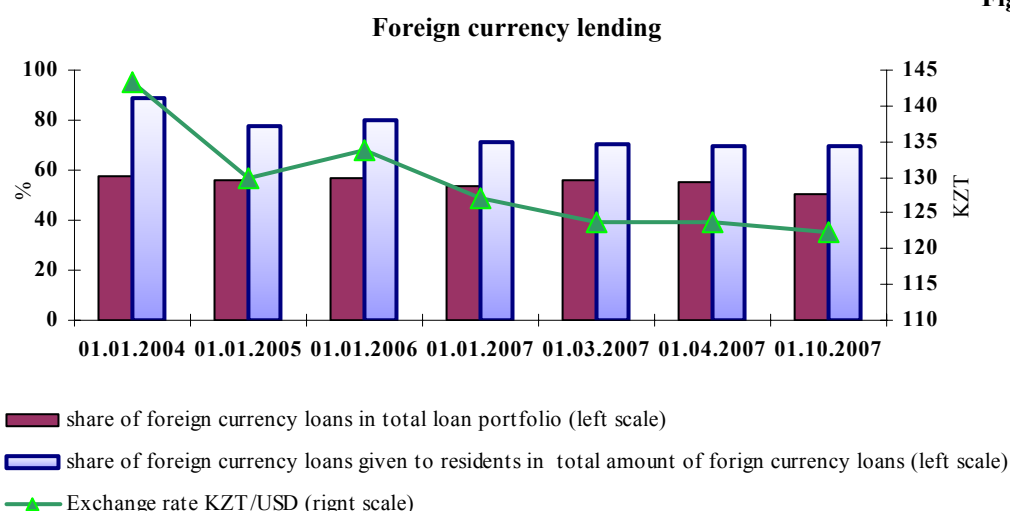
Source: NBRK, FSA

***As before, more than 50% of loans are denominated in foreign currency. Banks may face negative consequences in terms of assets quality in case of any adverse fluctuations of national currency.***

Most of foreign currency loans are used to satisfy domestic demand and the rest were given to non-residents and that, to some extent improves diversification of bank risks exposure to fluctuations of national currency.

Additional problems may arise from mismatch between the currency of income earned by bank clients and the currency of credits given to them. In other words, most of loans are given in foreign currencies, while borrowers' earnings are denominated, mainly, in national currency. As more than 50% of Kazakh banks' loans either are denominated in foreign currencies or tied to US dollars, there is a risk that Tenge depreciation may result in deterioration of banks assets quality (Figure 5.2.13).

**Figure 5.2.13**



Source: FSA, NBRK

***During the reported period the Kazakh banks kept tending to expand to neighboring markets. A major partner of the domestic banks is the Russian Federation with credits of about 30% total loans to non-residents.***

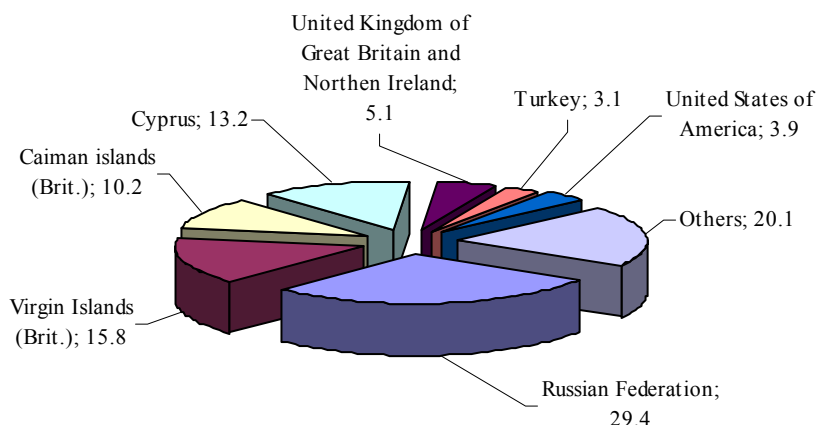
Till recently the banks increased crediting, mainly, at the domestic market. However, during the last 2 or 3 years they are tending to expand their business to neighboring countries. Outlined some years ago when the country reached investment rating and the banking system became more stable and developed, expansion by the domestic banks to neighboring markets is quite a new level of integration into the world financial system. This tendency is particularly important in the light of forthcoming entry of Kazakhstan into the World Trade Organization. Moreover, cross-border lending as any other type of lending bears some risks associated, above all, with deterioration such kind of assets.

Concentration of loans provided to the Russian Federation keeps relatively high. Credits to the Russian Federation amounted to 29.4% on the October 1, 2007 (40.7% on the January 1, 2006). Further, major partners of the domestic banks are Virgin Islands (Britain), Cayman Islands and the United Kingdom of Great Britain and Northern Ireland (Figure 5.2.14).

From the beginning of this year decrease of claims to non-residents in total bank assets is being observed (Figure 5.2.15). From October 2006 to October 2007 loans provided to non-residents as both in total claims to non-residents and in the banking sector of credit portfolio were increasing and that demonstrates growth of risks associated with economic downturn in the partner countries (Figure 5.2.16).

Figure 5.2.14

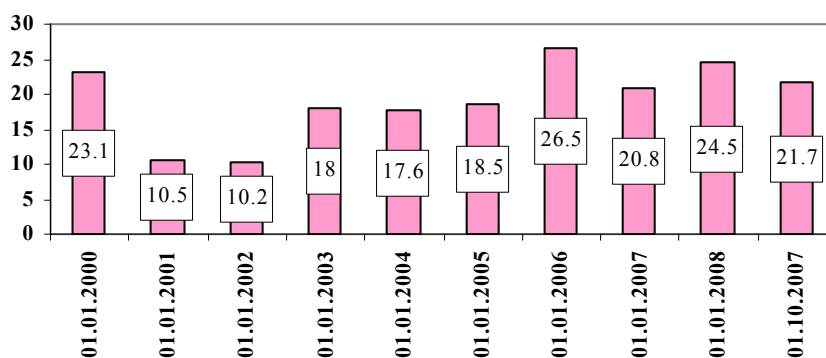
**Distribution of loans to non-residents by country (%)  
as of October 1, 2007**



Source: FSA

Figure 5.2.15

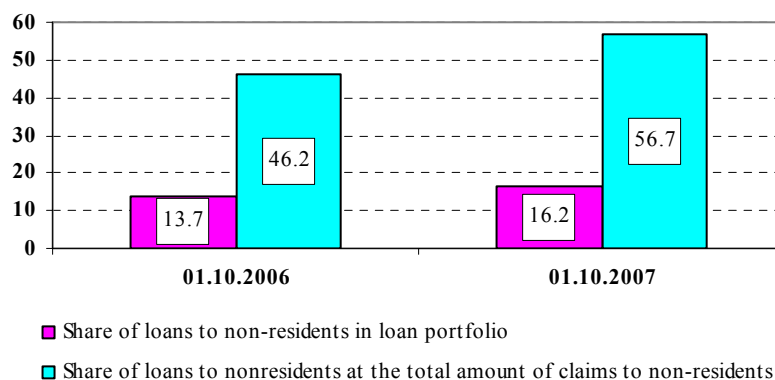
**Share of claims to non-residents in total assets (%)**



Source: FSA

Figure 5.2.16

**Lending to non-residents (%)**



Source: FSA

### 5.3 Market Risks

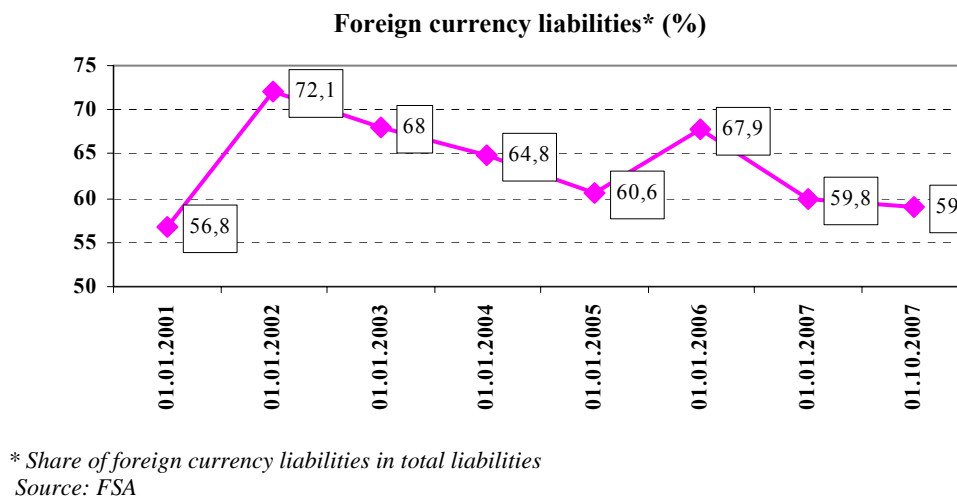
***Implementation of exchange currency liquidity requirements allowed mitigating exposure of the banking sector to exchange risks. Foreign exchange assets cover liabilities denominated in foreign currency.***

During the previous years foreign currency liabilities were exceeding assets denominated in foreign currency. This year a situation inversed and, as for today, the foreign currency assets are exceeding, though slightly, the foreign currency liabilities. That can be due to implementation of

new exchange currency liquidity requirements depended on date of maturity by supervision authorities and, on the other hand, banks activities on foreign currency lending.

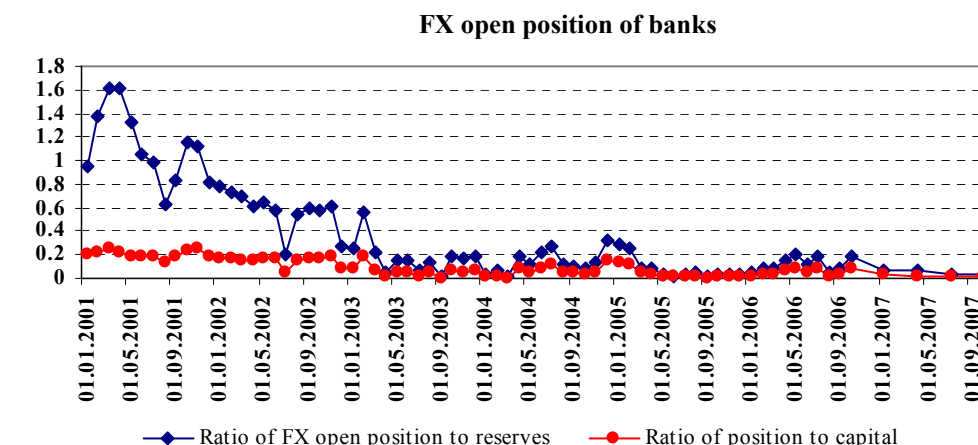
Foreign currency liabilities in total banks liabilities keep tending to decrease being observed from 2006 (Figure 5.3.1).

Figure 5.3.1



Owing to decrease of banks net open positions in foreign exchange to capital and reserves, decline in exposure of the banking system to exchange risks was observed (Figure 5.3.2). On the whole, net open positions in foreign exchange to capital amounted to 0.9%, while requirement value for each bank is 25%. That demonstrates adequate exchange risk assessment by banks.

Figure 5.3.2



Source: FSA

***Short-term assets to short-term liabilities ratio is acceptable, thus decreasing exposure of the banking system to interest rate risks. Sudden increase in interest rates of external liabilities within certain limits will not have any considerable impact on the banking system.***

On the October 1, 2007, one-month assets to one-month liabilities ratio makes 0.9. Ratio of one-to-three month assets to liabilities of the same maturity amounted to 1.0.

As for today, one of the main vulnerability factors for the banking system is fluctuations of world interest rates for funds borrowed by banks.

Expectation for slowdown of economic growth rates or economic collapse, including potential shocks at neighboring markets, may influence bank financial statements. If interest rates increase by 175 basis points, non-compliance of Tier 1 and Tier 2 capital adequacy ratios will be observed for 3 banks.

In 20% of national currency depreciation Tier 1 capital adequacy requirement will not be complied with by 1 bank and 2 banks will not comply with Tier 2 capital adequacy ratio. At the same time, it should be noted that even in case of 50% depreciation Tier 1 capital adequacy



requirement will not be complied with by 3 banks, 3 banks will not comply with Tier 2 capital adequacy ratio.

The analysis of assets and liabilities maturity mismatch shows a negative GAP-position in the nearest future (within 1 year) resulting in rise of demand by banks for resources, including foreign currency (Table 5.3.1).

**Table 5.3.1**  
**Assets and liabilities by maturity buckets**

billion KZT

	Maturity bucket	Assets	Liabilities	A-B	Contingent liabilities	A/(B + D)
1	2	A	B	C	D	E
1	By demand	1 655.0	1 272.8	382.2	74.7	1,23
2	Up to 30 days	2 461.9	2 072.3	389.5	1 347.5	0,72
3	Up to 3 months	3 024.0	3 132.5	-108.6	2 014.8	0,59
4	Up to 6 months	3 603.8	3 951.6	-347.8	2 937.5	0,52
5	Up to 1 year	4 548.1	5 151.3	-603.3	3 768.4	0,51
6	Above 1 year	6 582.7	4 942.7	1 640.0	5 862.2	0,61
	TOTAL:	11 130.8	10 094.1	1 036.7	9 630.5	0,56

Source: FSA

## 5.4. Liquidity Risks and Funding Sources

*This year some banks faced risks associated with funding at international capital markets (monetary and supervision authorities notified of the above risks more than once) and that resulted in pressure upon liquidity of the banking system.*

*Despite the problems of funding, liquidity ratios of the banking system are on excessive level. A number of banks belonging to group of banks with relatively “low” liquid assets are low.*

Dynamics of the banking system liquidity ratios reflecting banks liability coverage demonstrates decrease in values from the beginning of this year. Nevertheless, liquidity of the banking system keeps in excess. So, on the October 1, 2007, current liquidity ratio amounted to 1.36, while minimum requirement value for each bank is 0.3, and a short-term liquidity ratio was 0.99 at the minimum requirement value of 0.5. In turn, historically (for a period from the beginning of 2005) a current liquidity coefficient is similar to that of the last year reference period and higher than dynamics of values for 2005 (Figure 5.4.1).

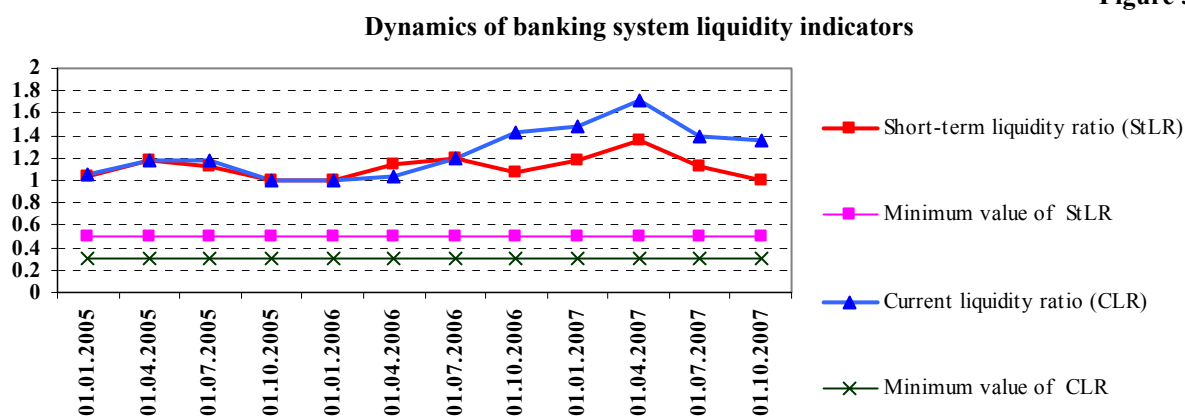
It should be noted that decreasing of liquid assets share in total banks assets from the beginning of this year (dynamics of values from January to August 2007) took shape even before the problems of foreign markets. Moreover, positive funding volatility values<sup>48</sup> demonstrate that, on the whole, banking system is funded, to a lesser extent, out of the client deposit base and decrease of its values in Q3 demonstrates contraction of other funding sources as a result of the latest tendencies at world capital markets (Figure 5.4.2).

Furthermore, structural changes of highly liquid assets show increase of resources in correspondent accounts and deposits in National Bank, and decrease of cash money and precious metals share (Figure 5.4.3).

At that, only few banks pertain to group interval with relatively “high” liquidity risks (liquid assets share less than 15%). Most of the banks belong to group interval with share of liquid assets in bank’s assets from 15 to 30 percents. Moreover, a number of banks with considerable share of liquid assets increase (Figure 5.4.4).

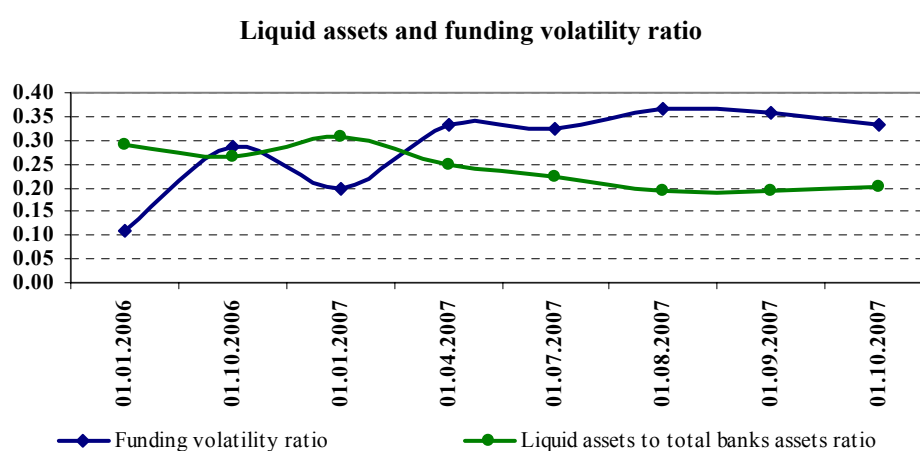
<sup>48</sup> Funding volatility ratio is calculated as the ratio of deposit base net of liquid assets to total assets net of liquid assets. The value of the ratio lower zero means that deposit base is mostly covered by liquid assets, while the value over zero shows lower degree of coverage. In turn this ratio is depended from the value of denominator. For example, relatively large value of denominator shows essential part of long-term assets and reflects the fact of the significant influence of other sources of funding (including external borrowings).

Figure 5.4.1



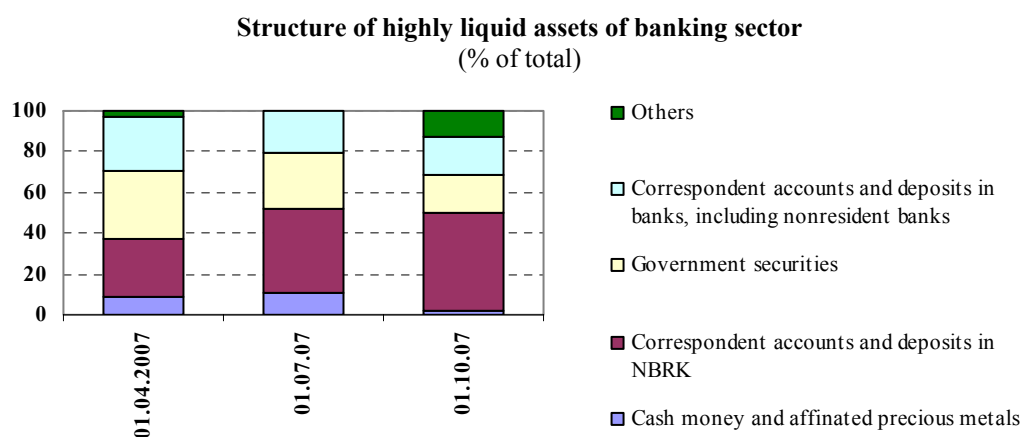
Source: FSA

Figure 5.4.2



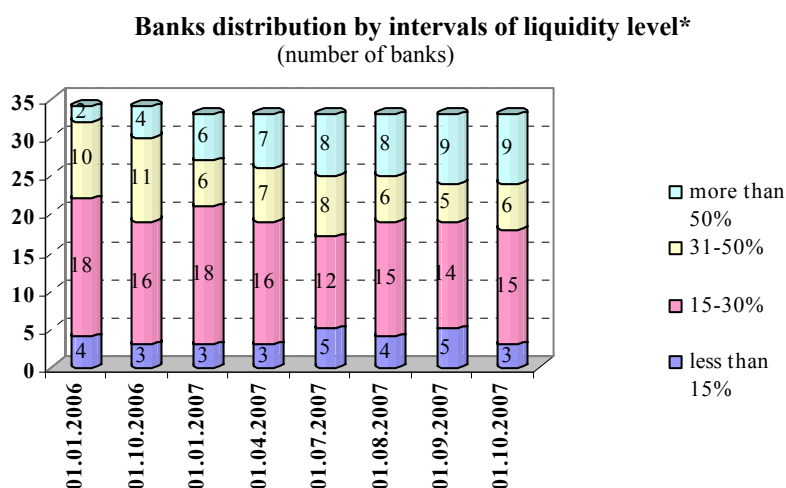
Source: NBRK on basis of data from FSA. Liquid assets include money, demand deposits and other short-term assets, trade securities and volume of reverse REPO with securities.

Figure 5.4.3



Source: FSA

Figure 5.4.4



\* by share of liquid assets in bank's assets

Source: NBRK based on FSA data

*The deposit base of banks is stable and not subject to structural changes. During the reporting period, resident deposits in aggregate liabilities of the banking system decreased as a result of other funding sources for credit activity by banks. Taking into account influence of the situation at world capital markets, we expect funding policy activation on the domestic market, including policy intended to increase in the deposit base.*

During the last years the banking sector of the Republic of Kazakhstan was developing in conditions of economic growth and that is a growth factor for household deposits and deposits by real sector enterprises.

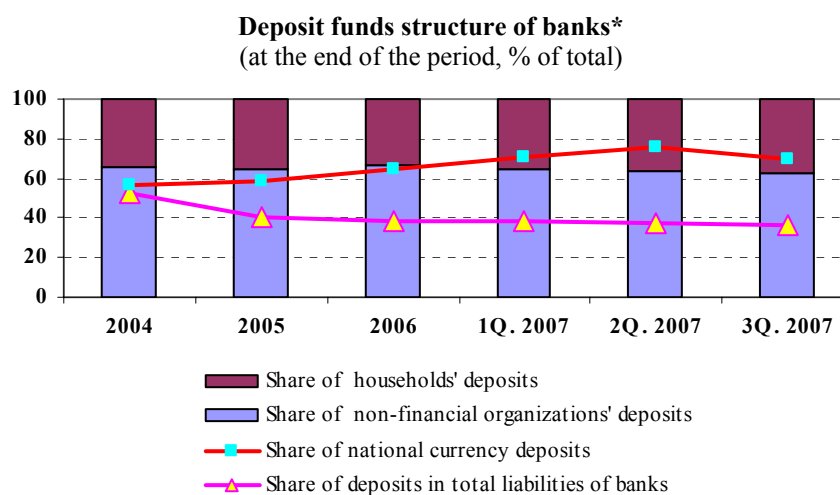
Despite slight decrease in household deposits (by residents) in Q3 this year, dynamics of deposits is positive from the beginning of the year and household deposits in deposit base structure tend to increase (from 33.1% to 37.8%). Moreover, in August 2007 agiotage at the secondary currency market was a factor of pressure to decrease of national currency deposits share. Nevertheless, historically this factor tends to considerable increase caused by a long-term trend of national currency strengthening (Figure 5.4.5). Such a tendency in long-term outlook has a positive effect on compliance of assets and liabilities currency structures and promotes decrease of exchange risks.

Steadiness of the deposit structure reflects keeping confidence of people to the banking system. Thus, during this year no drastic changes were observed in the retail deposit structure and fixed-term deposits prevail amounting to 86.6% of total household deposits. However, as a result of the above factors, national and foreign currencies deposits proportion changed for increase of the latter (Figure 5.4.6).

Specific weight of fixed-term deposits to the amount of 700 thousand KZT (by number of accounts), essentially did not change during Q3 of this year, while share of such deposits volume in total household fixed-term deposits decreased slightly. It should be noted that deposits of this category (in terms of amounts) are of secondary importance in structural formation of the household fixed-term deposits; nevertheless they are prevailing in terms of number (88.5% of total number of accounts) and are secured by deposit insurance system (Figure 5.4.7).

In Q3 this year, decrease of average size of deposits for most of deposit buckets was observed (Table 5.4.1)

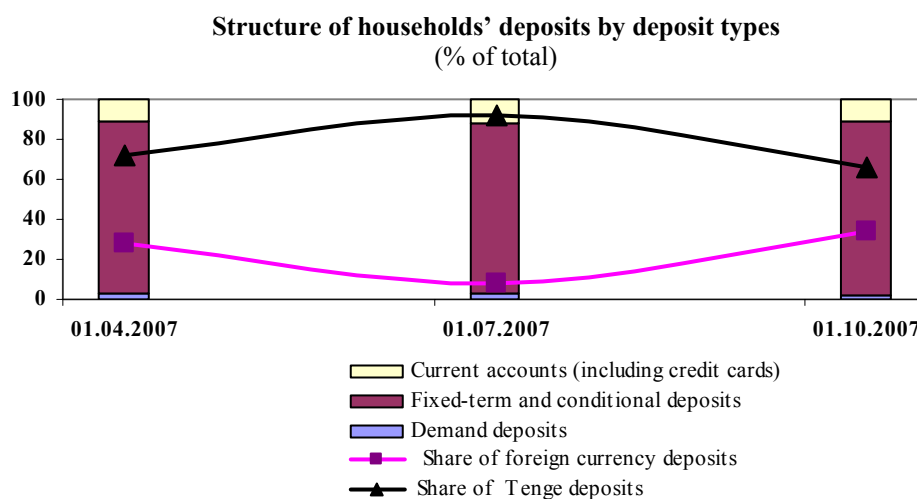
Figure 5.4.5



\* excluding non-residents

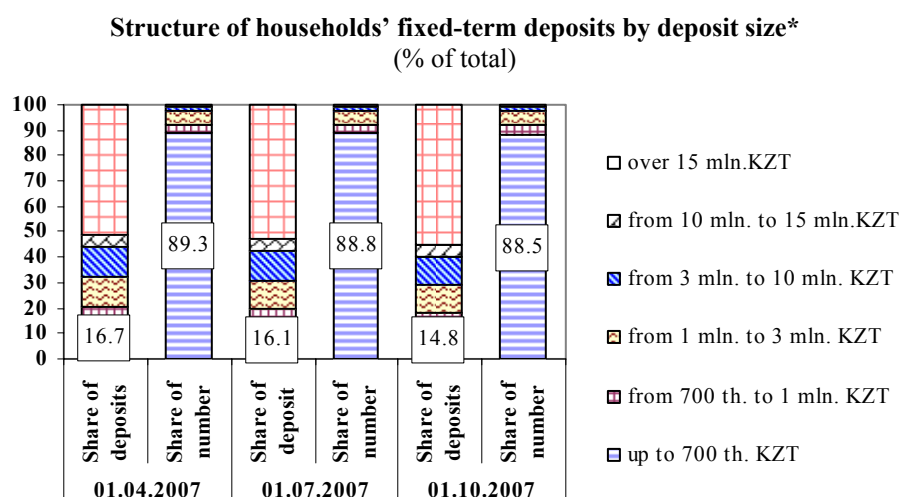
Source: NBRK, FSA

Figure 5.4.6



Source: NBRK, KDIF, FSA

Figure 5.4.7



\* share of fixed-term deposits amount (number of accounts) belonging to certain deposit group according to deposit size

Source: NBRK, KDIF

Table 5.4.1

## Average size of fixed-term deposits in certain deposit group

thousand KZT

	01.04.07	01.07.07	01.10.07
up to 700 thousand KZT	132.6	141.4	135.24
from 700 thousand KZT to 1 million KZT	829.1	824.4	804.79
from 1 million KZT to 3 million KZT	1 600.7	1 602.5	1 593.78
from 3 million KZT to 10 million KZT	5 216.1	5 175.8	5 153.89
from 10 million KZT to 15 million KZT	12 356.9	12 104.9	12 176.90
above 15 million KZT	79 695.4	76 469.6	85 995.15
Average deposit amount	709.2	779.0	807.65

Source: NBRK, KDIF

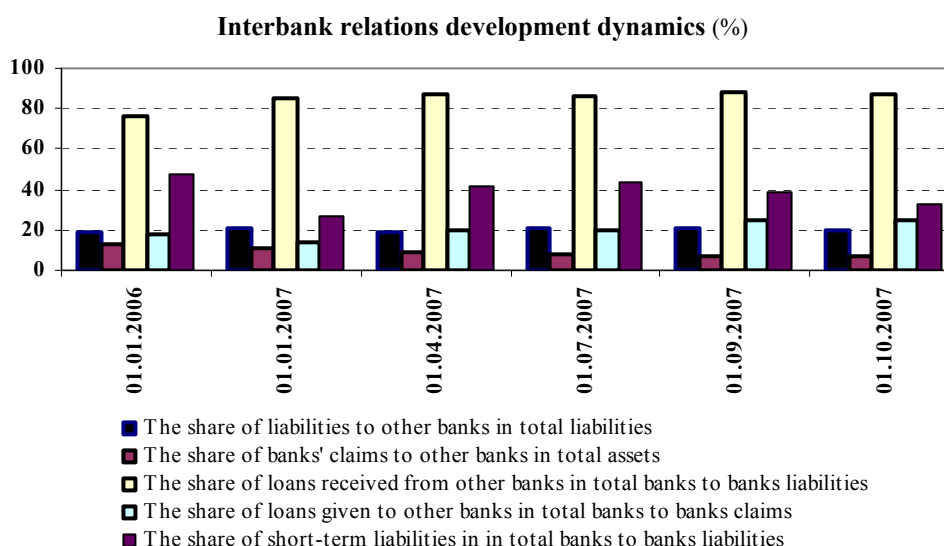
*Stability and no drastic changes are characteristic for the interbank relations and have favourable influence on liquidity of the banking system. Moreover, it depends little on funding through interbank financing.*

As for liquidity management, the interbank credit market is of great importance.

During the reported period, the structure of demand and liabilities of banks to other banks keeps stable without any abrupt fluctuations. No abrupt changes in specific weight of the interbank liabilities demonstrate constancy and stability of this funding and adequate liquidity maintenance source (Figure 5.4.8).

Thus, during the considered period banks liabilities to other banks in total liabilities are amounted to 18-20%. Short-term liabilities in total banks liabilities to other banks decreased from 42% to 33% as compare of the beginning of the year. Such dynamics of the factor defines “contraction” of the short-term interbank money market in Q3 2007. Further, as of the beginning of the year and July 1, 2007, it was “slack” at the interbank borrowing market, since no interbank loans are shown in the balance sheet structure.

Figure 5.4.8



Source: FSA

Along with clients' money, the most important source for Kazakh banks is funding on international market by borrowing from foreign financial corporations and by securities issue. In addition, banks are borrowing funds actively at international markets through syndicated loans and Eurobonds issues. Liabilities to non-residents in total banks liabilities keep increasing, thus tending increase of dependence of domestic banking system on foreign financing and intense of exposure to external shocks (Table 5.4.2). Borrowings, including loans provided by international organizations,

and deposits of special purpose vehicles prevail in the structure of external liabilities of the banking sector (Figure 5.4.9).

**Table 5.4.2**

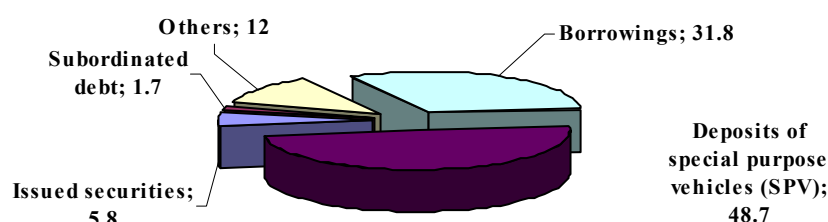
**Liabilities to non-residents in total liabilities of banks (%)**

	01.01.2003	01.01.2004	01.01.2005	01.01.2006	01.01.2007	01.10.2007
Liabilities to non-residents, billion KZT	279,2	570,9	989,6	2 066,8	4 129,6	5 391, 2
Total liabilities of banks, billion KZT	1 010,4	1 491,3	2 416,2	4 073,9	8 001, 6	10 129, 6
Share of liabilities to non-residents in total liabilities of banks, %	27,63	38,28	40,96	50,73	51,6	53,2

Source: FSA

**Figure 5.4.9**

**Structure of banks' liabilities to non-residents as of 01.10.2007 (%)**



Source: FSA

## 5.5 Profitability and Capital Adequacy

*The banking sector profitability and capital adequacy factors are positive. At the same time, it's expected that interest rate fluctuations at world capital markets and deterioration of borrowing conditions may affect the banking sector's profitability volume by the end of year.*

*This year banks distribution within profitability groups has not changed greatly as compared to the same period of previous year.*

On the October 1, 2007, net income after tax received by banks amounted to 184.4 billion KZT, having increased twice as compared with the same period of last year.

The largest part of the interest incomes structure contains interest income from clients lending (89.1% or 790.2 billion KZT), and in the interest expenses structure, interest expenses on clients demands (62.9% or 295.8 billion KZT). Net interest income before tax to total assets (ROA) ratio was equal to 1.61% (on the 01.10.06 - 1.54%); net interest income before tax to equity capital (ROE) ratio was equal to 16.54% (on the 01.10.06, 16.16%) (Table 5.5.1).

ROA dynamics has no major fluctuations whereas a ROE index is subjected to fluctuations (Figure 5.5.1).

Decrease in interest margin, to a greater extent, relates to increase in competitiveness and, as a consequence, decline of loans interest rates (Figure 5.5.2).

It should be noted that there are significant number of banks with profitability much lower than average value for the banking system and not exceeding 6.6% in considering quartile distribution of banks based on ROE indicator,. It could be one of the risk sources for both the banks and the banking system, on the whole, as a result of interbank influence (Figure 5.5.3).

### Banking sector profitability

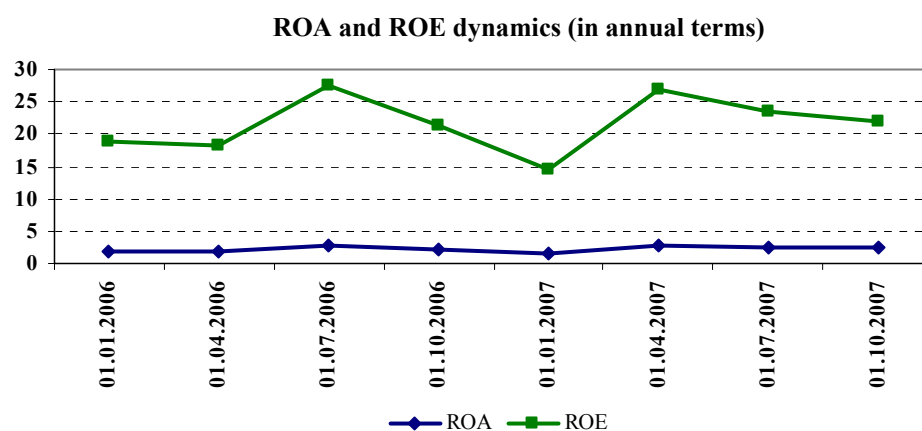
Table 5.5.1

billion KZT

	01.10.06	01.10.07	Change (+;-), %
Interest income	422,4	886,7	2.1 times
Interest expenses	230,4	469,9	2.0 times
<b>Net interest income</b>	<b>192,0</b>	<b>416,8</b>	<b>2.2 times</b>
Noninterest income	189,4	382,7	2.0 times
Noninterest expense	281,3	578	2.0 times
<b>Net noninterest income</b>	<b>-91,9</b>	<b>-195,3</b>	<b>2.1 times</b>
<b>Extraordinary items</b>	<b>0,9</b>	<b>0,2</b>	<b>-65,32</b>
Net income before tax	101	221,7	2.2 times
Income tax expenses	12,9	37,3	2.9 times
Net income after tax	88,1	184,4	2.1 times

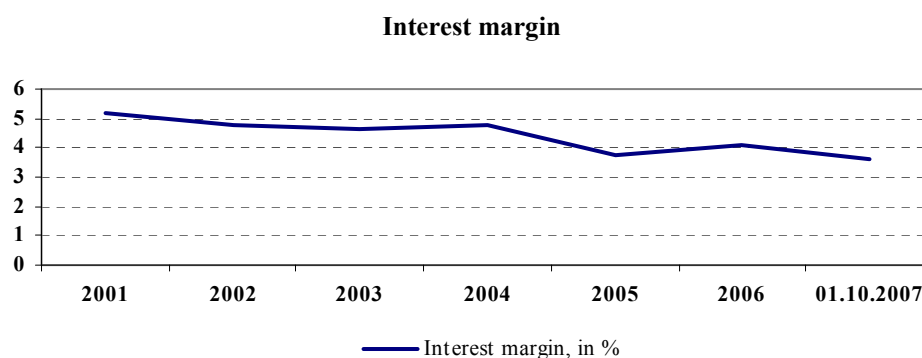
Source: FSA

Figure 5.5.1



Source: FSA

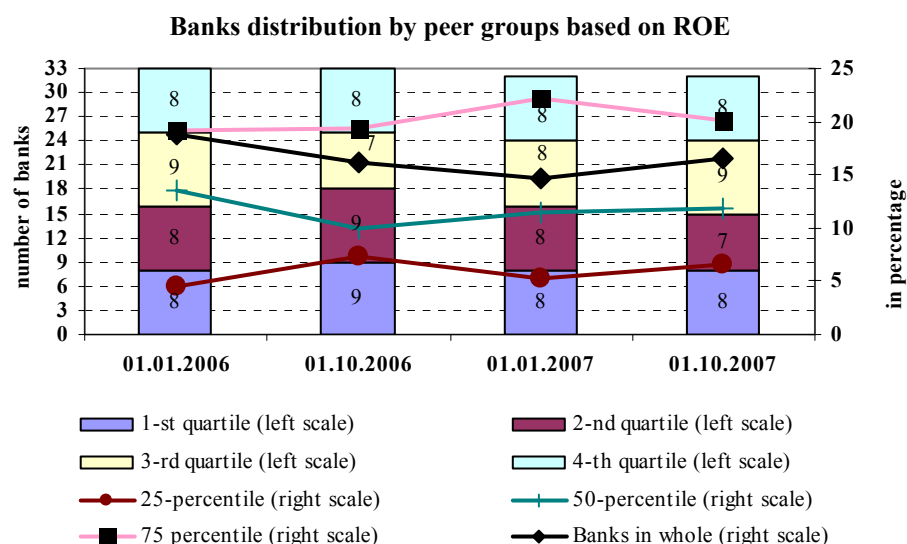
Figure 5.5.2



Source: FSA



Figure 5.5.3



Source: NBRK, FSA

From the beginning of this year total banks regulatory capital has increased by 517.0 billion KZT (44.2%) and amounted to 1,685.6 billion KZT on the October 1, 2007. At that, Tier 1 capital increased by 49.9% and amounted to 1,223.7 billion KZT and Tier 2 capital by 35.2% or to 521.2 billion KZT. Moreover, from the beginning of this year banks balance sheet capital has increased from 870.4 billion KZT by 469.6 billion KZT (53.9%) and amounted to 1,340.0 billion KZT as of the reporting date (Table 5.5.2). Major factors of capital growth are net surplus, subordinated debts and authorized capital stock.

On the October 1, 2007, capital adequacy indicators of the banking sector relatively did not change much (Table 5.5.4).

Table 5.5.3

#### Structure of total regulatory capital in banking system

Description	01.01.07	01.10.07	Growth, %
Tier 1 capital	816,5	1 223,7	49,9
Authorized capital stock	593,6	892,6	50,4
Additional capital	4,0	3,7	-7,5
Undivided net income of previous years	131,6	199,3	51,4
Tier 2 capital	385,4	521,2	35,2
Undivided net income	101,3	184,4	82,0
Subordinated debt	368,0	434,4	18,0
Tier 3 capital	1,5	1,2	-20,0
Total regulatory capital	1 168,6	1 685,6	44,2

Source: FSA

Table 5.5.4

#### Capital adequacy indicators

	01.01.07	01.10.07
Tier 1 capital to risk weighted assets (k1)	0,09	0,10
Regulatory capital to risk weighted assets(k2)	0,15	0,14
Regulatory capital to loan portfolio	0,20	0,19
Regulatory capital to created provisions	3,91	3,51
Regulatory capital to doubtful loans	0,43	0,33
Regulatory capital to loss loans	12,43	16,21

Source: FSA

## 6. Other Financial Institutions

### 6.1 Insurance Sector

#### 6.1.1 Situation on Insurance Market

*During the past period the insurance market of Kazakhstan kept growing rapidly due to high demand for insurance products from corporate sector, growth of compulsory insurance and increase in mortgage crediting.*

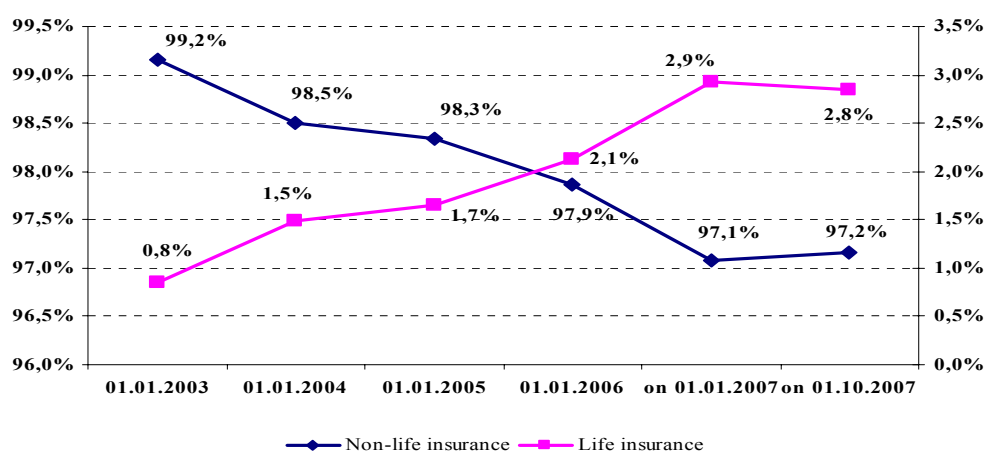
As for today, despite the fact that the insurance market has the least share in the financial sector as compared to pension and banking sectors (in terms of assets, the insurance sector is 6 times less than the pension sector and 63 times than the banking sector), it grows rapidly in terms of its major indices and experiences increasing competitiveness due to some amendments to Insurance Law and foreign players entering the market.

Key factors of the insurance market are assets of insurance companies, equity capital, insurance reserves, which increased 2.5 times on average. Insurance premiums written exceeded 120 bln. KZT during 9 months of 2007. The biggest share in the insurance premium structure falls to non-life insurance – 97.2% (Figure 6.1.1.1). Despite the low share in insurance premiums written, life insurance has positive growth dynamics on the whole.

Aggregate assets of the insurance sector constituted 1.36% of GDP, insurance premiums - 0.83%, equity capital - 0.93%, that is much less than insurance values of developed countries with the insurance sector of 8 to 12% of GDP.

Figure 6.1.1.1

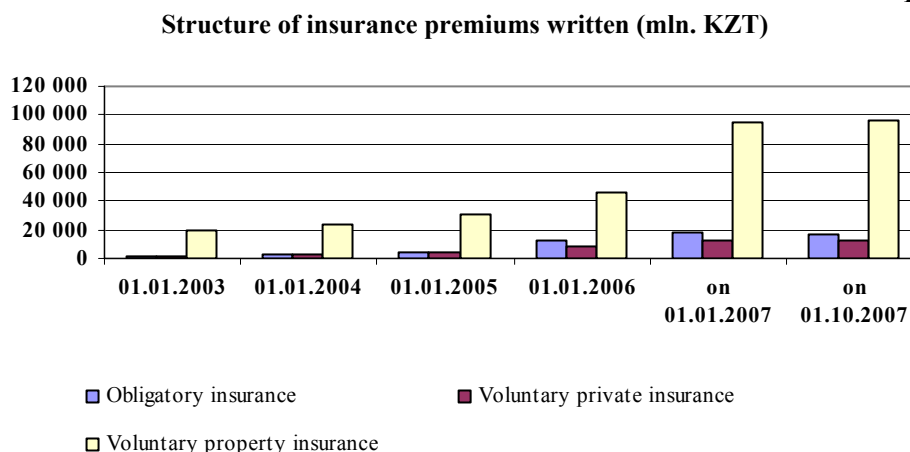
Distribution of insurance premiums written



Source: FSA

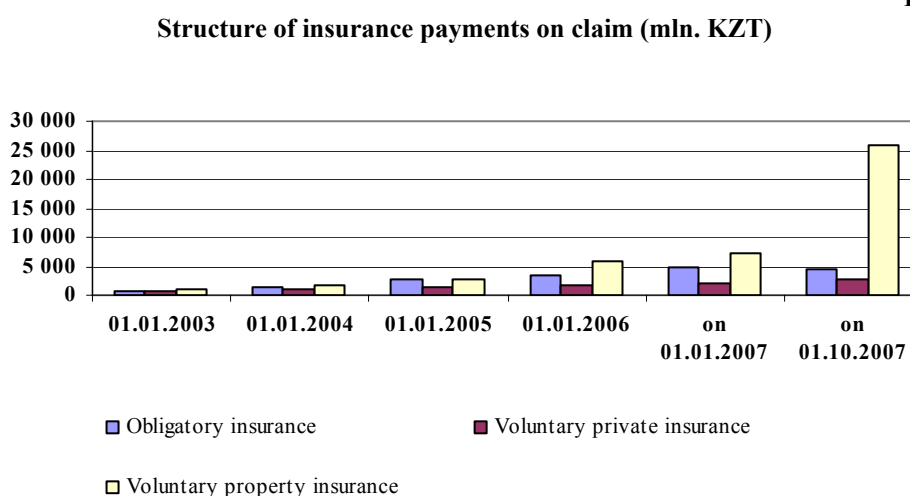
As a result of increase in insurance premiums written with the biggest premium value for property insurance (Figure 6.1.1.2), insurance payments on claim increased significantly: for 9 months of 2007 insurance payments on claim have reached 33.2 billion KZT (57.5% increase compared to the beginning of the year) (Figure 6.1.1.3). Most of the payments referred to insurance against financial losses, property insurance, vehicle insurance, health insurance and motor-third-party liability insurance.

Figure 6.1.1.2



Source: FSA

Figure 6.1.1.3



Source: FSA

There is no threat to financial stability of the insurance sector despite the fact that there has been a considerable growth of insurance payments on claim. Growth of high-liquidity assets and further capitalization of insurance companies have a positive tendency. Money, bank deposits, state-issued securities and securities of non-government issuers comprise the value of high-liquidity assets. Their share in total assets increased up to 80.2% and equity capital share - up to 61.1%.

At the same time major indicators of market concentration level slightly changed. The assets' share of 5 largest insurers constituted 52.5%, the equity capital's share - 56.5%, insurance premiums' share - 52.7%. Compared to the beginning of 2005, some increase in competitiveness is observed on the insurance market. Insurance payments on claim changed significantly: the share of the 5 largest insurers constituted 79% in October of 2007; that is 28% increase since the beginning of 2007.

However, risks associated with transfer of banks' risks to affiliated insurance companies, which provide insurance to parental banks and cover their credit risks, still persist. In case of banks' credit portfolio deterioration accompanied with increase of borrowers' defaults, credit risk can negatively affect the insurance sector.

### 6.1.2 Reinsurance

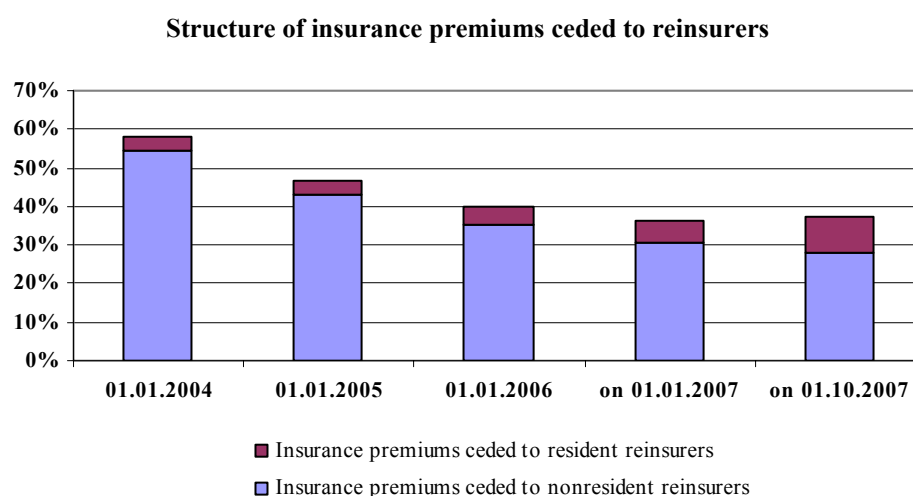
*In view of growth of the insurance market capitalization and increase in the volume of insurance premiums written, a tendency of insurers' retention growth is remaining. This process is observed together with decrease in insurance premiums ceded to non-residents for reinsurance.*

One of the main reasons for reinsurance is protection of insurers' capital base from significant deviations of expected losses. Reinsurance has essential advantages for insurers. It helps to reduce capital burden and manage risks and capital effectively; it also provides access to reinsurers' achievements and services, particularly in the field of new products development, pricing and underwriting.

For 9 months of 2007 the reinsurance indicator reached 28.0% (Figure 6.1.2.1), which is almost 2 times less than in 2004, where it marked 54.2%. At the same time, the growth in absolute terms is observed: the insurance premiums ceded reached 46.2 bln. KZT in October of 2007, including 34.8 bln. KZT ceded to non-residents (Figure 6.1.2.2).

Cooperation of insurers on the domestic market is insignificant compared to the gross insurance premiums written, but it has positive tendency to grow. The share of insurance premiums ceded to residents increased more than 2 times compared to 2004, having grown to 9.2% of gross insurance premiums written during 9 months of 2007.

**Figure 6.1.2.1**

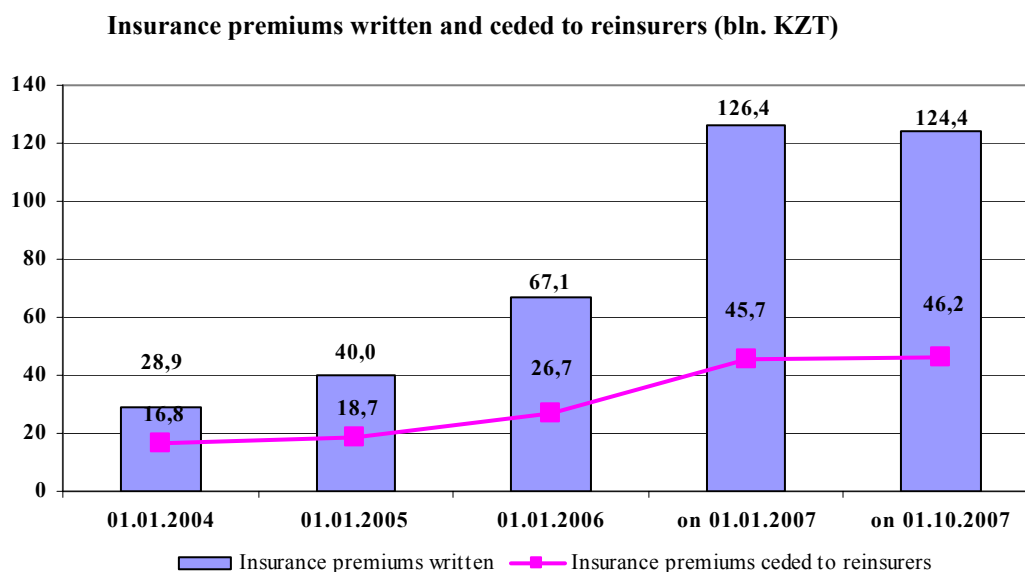


Source: FSA

Arrangement of insurance pools<sup>49</sup> can be an alternative to reinsurance on the insurance market, which can reduce high operating costs and burden on the insurance portfolio peculiar to an independent insurer. Moreover, reinsurance practice shows that ceding risks to big or some small companies is not always efficient as sometimes reinsurers refuse to consider some types of risks, because of their uncertainty and potentially high losses. If risks are accepted by the insurance pool, they are evenly distributed between its members, thus creating a balanced portfolio. When an insurance event occurs, insurance payments on claim do not deteriorate the financial indicators of insurers.

<sup>49</sup> Presently 1 insurance pool is operating, which includes 5 insurance companies. The insurance pool was registered by the Agency for Regulation and Supervision of Financial Market and Financial Organizations on 07.02.2007. Activities of insurance pools are governed by the Law on Mutual Insurance dated 05.06.2006.

Figure 6.1.2.2

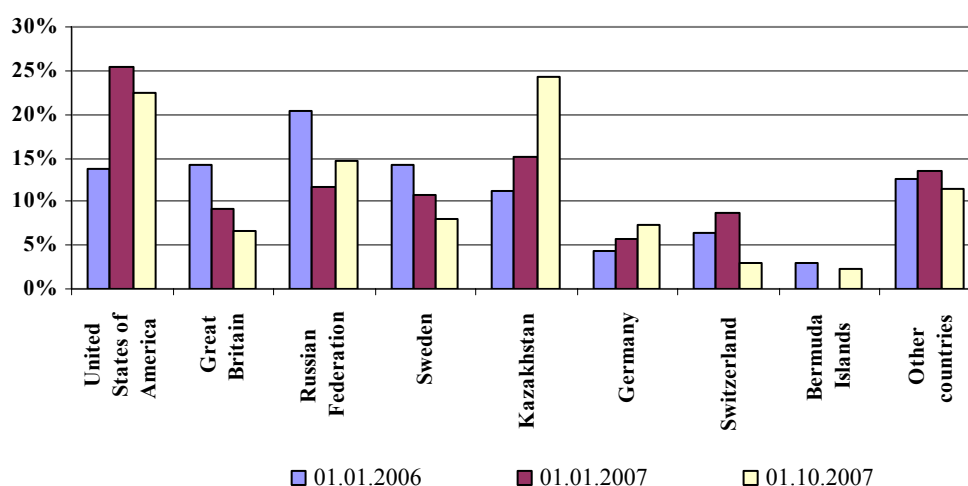


Source: FSA

The biggest share of insurance premiums ceded to reinsurers fell to the following countries: USA – 22.4%, Russia – 14.7%, Sweden – 8.1%, Germany – 7.3% (Figure 6.1.2.3). It has to be pointed out that the role of domestic insurance companies in reinsurance within Kazakhstan's insurance market is increasing. Their share increased from 11.3% in 2006 to 24.3% in October of 2007. But for all that the share of incoming reinsurance from non-residents is low in gross insurance premiums and it constitutes 2.2%. Owing to insufficient capitalization, absence of ratings from key rating agencies<sup>50</sup> and non-compliance with standards of the global reinsurance market, the domestic insurance market is not considered as a potential region for ceding different risks to Kazakh insurance companies.

Figure 6.1.2.3

**Structure of insurance premiums ceded to reinsurers (per countries)**



Source: FSA

<sup>50</sup> Only 1 insurer out of 40 licensed insurance organizations was assigned a rating by an international rating agency (A.M.Best). The company has a leading stand on the reinsurance market, including reinsurance of non-residents' risks.

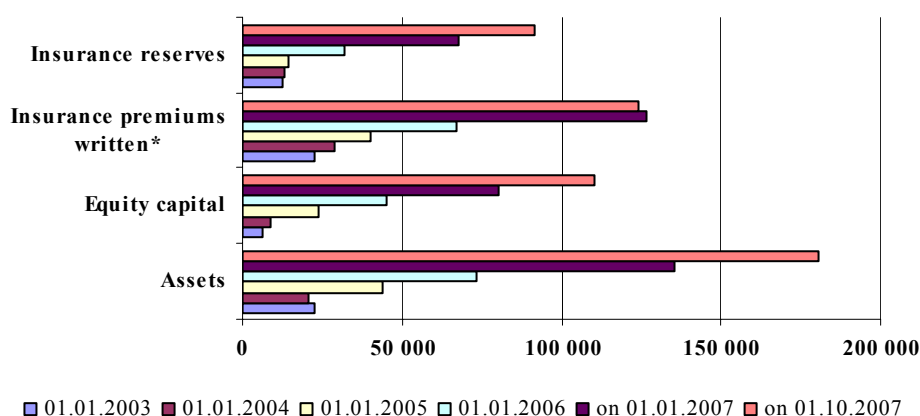
### 6.1.3 Profitability of Insurance Sector

*Insurance business generates profit from insurance and investment activity. Along with an increase of gross insurance premiums and growth of profitability from investment activity, insurance payments on claim and market loss ratio increased as well.*

The insurance market of Kazakhstan is rapidly growing and that is confirmed with the increase in gross insurance premiums, assets and equity capital (Figure 6.1.3.1). Insurance sector capacity did not exhaust its potential: a big portion of the premiums written falls to corporate insurance (insurance of industrial, oil, aviation and property risks), while retail insurance covers a small share in gross insurance premiums written (it does not exceed 1% in the portfolio of the insurance company). The share of compulsory insurance decreased to 12.9% in October of 2007, as compared to the beginning of 2006 when it was 19.3%.

Figure 6.1.3.1

Major indices of Kazakhstan insurance market (mln. KZT)

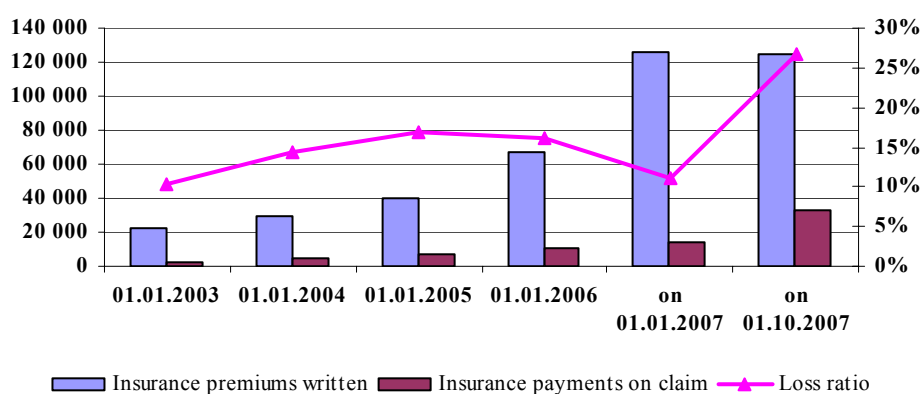


Source: FSA

In light of high growth rate of the insurance market on the whole, and insurance transactions in particular, insurance payments on claim increased more than 3.5 times in October 2007, as compared to the same period of the previous year (Figure 6.1.3.2).

Figure 6.1.3.2

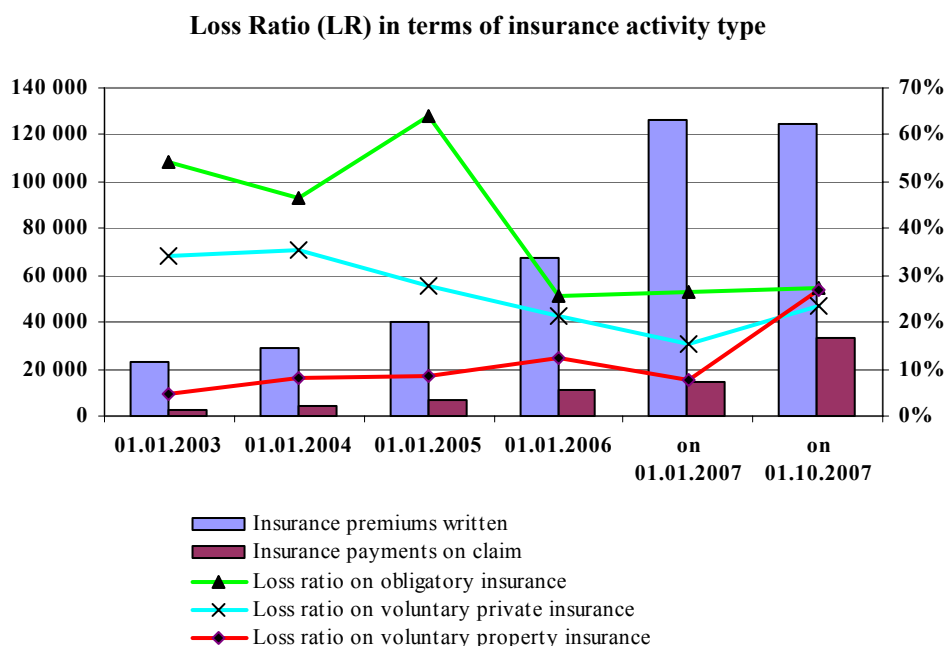
Loss Ratio of insurance market



Source: FSA

A market loss ratio increased more than 2 times. Loss ratio values in terms of insurance activity type reached 23-27% and that complies with its market value on the whole. The loss ratio of voluntary property insurance showed the biggest increase, in other words its value increased from 7.5% at the beginning of the year to 27.0% in October of 2007 (Figure 6.1.3.3).

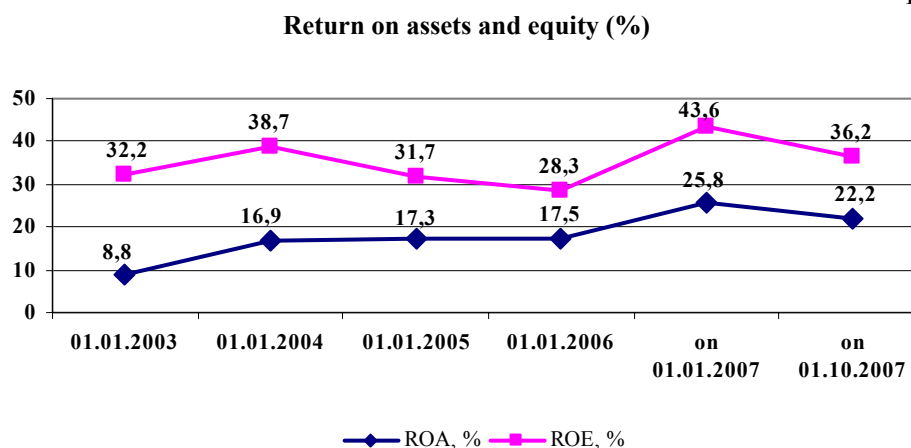
Figure 6.1.3.3



Source: FSA

Although there has been some increase in losses of insurance activity, assets and capital profitability indices are at sufficiently high level now to ensure profits for insurance companies (Figure 6.1.3.4). In the return structure of insurers the main activity covers 90% of the aggregate return. On the developed markets the situation is completely different, where a combined loss ratio is widely used to reflect the results of activity. The loss ratio can reach up to 85-100% and quite often exceed the value of insurance premiums written (Figure 6.1.3.5.). In other words, the main activity of insurers can be zero-result or even negative, while a positive outcome is possible owing to investment activity. For most of the Kazakh insurance companies investment activity is a minor source of revenue.

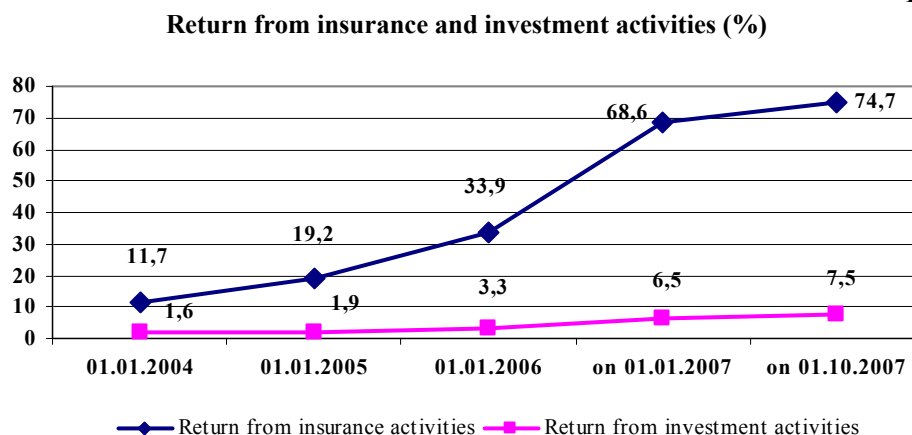
Figure 6.1.3.4



Source: FSA



Figure 6.1.3.5

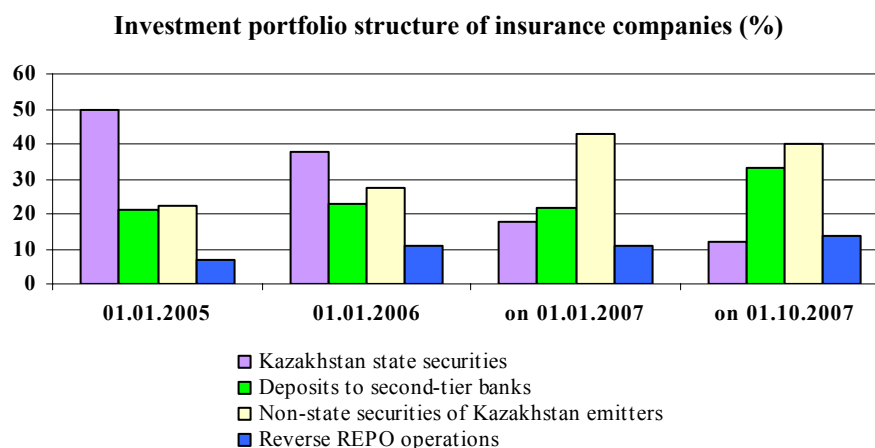


Source: FSA

The structure of the investment portfolio of insurance companies underwent some changes. In particular, the share of government securities (hereinafter referred to as GS) tends steadily to decrease, whereas the share of deposits to second-tier banks and non-government securities has kept growing and constituted 73.6% of the investment portfolio in October of 2007 (Figure 6.1.3.6). The reason for that was an abrogation of requirements for obligatory placement of a certain part of assets into GS. That resulted in ability to invest these assets into more profitable instruments of the financial market. On the other hand, the investment portfolio structure of insurance companies demonstrates increasing dependence from banks. Despite the minor role of investment revenue, it increases in total return of insurers. Moreover, the investment portfolio consists of 84.8% of the insurance sector assets.

Risk appetite increases in accordance with investment activity growth, which in turn results in rise of investment risks, requiring an effective risk management system to be introduced in insurance companies.

Figure 6.1.3.6



Source: FSA

On the whole, the investment policy of both non-life and life insurance companies contributed to maintenance of financial stability on the insurance market and met the requirements of the regulation and supervision bodies.

It is essential to further capitalize insurance companies, make use of risk diversification instruments, introduce enhancement mechanism of compulsory insurance, and induce voluntary insurance in order to minimize risks associated with an upsurge of own retention, unprofitable insurance activity, and investment of assets into financial instruments.

## 6.2 Accumulative Pension System

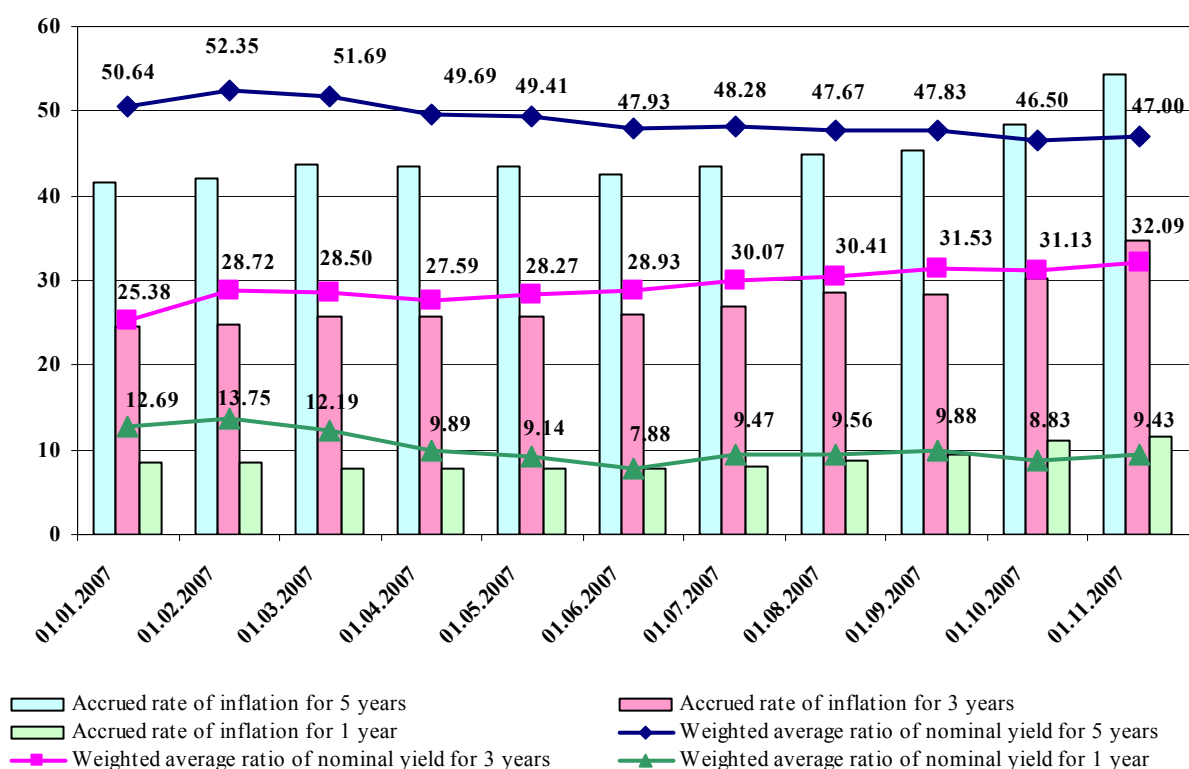
*Pension assets return of APF decreased in 2007. Foreign currency share in the investment portfolio of pension funds increased. Investment risks of pension assets increased as well. A level of voluntary pension contributions does not comply with the existing situation on the labor market.*

14 accumulative pension funds with 59 regional branches and 60 representatives operated on the Kazakh pension system market to the day of 01.10.2007.

Pension fund assets increased by 11% compared to September 2006, while current liabilities decreased by 15%. At the end of October 2007 the share of pension assets in GDP constituted 8.89%.

Return ratio of pension funds (K2) decreased by almost 3.26% since the beginning of 2007, while the inflation level increased by 2.73% for a period from August to October contributing to 12.7% increase since January 2007. Thus, the accrued annual level of inflation exceeded an average weighted nominal return ratio by 2.1%. In addition, the accrued level of inflation for 5 year period exceeded the nominal return ratio by 7.4% (Figure 6.2.1).

Figure 6.2.1  
Average weighted nominal return ratio of APF and accumulated inflation, %



Source: FSA

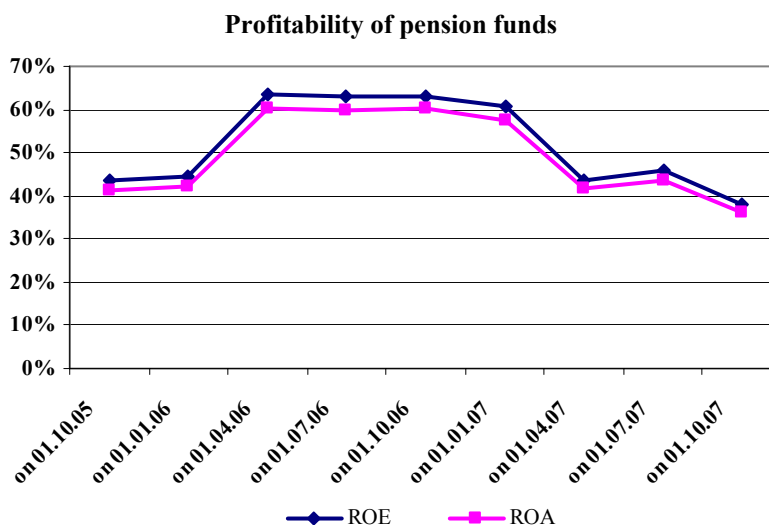
Profitability of pension funds (ROA<sup>51</sup> and ROE<sup>52</sup> ratios) increased by nearly 17% for a period of 2<sup>nd</sup> half of 2005 – 2007, but from February to November of 2007 these indices decreased by 22% (Figure 6.2.2) because of decrease of net investment return by 1.6 times.

<sup>51</sup> ROA (return on assets) – pre-tax net return (loss) to average aggregate assets ratio.

<sup>52</sup> ROE (return on equity) – pre-tax net return (loss) to average equity ratio.

It has to be pointed out that investment risks of pension assets increased insignificantly since the beginning of 2007. In other words credit risk increased from 69.5% to 71.13%, interest rate risk - from 1.92% to 1.95%, and market risk - from 2.93% to 3.51%.

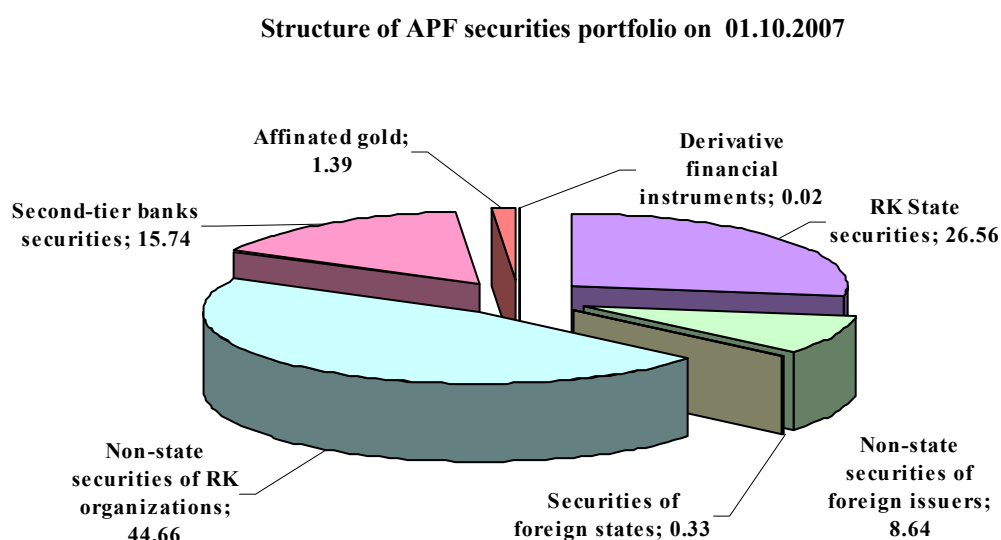
Figure 6.2.2



Source: FSA

The decrease in profitability and risks growth could be explained by global market fluctuations and their influence on pension system, which are dependent on banks' securities yield as they comprise 15.7% of pension funds portfolio (Figure 6.2.3).

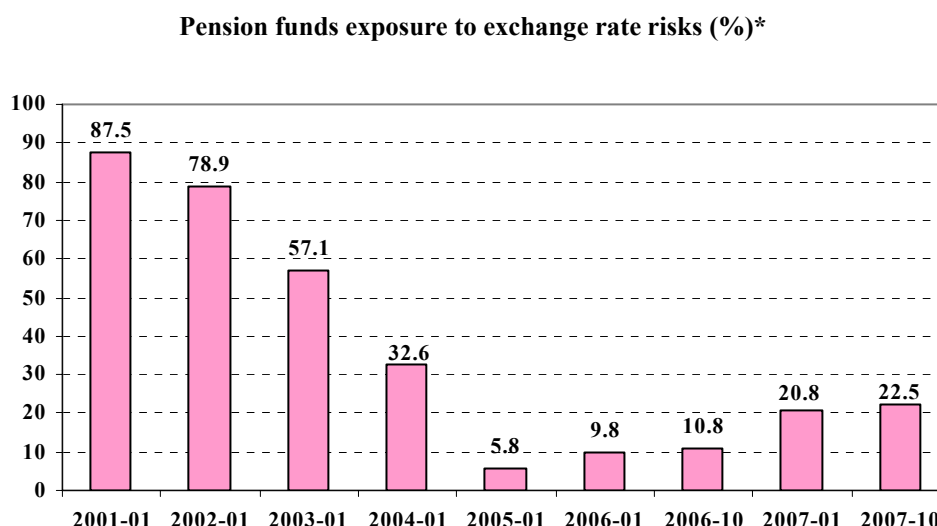
Figure 6.2.3



Source: FSA

A share of FX securities in the investment portfolio tends to increase in light of financial instruments yield growth on international markets and diversification of pension fund investments as well (Figure 6.2.4).

Figure 6.2.4



Source: FSA

\* A share of financial instruments in foreign currency in the investment portfolio of accumulative pension funds

Effect of insufficient use of hedging instruments should be taken into account, particularly for periods of exchange rate instability. At the dawn of accumulative pension system development, the investment strategy of accumulative pension funds included securities denominated in foreign currency in the aggregate investment portfolio of the funds. The reason for that was lack of high-liquidity and long-term instruments on the domestic securities market. Later on, as a result of strengthening tendency of national currency's exchange rate and positive dynamics in development of the domestic stock market, the weight of financial instruments in foreign currency in the pension funds portfolio was adjusted.

Long-term vulnerability factors may include non-coverage of economically active population by the pension system, despite high growth rate of a number of depositors (recipients), including compulsory, voluntary and professional pension contributions. Important vulnerability factors are low interest motives of self-employed population and appeal of voluntary pension contributions due to a low replacement ratio<sup>53</sup> amounting to 20%<sup>54</sup> as of the end of September 2007.

### 6.3 Financial statement of non-banking organizations

*A share of loss loans in total loan portfolio of non-banking organizations exceeds the same indicator of banking sector. However, share of standard credits is more than 90%, that decreasing credit risk essentially.*

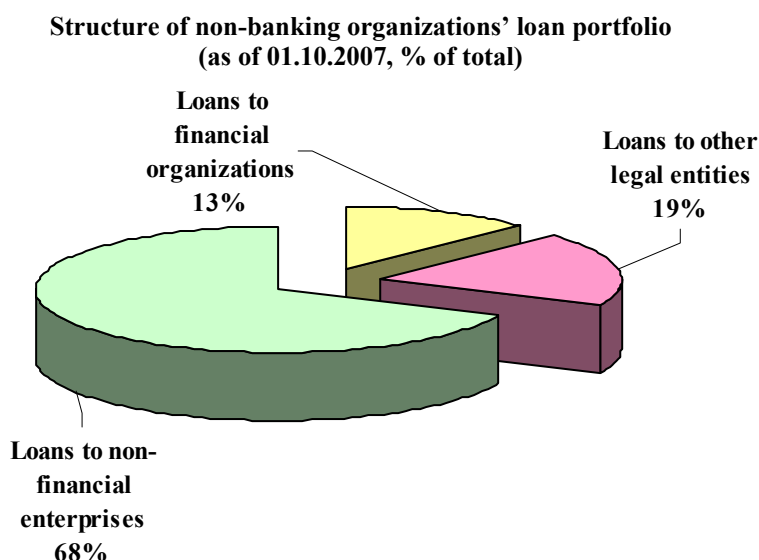
*Coverage of short-term liabilities with short-term assets is superabundant. However, a share of liquid assets in total assets of non-banking organizations is lower as compared with similar ratio in banking system.*

The total structure of loans provided to non-financial corporations includes 68.3% of credits to non-financial enterprises. Loans given to banks and other non-banking organizations amounted to 18.89% and credits to financial organizations cover 12.8% of the credit portfolio (Figure 6.3.1).

<sup>53</sup> Replacement ratio is average pension to average wages ratio.

<sup>54</sup> According to the Agency of Statistics and the Ministry of Labour and Social Protection. By standards of ILO Convention No.102, the minimum replacement ratio should be, at least, 40%; by standards of the European Union, at least, 55% of last wages.

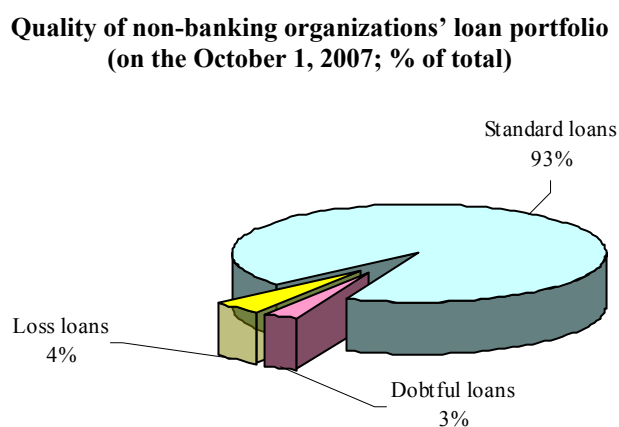
Figure 6.3.1



Source: FSA

Parameters of the credit portfolio quality for non-banking organizations, on the whole, are as follows. Specific weight of standard loans is 92.5% and a share of loss loans is 4.4% of the credit portfolio (Figure 6.3.2). The credit portfolio structure demonstrates a low credit risk, on the whole, including guarantees by the Government under credits given and adequate equity capital.

Figure 6.3.2



Source: FSA

When analyzing solvency risks, it should be noted that liabilities coverage by capital is rather high (but leverage value is only 0.28). Adequate coverage of short-term liabilities by liquid assets is observed and that is a soundness factor before liquidity risks. However, a level of liquid assets is low as compared with the similar indicator of the banking sector (Table 6.3.1).

Таблица 6.3.1

**Liquidity and solvency risks of non-banking organizations**

	01.10.2006	01.10.2007
Liquidity assets in total assets, %	13,67	8,13
Short-term assets to short-term liabilities	0,39	1,89
Liabilities to capital	0,76	0,28

Source: FSA

## **7. Financial Market Infrastructure**

### **7.1. Payment Systems**

Stable and effective functioning of payment systems which act as a link between subjects of economic activities, thereby providing a continuity of production and turnover of money and goods is very important for providing the stability of the financial system of the country. Thus, developed payment systems reduce transaction costs in the economy and increase stability of the financial system, efficiency of financial resources and liquidity of the financial market.

#### **7.1.1. Development of Payment Systems in Kazakhstan**

Reforming of the payment system of Kazakhstan has been started in 1991 and its main aim was to increase processing speed of payments between the senders and beneficiaries, ensure safety of the payment systems and introduce different payment instruments (payment orders, cheques, payment request-orders and payment cards) for a purpose of wider circulation.

On results of such activity, high efficient and safe payment systems were created (Interbank System of Money Transfers and Interbank Clearing System) providing timely settlements between economic subjects.

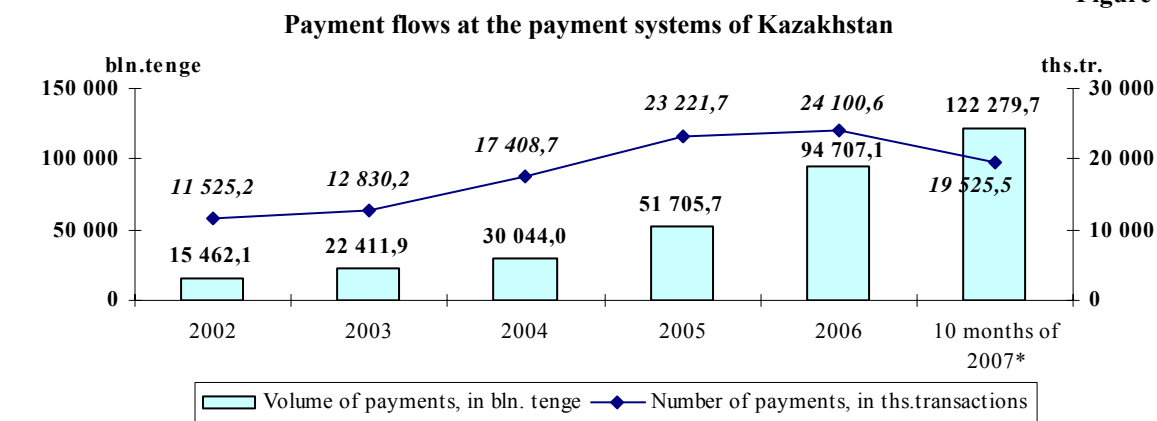
Moreover, payment systems of Kazakhstan have been highly appreciated more than once by such international financial organizations as International Monetary Fund (IMF), World Bank and Bank for International Settlements as sound payment systems providing uninterrupted and safe interbank payments. Thus, according to IMF experts, the Interbank Money Transfer System meets all Core Principles for Systemically Important Payment Systems set by the Committee on Payment and Settlement Systems of the International Settlements Bank and intended as universal directives to support creating of safe and efficient payment systems.

At the same time, the National Bank annually conducts related activities on the further enhancement and development of the payment systems of Kazakhstan according to the latest achievements in the field of scientific and technical progress, and improve payment and money transfer regulations. The National Bank constantly provides modernization of technical infrastructure of the payment systems, improvement of payment systems oversight mechanisms, monitoring of payments and risk management. In the context of approaching the payment systems of Kazakhstan to European Union standards, the National Bank is reforming a structure of banking accounts opened by second-tier banks for their clients.

The National Bank for the purpose to ensure uninterrupted functioning of payment systems and increase safety of its activities provides works on creation of the new back-up center in Astana. The back-up center will ensure uninterrupted operation of the National Bank and payment systems in any worst-case and emergency situations at the location of the main center. Particular attention is given to the “payment gate” created under “Electronic Government of the Republic of Kazakhstan” project.

In conditions of progressive economic development of Kazakhstan from year to year in the payment systems stable growth of non-cash payments is observed (Figure 7.1.1.1). Thus, in 2006 compared to 2002 payments value in the payment systems of Kazakhstan increased in 6.1 times and payments volume - in 2.1 times. For 10 months of 2007 compared to the same period of the previous year non-cash payments value increased by 63.1% and payments volume has decreased by 3.7%. Decrease of the payments volume was caused by the increase of the maximal amount per payment specified by the National Bank for the Interbank Clearing System from 3 mln. tenge to 5 mln. tenge, and pension payments outflow from the system due to a transfer to a new mechanism of SCPP.

Figure 7.1.1.1



Payments volume increase in %	50,6%	44,9%	34,1%	72,1%	83,2%	63,1%
Payments number increase in %	7,2%	11,3%	35,7%	33,4%	3,8%	-3,7%

\* Increase in comparison with the same period of the previous year.

Source: NBRK

It should be noted that each functional feature of the payment systems of Kazakhstan intended for a special purpose and directed to certain markets of goods and services.

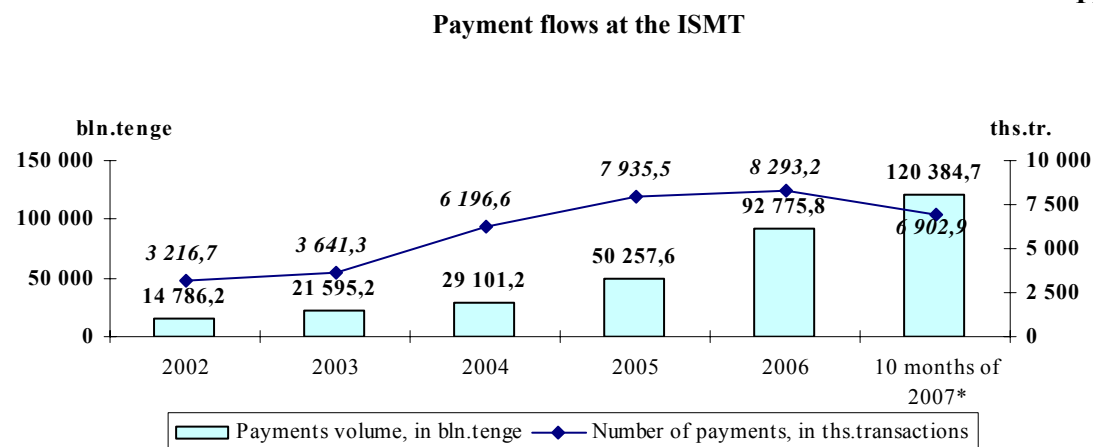
#### Interbank System of Money Transfers (hereinafter referred to as "ISMT")

The ISMT is a real time gross settlement system that provides uninterrupted settlement of remittances between banks-participants of the system within an operational day and is intended for large and high-priority payments in the country. Payment processing speed in the system is 7 processed financial transactions per 1 second in average. Mainly, urgent payments on the financial sector such as payments for interbank deposits and credits, securities and FOREX transactions are processed in the ISMT.

Most of the non-cash payments in the country (98.5% of total payments value during 10 months of 2007) pass through the ISMT. Therefore, a growth of the total payments value in the country is caused, mainly, by increase of payments value processed through ISMT. Thus, in the ISMT the growth of payments value is observed annually and from the beginning of 2005 the rate of growth exceeds 60% (Figure 7.1.1.2). In 2006 compared to 2005 payments value in the ISMT increased in 6.3 times. For 10 months of 2007 the ISMT payments value increased by 63.9% in comparison to the same period of the previous year.

For 10 months of 2007 the average amount of payments value came to 17.4 mln. tenge, having increased by 61.9% in comparison to the same period of the previous year that also proves carrying out through ISMT the largest and priority payments.

Figure 7.1.1.2



Payments volume increase, in %	52,3%	46,0%	34,8%	72,7%	84,6%	63,9%
Payments number increase, in %	-13,9%	13,2%	70,2%	28,1%	4,5%	1,2%

Number of users, in units	72	69	52	51	50	48
Average amount of 1 payment, in mln.tenge	4,6	5,9	4,7	6,3	11,2	17,4
Increase, in %	76,9%	29,0%	-20,8%	34,9%	76,6%	61,9%

Source: NBRK

The share of the five largest banks-participants of the system amounted 33.0% of total system payments value during 10 months of 2007, and from 2002 the share of this group hasn't changed much (Table 7.1.1.1). The share of other banks equals to 20.3% of total payments value in the system. Main payments value in the system (46.7%) falls to the share of other participants. That is caused by the significant payments value carried out through accounts of JSC "Central Securities Depository" and the National Bank (total share of the mentioned participants of total payments value in the system is 38.5%).

**Table 7.1.1.1**  
**Value of payments at the ISMT according to the participants groups**

Participants groups	2002	2003	2004	2005	2006	10 months of 2007*
<b>Five largest banks, bln. tenge</b>	<b>4 808,5</b>	<b>6 415,4</b>	<b>9 112,3</b>	<b>14 569,9</b>	<b>30 214,5</b>	<b>39 749,1</b>
<i>Increase for the period, %</i>	53,2%	33,4%	42,0%	59,9%	107,4%	66,6%
<i>Share to the total value, %</i>	32,5%	29,7%	31,3%	29,0%	32,6%	33,0%
<b>Other banks, bln. tenge</b>	<b>2 902,8</b>	<b>4 834,9</b>	<b>6 876,6</b>	<b>11 541,9</b>	<b>18 942,7</b>	<b>24 389,5</b>
<i>Increase for the period, %</i>	33,0%	66,6%	42,2%	67,8%	64,1%	60,7%
<i>Share to the total value, %</i>	19,6%	22,4%	23,6%	23,0%	20,4%	20,3%
<b>Other participants, bln. tenge</b>	<b>7 074,9</b>	<b>10 344,9</b>	<b>13 112,4</b>	<b>24 145,8</b>	<b>43 618,6</b>	<b>56 246,1</b>
<i>Increase for the period, %</i>	61,3%	46,2%	26,8%	84,1%	80,6%	63,5%
<i>Share to the total value, %</i>	47,8%	47,9%	45,1%	48,0%	47,0%	46,7%

\* Increase in comparison to the same period of the previous year

Source: NBRK

### Interbank Clearing System

In the Interbank Clearing System payments are carried out on the net basis. The importance of the given system for economy of our country consists in safe processing of general retail payments flow in the country. Moreover, tariffs of the clearing system are considerably lower than tariffs of ISMT as this system doesn't carry out payments in a real time mode.

This system is mainly used for not priority and not urgent payments, and a low cost of tariffs make processing of such payments economic effective. A major share of payments processed through this system came to the payments of the economic subjects for goods and services, budget payments (taxes and other compulsory budget payments) and transfer of compulsory pension contributions and social transfers.

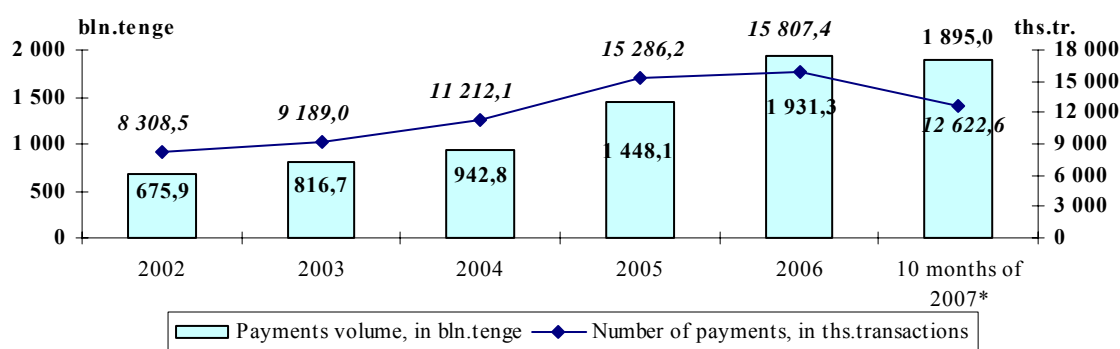
Progressive increase of payments is observed in the Interbank Clearing System as well (Figure 7.1.1.3). Thus, in 2006 compared to 2005 payments value at the Interbank Clearing System increased in 2.9 times. For 10 months of 2007 the payments value in this system has increased by 22.6% in comparison the same period of the previous year.

Moreover, growth of the average amount of payment in the Interbank Clearing System to 150.1 thousand tenge is characterized by the increase of the maximal amount of one payment document fixed by the National Bank to 5 mln. tenge.



Figure 7.1.1.3

## Payment flows at the Interbank clearing system



Payments volume increase, in %	20,6%	20,8%	15,4%	53,6%	33,4%	22,6%
Payments number increase, in %	18,4%	10,6%	22,0%	36,3%	3,4%	-6,2%

Number of users, in units	51	47	32	34	33	33
Average amount of 1 payment, in mln.tenge	81,3	88,9	84,1	94,7	122,2	150,1
Increase, in %	1,8%	9,3%	-5,4%	12,7%	29,0%	30,8%

\* Increase in comparison to the same period of the previous year

Source: NBRK

It should be noted that the share of the five largest banks in total payments value of the system exceeds the share of the mentioned banks in ISMT and has a tendency to increase. Thus, for 10 months of 2007 the share of the five largest banks amounted 46.3%, while in 2002 a share of this group was 38.9% (Table 7.1.1.2). A share of other banks amounted 31.4% and other participants - 22.3%. It should be noted that from among other participants the greatest payments value is covered by the Treasury Committee of the Ministry of Finance of the Republic of Kazakhstan.

Table 7.1.1.2

## Dynamics of payments volume at the Interbank clearing system according to the user groups

Participants groups	2002	2003	2004	2005	2006	10 months of 2007*
<b>Five largest banks, bln. tenge</b>	<b>262,8</b>	<b>316,8</b>	<b>384,4</b>	<b>558,8</b>	<b>824,8</b>	<b>877,8</b>
Increase for the period, %	13,9%	20,5%	21,4%	45,4%	47,6%	35,1%
Share to the total value, %	38,9%	38,8%	40,8%	38,6%	42,7%	46,3%
<b>Other banks, bln. tenge</b>	<b>132,6</b>	<b>186,2</b>	<b>240,3</b>	<b>413,9</b>	<b>590,1</b>	<b>595,1</b>
Increase for the period, %	14,9%	40,4%	29,0%	72,3%	42,6%	25,7%
Share to the total value, %	19,6%	22,8%	25,5%	28,6%	30,6%	31,4%
<b>Other participants, bln. tenge</b>	<b>280,5</b>	<b>313,7</b>	<b>318,1</b>	<b>475,4</b>	<b>516,4</b>	<b>422,1</b>
Increase for the period, %	30,9%	11,8%	1,4%	49,5%	8,6%	-0,1%
Share to the total value, %	41,5%	38,4%	33,7%	32,8%	26,7%	22,3%

\* Increase in comparison to the same period of the previous year

Source: NBRK

## 7.1.2. Liquidity Risk and Systemic Risks

Payments processing through the payment systems are related to the risks that can affect on completion of the payments. The main financial risks specific for the payments systems are

liquidity risks<sup>55</sup> and systemic risks<sup>56</sup> since insufficient funds of payment system participants influences on timeliness of payments and consequently may lead to instability on financial market.

To manage the indicated risks the National Bank provides monitoring of the payment systems and money transfers from the correspondent account of the participant to its position in the system in a real time mode. At the same time each payment system has its own peculiarities and methods for risk management.

### Interbank System of Money Transfers

The ISMT provides uninterrupted settlement of remittances between banks-participants of the system within an operational day and this system is effective and high-capacity mechanism of liquidity and systemic risks restriction since it ensures settlement of payments in a real time mode within amounts at participants' positions in the system. Furthermore, ISMT assists to decrease risks arising during the settlements of transactions with financial instruments and foreign currency by delivery versus payment mechanisms in transactions with financial instruments or payment versus payment mechanisms in the FOREX transactions. For the purpose of risks management ISMT uses a queue management mechanism (the settlement of payment documents priorities and changing queue of the payment documents).

It is necessary to note that liquidity of ISMT participants has increased as compared to 2002 (Table 7.1.1.3). Thus, 83.9% of total payments value was achieved owing to participants' own capital (incoming balance) in 2002 and 16.1% were covered by counter-payments. At the same time, it has been observed the growth of liquidity exceeding participants' turnover in the system since 2006. Thus, increase of average daily participants' turnover in the system was equal to 85.3%, while participants' liquidity increased in 2.5 times, as compared to 2005. On average, during 10 months of 2007 it is observed a further tendency of liquidity growth of the ISMT participants. Thus, liquidity growth amounted to 79.3% under average daily turnover value increase by 62.4% and the system's liquidity ratio came to 1.17.

At the same time, in July-October 2007 decrease of participants' liquidity at the ISMT is observed. Thus, during the given period the average amount of incoming balance decreased by 16.9% as compared to January-June 2007. Liquidity decrease at the whole system by no more than 20% was caused by providing liquidity of the National Bank as a participant of the payment system. Excluding the liquidity of the National Bank, the average amount of incoming balance in the system decreased by 43.4% as compared to the first half year of 2007 as a result of low liquidity of banks during the reported period.

Moreover, if in January-June 2007 the average amount of incoming balance exceeded the amount of average daily turnover by 6.2%, in July to October 2007 it has been observed an adverse situation when the average amount of incoming balance is 2.4% lower than the average turnover amount.

Decrease in liquidity of the payment system participants caused the growth of rejected payments at the ISMT. Thus, 18 payments on the amount of 71,585.6 mln. tenge were rejected (withdrawn) during the 10 months of 2007 in ISMT due to insufficient liquidity. At that, 69.0% of unprocessed payments in 2007 are the payment documents unprocessed in July to October 2007. All the rejected or withdrawn payment documents were re-processed by ISMT participants at the same day or following operational days.

At the same time, it is necessary to note the appropriate actions of banks undertaken to manage queue. Thus, banks at monitoring queue of payment documents have timely withdrawn the

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<sup>55</sup> Liquidity risk – the risk that a counterparty will not settle an obligation for full value when due but at some unspecified time thereafter.

<sup>56</sup> Systemic risk - the risk that the failure of one participant in a transfer system, or in financial markets generally, to meet its required obligations will cause other participants or financial institutions to be unable to meet their obligations (including settlement obligations in a transfer system) when due.

payment documents on the large amounts for purpose to have other subsequent payments settled. Then, after liquidity had been received, banks sent the previously withdrawn payments to the system and provided their settlement within an operational day.

**Table 7.1.1.3**

**Liquidity indicators at the Interbank system of money transfer**

	2002	2003	2004	2005	2006	10 months of 2007*
Average daily participants turnover, bln. tenge	58,7	86,0	115,5	201,0	372,6	573,3
Increase for the period, in %	52,3%	46,6%	34,2%	74,1%	85,3%	62,4%
Average incoming balance of the participants <sup>57</sup> for the period, bln. tenge	49,2	67,1	83,4	143,0	350,5	589,9
Increase for the period, %	9,6%	36,2%	24,3%	71,5%	145,2% (in 2,5 times)	79,3%
Share of average incoming balance of participants' turnover per day, in %	83,9%	77,9%	72,2%	71,1%	94,1%	102,9%
Average money liquidity ratio <sup>58</sup> for the period	0,93	0,82	0,74	0,78	1,04	1,17
Average money turnover ratio <sup>59</sup> for the period	1,21	1,30	1,42	1,43	1,07	0,98
<b>Rejected (withdrawn) payments</b>						
Volume, in units	239	163	2 185	27	39	18
Value, mln. tenge	133 890,1	18 206,4	8 995,1	716,6	48 088,6	71 585,6
Number of participants with rejected (withdrawn) payments, in units	20	27	12	8	12	7
Number of days in a year when the payments were rejected (withdrawn), in units	48	33	27	9	17	16

\* Increase in comparison to the same period of the previous year

Source: NBRK

**Interbank Clearing System**

In the Interbank Clearing System a probability of liquidity risk and systemic risk occurs in case of lack of money on the participant's accounts in the ISMT for settlement of their net debit position amount in a clearing. In this system it is used a queue "unwinding" method to manage liquidity and systemic risks when in the Interbank Clearing System the payment documents are cancelled to a deficient amount with lower priority and, re-calculated is carried out.

Average daily turnovers in the Interbank Clearing System tended to balanced increase as well (Table 7.1.1.4). Thus, in 2006 as compared to 2002 the average daily value of system participants increased in 2.9 times and for 10 months of 2007 this index increased by 21.4% as compared to the same period of the previous year.

In conditions of the payments growth in the payment systems adequate increase of the average net debit position amount of users in a clearing was observed. In 2006 as against 2002, the average net debit position amount increased in 2.2 times to 1.72 bln. tenge. During 10 months of 2007 as compared to the same period of 2006 the average net position amount increased by 31.3% and came to 2.21 bln. tenge.

A share of the participants' net position amount in a clearing regarding to the amount of average daily turnovers of participants at the ISMT<sup>60</sup> is insignificant (0.4% for 10 months of 2007) and that fact contributes to decrease of liquidity risks in settlement of net positions through the ISMT. Decrease of the share of net position of participants' turnovers in ISMT (in 2002, 1.4%) under the total increase of payments value via ISMT and the Interbank Clearing System, promotes decrease in risks of rejected payments as well.

<sup>57</sup> Incoming balance of the participants is an amount of money transferred by such participant from a correspondent account to a position in the system.

<sup>58</sup> Money liquidity ratio is equal to a ratio of system liquidity (incoming balances of all participants) to debit turnover in ISMT and rejected (withdrawn) payments in ISMT.

<sup>59</sup> Money turnover ratio is equal to a ratio of ISMT debit turnover to the system liquidity.

<sup>60</sup> Average amount of the participants' net debit position corresponds to the amount of average daily turnovers of ISMT users as clearing's participants net positions are settled at the cost of users' funds in ISMT.

During the 10 months of 2007 in the Interbank Clearing System no payment documents were cancelled owing to insufficient liquidity that confirm a fact of that current risk management methods meet the requirements of the system completely and ensure its continuous and efficient operation.

Table 7.1.1.4

**Liquidity indicators at the Interbank Clearing System**

	2002	2003	2004	2005	2006	10 months 2007*
Average participants' turnover per day, bln. tenge	2,7	3,3	3,7	5,8	7,8	9,0
Increase for the period, %	19,6%	21,8%	14,5%	54,8%	33,9%	21,4%
Average net position amount of participants (ANPU), bln. tenge	0,77	0,91	0,98	1,24	1,72	2,21
Increase for the period, in %	11,4%	17,2%	8,1%	26,6%	38,4%	31,3%
Share of net position in participants' turnovers in IMTS (average for a period), %	1,4%	1,1%	0,9%	0,7%	0,5%	0,4%
Cancelled payments in system						
Volume, in units	392,0	515,0	164,0	141,0	156,0	-
Value, mln. tenge	57,9	107,4	27,8	44,9	83,9	-
Number of participants with cancelled payments, in units	8	9	5	4	1	-
Number of days in a year when payments were cancelled, in units	16	10	5	4	1	-

\* Increase in comparison to the same period of the previous year.

Source: NBRK

## 7. 2. Regulation of Financial System

**Change of standard minimal reserve requirements.** Under inflation pressure, to toughen the monetary and credit policy, the National Bank changed standards of minimum reserve requirements (MRR). A standard for domestic liabilities was set to 5%, and for other liabilities, including liabilities to non-residents, and debt securities regardless of a residence base, to 10%. According to applicable laws, new MRR standards should have been implemented on August 29, 2007. If the new standards had come into effect on August 29, 2007, total liquidity level of banks would have decreased by 68%.

However, to regulate short-term liquidity of banks at the time of crisis in world markets, the National Bank decided to postpone the effective date of the new standards of minimum reserve requirements (for domestic liabilities – 5 % and for other liabilities – 10%), first, to October 9, 2007 and then to January 15, 2008.

Furthermore, from October 9, 2007 a reserve base of bank obligations was reduced by elimination of certain short-term bank liabilities (such as REPO, overnight), subordinated loans and perpetual financial instruments and accrued expenses to them. A structure of bank reserve assets was expanded by inclusion of cash in convertible currency available in bank till.

According to the National Bank estimation, the above changes introduced into the mechanism of minimum reserve requirements increase overall liquidity of second-tier banks by 140-150 bln. KZT.

### **Other Measures to Ensure Financial Stability**

The National Bank developed, and on November 10, 2007 has concluded the Memorandum on Financial Stability with the Government and Agency for Regulation and Supervision of Financial Market and Financial Organizations. The Memorandum states principles of government support and procedures for application of other government intervention instruments to ensure financial stability; optimal lending conditions of the National Bank as a creditor of last resorts;

possible participation of the Government in management of “bad” assets of second-tier banks under relevant conditions.

As an addendum to the Memorandum, a package of measures was developed to ensure financial stability. The package includes measures to support liquidity and adequate bank financial resources, instruments of anti-crisis management, measures to ensure macroeconomic and financial stability and mechanisms of currency regulation and foreign exchange controls.

To maintain optimal liquidity, from August 2007 the National Bank started certain operations to provide refinancing loans to banks. The National Bank, the Agency of Financial Supervision and second-tier banks entered into Agreements of co-operation and co-ordination for loans provided to banks by the National Bank. The agreements specify obligations of banks that have entered into the agreements, to maintain foreign debts and assets at a level not higher than the current one, intentions to increase capital stock and realization of conservative credit and moderate deposit policies.

To increase stability of the deposits security system, the National Bank considered capital increase of the Kazakh Fund of Deposits Security.

### ***Prudential Measures***

From April 1, 2007 a new revision of the Rules for Classification of Assets, Contingent Liabilities and Provisions (Reserves) was issued. A purpose of the new revision of the Rules was shift of emphasize in assessment of asset quality from collateral to borrower’s financial statement and credit servicing capacity. To achieve this target, supervision authorities introduced some tightened standards, for example, one-step lowering of a financial status classification category for credits in foreign currency to borrowers who have no adequate foreign exchange revenues or have exchange rate risk not covered with relevant hedging instruments.

Furthermore, additional criteria were introduced for assessment of borrower’s financial status under mortgage loans (creditworthiness, delay in repayment, cancelled debt to creditors, prolongation, and recognition of loans as unsecured which have been collateralized with property registered abroad). In addition, criteria for assessment of collateral quality under mortgage loans and additional conditions for real estate assessment, including assessment prescription, were introduced.

High growth rates of second-tier banks’ assets require adequate capitalization of banks. In this connection, in February this year some actions were taken to minimize risks associated with foreign loans of the banking sector. A purpose of the actions is to increase bank capitalization in case of call by banks for additional funds from foreign capital markets. In other words, the more money a bank borrows abroad, the more equity capital it shall have. Thus, two new ratios as for obligations of the banking sector to non-residents were introduced: a ratio of bank capitalization to obligations to non-residents (excluding debt securities issued by the bank or its special subsidiary (SPV) - k8; and a ratio of bank capitalization to amount of obligations to non-residents and all bank obligations under issued debt securities - k9. A discretionary approach is used for a method of calculations and size of these standards subject to a size of equity capital of second-tier banks. It should be noted that the above measures are taken, above all, to limit risks associated with foreign debts and increase in capitalization of the banking sector and not to decrease absolute parameters of its foreign debt.

Taking into account existing tendencies in the banking sector, a risk level for assets placed in non-resident subsidiary banks of the Republic having debt ratings lower than “BB-“ from Standard & Poor’s or similar ratings from one of rating agencies or having no relevant rating from 100% to 150%, was increased. It means that if a bank places its assets in risk instruments, it shall have adequate capital.

The same refers to measures providing for tightened requirements to capital adequacy as for loans associated with real estate and consumer loans. Thus, they provide for risk-weighting scheme

of mortgage loans under risk levels subject to a ratio of the mortgage loan amount to collateral cost, in particular:

- *50% risk, if a ratio of the mortgage loan amount to collateral cost is not more than 50 percents of the collateral cost;*
- *75% risk, if a ratio of the mortgage loan amount to collateral cost is not more than 60 percents of the collateral cost;*
- *100% risk, if a ratio of the mortgage loan amount to collateral cost is not more than 70 percents of the collateral cost;*
- *application of 150% risk level to other mortgage loans.*

Risk-weighting of consumer loans is required up to 150%.

It should be noted that the similar requirements were stated in June 2007 regarding mortgage organizations.

At present, the situation at the financial market of Kazakhstan is rather stable. Current liquidity is in excess. In a short-term period the banking system will be able to response adequately to external challenges in this not simple situation at global markets.

In October 2007 some measures were taken to decrease dependence of banks on foreign finance. In particular, standard values of k8 and k9 ratios were decreased subject to a size of bank equity capital with effective date of January 1, 2009 (i.e. a bank will be able to borrow a certain amount of funds from foreign markets subject to its equity capital).

To increase capital adequacy, it's provided to weight assets placed in states with preferential tax treatment, up to 200% as for risk levels. The above measures were taken to decrease a share of the riskiest segments of cross-border activity of the banking sector.

On the whole, it should be noted that the measures taken by the Agency to minimize risks of the banking sector are reasonable and timely and promote stability of the system. If own risks are assessed adequately and second-tier banks comply with requirements of supervision authorities, domestic banks will be able to fulfill their liabilities, including foreign obligations, in instable environment of world markets.

## IV. Special Research of Financial Stability

### 8. Methods of Financial Stability Risks Assessment “Risk Assessment Map”

To ensure financial stability, regular monitoring and analysis of various vulnerability factors and risks for financial stability shall be provided on basis of a wide list of macroeconomic and prudential indicators. For this purpose Risk Assessment Map<sup>1</sup>, an analytical approach to complex assessment of financial stability risks, was developed. The Risk Assessment Map is a schematic image of a level of risks on quantitative parameters for a certain period, which also allows to analyzing in what way a risk level has changed from the moment of the previous period. Moreover, the Risk Map is a starting point for profound analysis of risks affecting on financial stability. The Risk Map is created on basis of 57 indicators in view of methods to assess financial stability indicators, macroprudential indicators, indicators defining financial crises probability, including macroeconomic indicators and different indicators of global, banking and real economic sectors. In the Risk Assessment Map the indicators<sup>2</sup> are grouped under 8 parameters, as for their major features:

1. global world (external factors)	5. debt burden
2. adequate reserves of the country	6. liquidity and sensitivity of banking sector to the market risks
3. capital flows	7. quality of banking sector assets (credit risks)
4. monetary and fiscal policy	8. profitability of banking sector

To avoid the representation of the indicators which identically characterize a risk source in the system, interrelation of indicators within the formed groups was checked and indicators positive correlated with each other were excluded. This target was achieved by means of a correlation matrix.

Indicators of formed groups are presented below and a corresponding mark shows what “behaviour” of an indicator demonstrates increase in risks and their vulnerability factors.

#### *Description of Risk Assessment Map parameters*

1. *Global world.* Indicators of this group allows to estimate probability of negative impact of external environment factors which may lead to sharp correction at the domestic market of the country in view of current conditions at the international capital and commodities markets as well as an estimate of “contagion effect” probability of difficulties from major trading counter-partners.

<b>Global world</b>	<b>Format</b>	<b>Mark</b>
International interest rates (LIBOR 3 month)	change (year to year)	+
World oil prices	change (year to year)	-
Terms of trade	change (year to year)	-
Industrial production of OECD countries	change (year to year)	-
Real GDP of Russia	change (year to year)	-

2. *Adequate reserves of the country.* This parameter includes indicators assessing probability of decrease in country’s solvency capacity.

<b>Adequate reserves of the country</b>	<b>Format</b>	<b>Mark</b>
Coverage of commercial banks’ foreign liabilities with foreign assets of NBRK (including assets of the National Fund)	ratio	-
Net foreign assets of NBRK to money supply ratio	ratio	-

<sup>1</sup> The methodology has been developed by the Financial Stability Division of the National Bank of the Republic of Kazakhstan. Presented Risk Assessment Map is not final; it will be further improved with methodological approaches refined.

<sup>2</sup> The indicators are presented in different formats such as absolute value, ratio, change a year, trend deviation and regression model residual argument. For most of the indicators a historical series starts from 2000.

Gross international reserves to import ratio	change (year to year)	-
Ratio of international reserves to forthcoming payments to discharge and service foreign debt <sup>3</sup>	ratio	-

3. *Capital flows.* Indicators assessing a risk of decrease in capital inflow to the country economy.

<b>Capital flows</b>	<b>Format</b>	<b>Mark</b>
Current account balance to GDP ratio	ratio	-
FDI and current account balance to GDP ratio	ratio	-
Real effective exchange rate <sup>4</sup>	trend deviation	+
Export of goods and services	change (year to year)	-
Import of goods and services	change (year to year)	+
Real GDP <sup>5</sup>	change (year to year)	+
Capital account	absolute value	-
Ratio of "Errors and Omissions" and short-term capital to GDP	ratio	-

4. *Monetary and fiscal policy.* Assessment of risk of the policy efficiency conducted by public authorities.

<b>Monetary and fiscal policy</b>	<b>Format</b>	<b>Mark</b>
Public expenses to GDP ratio	ratio	+
Fiscal budget balance to GDP ratio	ratio	-
Credits to economy to GDP ratio	change (year to year)	+
Excess money supply in real term <sup>6</sup>	estimate	+
Inflation	change (year to year)	+
Money multiplier	change (year to year)	+

5. *Debt burden.* Indicators which allow assessing a risk of increase in dependency on foreign and domestic debt capital and its structure.

<b>Debt burden</b>	<b>Format</b>	<b>Mark</b>
Ratio of foreign debt of the country to GDP	ratio	+
Share of commercial banks' liabilities in the gross foreign debt	ratio	+
Share of public debt in the gross foreign debt	ratio	+
Public debt to GDP ratio	ratio	+
Ratio of liabilities to equity capital of corporate sector	ratio	+
Ratio of equity capital to assets and off-balance liabilities weighted at a risk level of banking sector	ratio	-

6. *Liquidity and sensitivity of banking sector to the market risks.* Probability assessment of losses of financial institutions in liquidity decreases and foreign exchange and interest rate risks increase situation.

<b>Liquidity and sensitivity of banking sector to the market risks</b>	<b>Format</b>	<b>Mark</b>
Spread between the highest and lowest interbank offered rate	absolute value	+
Real deposit interest rate	change (year to year)	+
Differential between domestic and foreign nominal rates <sup>7</sup>	absolute value	-

<sup>3</sup> It's calculated as ratio of international reserves, excluding the gold, to short-term debt, plus discharge and service payments for a long-term foreign debt for preceding two years, on average.

<sup>4</sup> Increase in real exchange rate index denotes appreciation of national currency, and decrease - reduction in its value. To calculate a trend of real effective exchange rate, Hodrick-Prescott filter was used.

<sup>5</sup> Real GDP indicator with a positive mark means a change in aggregate demand for import.

<sup>6</sup> Indicator is defined as deviation of assessed money demand from observed money supply (expressed as a share of money supply in GDP), i.e. as residuals of the below regression equation:

$$\frac{M}{GDP} = a_0 + a_1 Y_t + a_2 \Delta p_t + a_3 t + \varepsilon_t$$

where M – money supply, GDP – nominal GDP, Y – GDP (in real terms), p – CPI, t – time.



<i>STB credits to STB deposits ratio</i>	<i>change (year to year)</i>	+
<i>STB deposits (in real terms)</i>	<i>change (year to year)</i>	-
<i>Credits of central bank to the banking system</i>	<i>change (year to year)</i>	+
<i>Highly liquidity assets to total assets ratio</i>	<i>ratio</i>	-
<i>Highly liquidity assets to short-term liabilities ratio</i>	<i>ratio</i>	-
<i>Foreign currency liabilities to total liabilities ratios</i>	<i>ratio</i>	+
<i>Bank-to-bank liabilities</i>	<i>change (year to year)</i>	-
<i>Net open position in FX (in module) to equity capital ratio</i>	<i>ratio</i>	+
<i>Volatility of exchange rate of tenge to US dollar<sup>8</sup></i>	<i>absolute value</i>	+

7. *Quality of banking sector assets.* Probability assessment of financial institutions' losses as a result of default on liabilities by their counter-partners and clients.

<b><i>Quality of banking sector assets</i></b>	<b><i>Format</i></b>	<b><i>Mark</i></b>
<i>"Non performing" loans<sup>9</sup> to total loans ratio</i>	<i>ratio</i>	+
<i>Mortgage credits to total credits ratio</i>	<i>ratio</i>	+
<i>Consumer credits to total credits ratio</i>	<i>ratio</i>	+
<i>Foreign currency credits to total credits ratio</i>	<i>ratio</i>	+
<i>State sector credits to GDP ratio</i>	<i>ratio</i>	+
<i>Trade sector credits to total credits ratio</i>	<i>ratio</i>	+
<i>Industrial sector credits to total credits ratio</i>	<i>ratio</i>	+
<i>Construction sector credits to total credits ratio</i>	<i>ratio</i>	+
<i>Return on equity of corporate sector</i>	<i>absolute value</i>	-

8. *Profitability of banking sector.* Indicators assessing a risk of losses by financial institutions in case of decrease in yield and efficiency of their asset management.

<b><i>Profitability of banking sector</i></b>	<b><i>Format</i></b>	<b><i>Mark</i></b>
<i>Net interest income to gross income ratio</i>	<i>ratio</i>	-
<i>Non-interest expenses to gross income ratio</i>	<i>ratio</i>	+
<i>Operational expenses to gross income ratio</i>	<i>ratio</i>	+
<i>Return on assets</i>	<i>absolute value</i>	-
<i>Differential between credit and deposit interest rates</i>	<i>absolute value</i>	-

In the Risk Assessment Map indicators are ranked according to the risk groups. The risk groups are formed on basis of a percentile scale which was created in view of historical values of each indicator by ascending / descending sorting in accordance with the direction of deterioration of such indicator. Range limits of the risk groups are calculated as 25%, 50%, 75% and 100% percentile of indicator's value distribution. Thus, any change of indicator's value to the increase of risk and vulnerability will demonstrate a high risk level within an interval between the values of 75% and 100% percentile of distribution and vice versa. Thus, the first risk group (75%-100%) denotes high risk; the second risk group (50%-75%) - moderate risk; the third risk group (25%-50%) –insufficient and the fourth risk group (less than 25%) – low risk.

A binary system is used to determine if a current indicator enters in any risk group, i.e. if a value of such indicators is within the limits of the first risk group, it's equal to 1 and 0 for other groups. Then the indicators' values are summed up for each of the risk group and a resulting amount is weighted in the following way. Amount of values from the first and fourth risk groups is weighted by 1, and amount from the moderate and insufficient groups - 0,5. As a result, the final value of the risk level is calculated by subtraction of the amount of values of the first and second groups, from amount of the third and fourth risk groups.

<sup>7</sup> Differential between average weighted rates for credits in national currency adjusted for change in exchange rate, and LIBOR 3 month in US dollars. As against an early warning system (Section 9), the indicator deterioration is assessed when a differential reduce, i.e. demonstrates growth of interest expenses on debt servicing as compared with interest income.

<sup>8</sup> Indicator of exchange rate risk assessment, calculated as a standard deviation of exchange rate of tenge to US dollar.

<sup>9</sup> Amount of loans classified as "doubtful" loans of categories 2, 4, 5 and bad loans.

Values for each parameter of the risk source are normalized as its share in number of total indicators of each parameter that let to standardize differences in number of indicators in each subgroup of the risk source in the Risk Assessment Map.

The Risk Assessment Map enables not only to assess a current risk level on various parameters of their sources but also to track changes in conditions for formation of the risks as compared with a previous period. Moreover, every time a new period is added to the assessment range of limit values of the risk groups. For example, it is possible to compare a risk source level change in the second quarter of 2007 with the end of 2006 that provides easy visual demonstration of changes for a half-year.

## 9. Early Warning System of Financial Crisis for Kazakhstan

*Today the issues of maintenance of financial stability in the world have a special importance. Severe consequences of financial crises for stable economic development make people not only understand their nature and origins but develop certain approaches to detect early factors of vulnerability of the country to financial crises, what practically can be achieved by creating different early warning systems of financial crises.*

As a methodical basis of the early warning system for both currency and banking crises had been chosen a signal approach<sup>10</sup>. The *signal approach* for early warning systems<sup>11</sup> implies monitoring of dynamics of certain economic variables which tend to unusual systematic behavior during a precrisis period. Deviation of any variable from its normal level is considered as a signal of a potential financial crisis which may occur during a certain future period. The signal approach as a methodical basis was preferred because predictive power assessment of each indicator is provided on individual basis that allows to range and find a signaling economic variable which is a potential source of the vulnerability factor. Analysis of reasons for the variable signaling is one of the most important information blocks to decide on and choose any applicable preventive and corrective measures of the national economic policy.

### *Fundamentals of Financial Crises Early Warning System*

#### *Stage 1. Identification of Crisis Situation: Exchange Market Pressure Index*

In empirical researches a concept of a so-called “speculative pressure” is applied for purpose of determination a currency crisis. According to the concept, a crisis as well as a speculative attack is defined as a period when speculative pressure at the foreign exchange market reached its critical values.

Exchange Market Pressure Index (hereinafter referred to as “EMPI”) used to assess stability of a national currency exchange rate is constructed on basis of rate of change of the exchange rate and international reserves as against to a previous period:

$$EMPI(1) = ((e_t / e_{t-1}) - 1) - (\sigma_e / \sigma_{Res}) * ((Re s_t / Re s_{t-1}) - 1) \quad (1)$$

As an alternative, the EMPI is constructed on basis of changes per year:

$$EMPI(2) = ((e_t / e_{t-12}) - 1) - (\sigma_e / \sigma_{Res}) * ((Re s_t / Re s_{t-12}) - 1) \quad (2)$$

where:  $e$  - an official exchange rate;  $Res$  – international reserves;  $\sigma_e$ ,  $\sigma_{Res}$  – standard deviations of the exchange rate and international reserves respectively.

A currency crisis is considered to have occurred when EMPI crosses specified threshold value of its arithmetic mean plus three times standard deviation of the index. The crisis situation is defined by transforming index behavior to the binary system:

$$\text{Crisis in } t \quad \begin{cases} 1, \text{ if } EMPI_t > \mu_{EMPI} + 3 \cdot \sigma_{EMPI} \\ 0, \text{ otherwise} \end{cases}$$

To construction of EMPI, monthly data of gross international reserves of the National Bank of the Republic of Kazakhstan<sup>12</sup> and official exchange rates of tenge to US dollar as for the end of the period from January 1997 to October 2007<sup>13</sup> are used.

<sup>10</sup> Methodology for Early Warning System of financial crises for Kazakhstan was developed by the Financial Stability Division of the National Bank of the Republic of Kazakhstan using many studies by research institutes, investment and central banks, IMF and other international financial institutions.

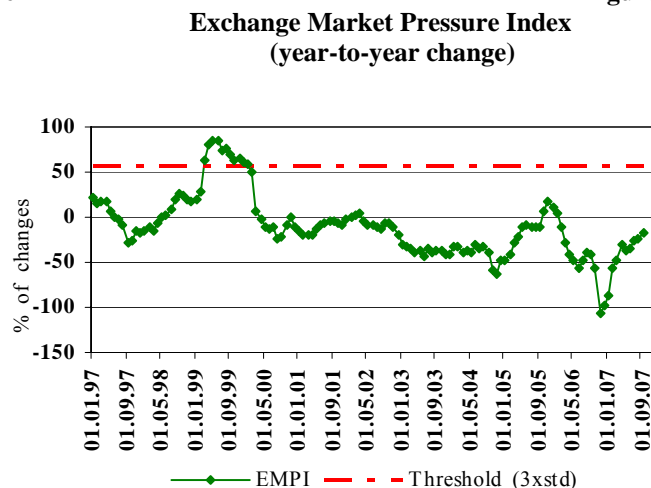
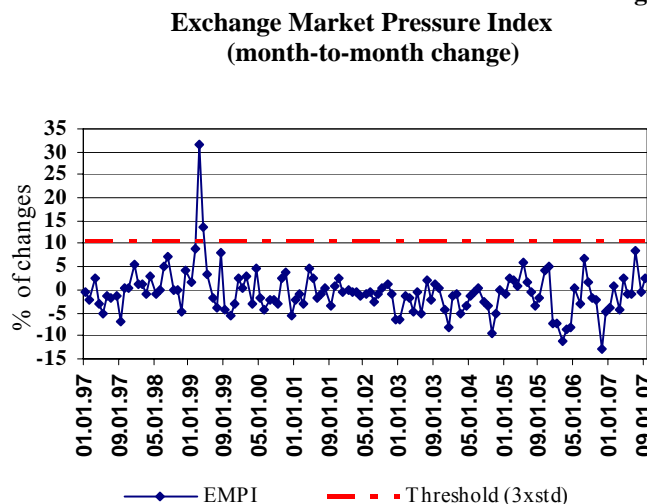
<sup>11</sup> The researches being the basis for this approach were carried out by such authors as G. Kaminsky, K. Reinhart, S. Lisondo, M. Goldstein and H. Edison.

<sup>12</sup> Gross international reserves in US dollars at the end of period, except the gold.

As a rule, substantial fluctuations of EMPI dynamics during a precrisis period demonstrate certain probability of speculative attacks increase on the exchange rate, but only exceeding the threshold value can be evidence of currency crisis occurrence. When threshold values are imposed on a index curve it can be seen that EMPI (1) and EMPI (2) has exceeded the upper limit once in April 1999 (Figure 1, Figure 2).

Figure 1

Figure 2



## Stage 2. Leading Indicators

### 2.1. Selection and Calculation of Early Warning Indicators

Based on the analysis of empirical researches for the early warning system of Kazakhstan 17 variables were selected as the most high quality indicators that demonstrate different aspects of rising economic risks. Quarterly data from 2000 when negative consequences of 1999 calmed down, to 3rd quarter 2007<sup>14</sup> were used for the early warning indicators in the system. Values of the indicators were calculated as a percentage change to a relevant period of a previous year, what allows eliminating the seasonal effects. Two formats of the data for the early warning indicators are provided: standard presentation (growth rate of the indicator, ratio of absolute values) and non-standard presentation (deviation from trend of real effective exchange rate<sup>15</sup>; indicators calculated on basis of interest rates; residue argument of excess money supply model in real terms<sup>16</sup>).

### 2.2. Signal Extraction Method

According to the signal approach, each indicator shall be analyzed separately within a single-variable method to determine a signal. Behavior of each indicator is observed to determine when a variable deviates from its “normal” behavior above a certain threshold. The indicator signals when its value exceeds a critical level.

$$S_{t,j} = \begin{cases} 1, & \text{if } X_{t,j} \text{ crosses threshold} \\ 0, & \text{otherwise} \end{cases} \quad (3)$$

where,  $S_{t,j}$  - a signal of  $j$  indicator during  $t$  period,  $X_{t,j}$  - value of  $j$  indicator during  $t$  period.

<sup>13</sup> To calculate EMPI(1), extreme data (three points for April, May and June 1999) were excluded from the series of exchange rate and international reserves; for EMPI(2)- extreme values from April 1999 to May 2000.

<sup>14</sup> For some indicators of Q3 2007, estimated data are provided.

<sup>15</sup> Hodrick-Prescott filter was used to calculate the real effective exchange rate trend.

<sup>16</sup> Indicator is defined as deviation of assessed demand for money from money supply observed (expressed as a share of money supply in GDP), i.e. as residuals of the below regression equation:

$$\frac{M}{GDP} = a_0 + a_1 Y_t + a_2 \Delta p_t + a_3 t + \varepsilon_t$$

where  $M$  – money supply,  $GDP$  – nominal GDP,  $Y$  – GDP (in real terms),  $p$  – CPI,  $t$  – time.

It should be taken into account that for some indicators, any value above the threshold means increase of potential crisis, while for other indicators – vice versa (Table 1).

**Table 1**

**Indicator's format and direction relevant threshold crossing**

Item No.	Indicators	Format	Indicator signals relative to its threshold value, if it is
1	Gross international reserves of the NBRK	growth rate	lower
2	Current account balance/GDP	absolute value	lower
3	Differential between domestic and foreign <sup>17</sup> nominal interest rates	absolute value	higher
4	Real effective exchange rate	trend deviation	higher
5	Export of goods and services	growth rate	lower
6	Import of goods and services	growth rate	higher
7	Terms of trade	growth rate	lower
8	Short-term foreign debt share in GDP	absolute value	higher
9	Credits to economy /GDP	growth rate	higher
10	Money multiplier	growth rate	higher
11	Real interest rate on deposits	absolute value	higher
12	Excess money supply in real terms	estimation	higher
13	Money supply / international reserves	growth rate	higher
14	Differential between interest rates for credits and deposits <sup>18</sup>	absolute value	higher
15	STB deposits	growth rate	lower
16	Real GDP	growth rate	lower
17	Fiscal budget balance/GDP	absolute value	lower

Threshold values for each indicator were calculated on basis of a percentile scale. A percentile of empirical distribution of the indicator which minimized ratio of false to good signals<sup>19</sup>, was defined as an optimal threshold level. The actual threshold value of the indicator varies from country to country, however, percentiles are permanent. The false to good signals ratio (noise-to-signal ratio, NRS) has primary importance in the early warning system: the lower NRS, the more effective forecast the indicator provides, and therefore any indicators with NRS more than 1 are treated as unessential.

In the empirical researches NRS values were calculated on basis of financial crises data of many countries and, thus, for calculation NRS it is required to have a relevant history of financial crises. Nevertheless, in the absence of sufficient history of financial crises in Kazakhstan, data of the various empirical researches were used that had given an opportunity to extrapolate them for the system of early warning indicators of Kazakhstan. As the most optimal variant of threshold value was used a percentile of distribution which was equal to the arithmetic mean of values available from the various researches (Table 2). Implementation of such approach can be proved by fact that in considered studies was researched data of many developed and developing countries which experienced both currency and banking crises.

**Table 2**

**Threshold values of indicators for currency and banking crises  
(in percentiles of distribution)**

<i>Indicators</i>	<i>Average threshold value for currency crisis</i>	<i>Average threshold value for banking crisis</i>	<i>Indicators</i>	<i>Average threshold value for currency crisis</i>	<i>Average threshold value for banking crisis</i>

<sup>17</sup> It demonstrates country risk assessment.

<sup>18</sup> It demonstrates credit expansion and growth of interest rates for credits with regard to deposits for compensation possible losses as a result of portfolio deterioration.

<sup>19</sup> A signal is considered as false, if an indicator had given the signal but a crisis didn't occur, or an indicator had given no signal but a crisis occurred (within 24 months) and vice versa.

Gross international reserves of the NBRK	13	25	Money multiplier	83	90
Current account balance/GDP	20	14	Real interest rate on deposits in tenge	88	80
Differential between domestic and foreign nominal interest rates	85	84	Excess money supply in real terms	92	90
Real effective exchange rate	82	90	Money supply / international reserves	89	90
Export of goods and services	13	10	Differential between interest rates for credits and deposits	80	87
Import of goods and services	84	80	STB deposits	12	17
Terms of trade	14	19	Real GDP	15	14
Short-term foreign debt in GDP	74	74	Fiscal budget balance/GDP	12	14
Credits to economy /GDP	89	93			

Critical levels specific for our indicators were calculated based on the obtained threshold values expressed in percentile of distribution and crossing their value were recorded with the binary system using formula (3).

### *Stage 3. Complex Crisis Vulnerability Assessment of Financial System of Kazakhstan*

#### *3.1. Composite Vulnerability Index*

It is difficult to judge about a probability of a financial crisis based on signals given by each individual indicator, as they do not provide overall complex assessment of financial instability. Therefore, a direct method to cover all vulnerability factors is to combine of signals into a single main channel, i.e. construction of a composite vulnerability factor. Composite vulnerability factor gives a possibility to combine information obtained from each indicator as the more indicators signal of a forthcoming crisis, the more probability of its actual occurrence. In the course of this investigation, a weighted composite index was constructed being a basis for determination of conditional probability of a crisis in future. The advantage of this composite index is that it takes into account predictive power of each individual indicator and combines information of their signals by their weighting with inverse value of noise-to-signal ratio. It is essential to remember that indicators with the least value of the noise-to-signal ratio practically proved to be high quality early warning indicators. Therefore, when they are weighted in construction of the composite index, they are given the highest weights. The composite index is calculated according to the following formula:

$$I_t = \sum_{j=1}^n \frac{S_t^j}{w^j} \quad (4)$$

where,  $S$  - a signal of  $j$  variable during  $t$  period,  $w$  – noise-to-signal ratio for  $j$  variable.

For construction of the composite index it is required values of noise-to-signal ratios of each of indicators. As it has been already noted, it is impossible to calculate these ratio values in the Kazakhstan situation, therefore a technique similar to definition of threshold levels for indicators was applied (Table 3).

**Table 3**

**Weights for signals of early warning indicators**

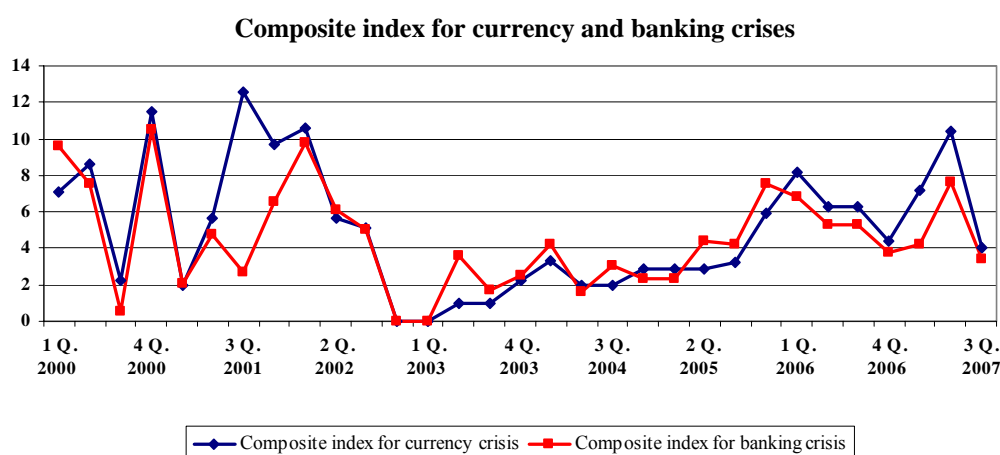
Indicators	Weights for signals (currency crisis)	Indicators	Weights for signals (banking crisis)
Real effective exchange rate	3,58	Real effective exchange rate	2,74
Fiscal budget balance / GDP	2,50	Fiscal budget balance / GDP	2,48
Current account balance/GDP	2,44	Real GDP	2,22
Export of goods and services	2,30	Current account balance/GDP	2,00
Money supply/international reserves	2,12	Money multiplier	1,90
Gross international reserves of the NBRK	1,89	Real interest rate on deposits	1,90
Excess money supply in real terms	1,76	Export of goods and services	1,88

Real GDP	1,72	Differential between domestic and foreign nominal interest rates	1,71
Credits to economy/GDP	1,56	Gross international reserves of the NBRK	1,56
Real interest rate on deposits	1,48	Money supply/international reserves	1,54
Terms of trade	1,37	Credits to economy/GDP	1,44
Money multiplier	1,30	STB deposits	1,39
STB deposits	1,17	Excess money supply in real terms	1,20
Short-term foreign debt in GFD	1,11	Terms of trade	1,15
Differential between domestic and foreign nominal interest rates	1,01	Short-term foreign debt in GFD	1,11
Import of goods and services	0,89	Differential between interest rates for credits and deposits	0,87
Differential between interest rates for credits and deposits	0,69	Import of goods and services	0,52

The most predictive power in forecasting of both the currency and banking crises has the real effective exchange rate indicator; the least predictive power are: for the currency crisis - the differential between interest rates for credits and deposits, and for the banking crisis –import of goods and services.

Dynamics of the weighted composite vulnerability index for Kazakhstan calculated on basis of signals of seventeen early warning indicators by crossing of the specified threshold values are shown in Figure 3.

Figure 3



### 3.2. Conditional Probability Assessment of Financial Crises

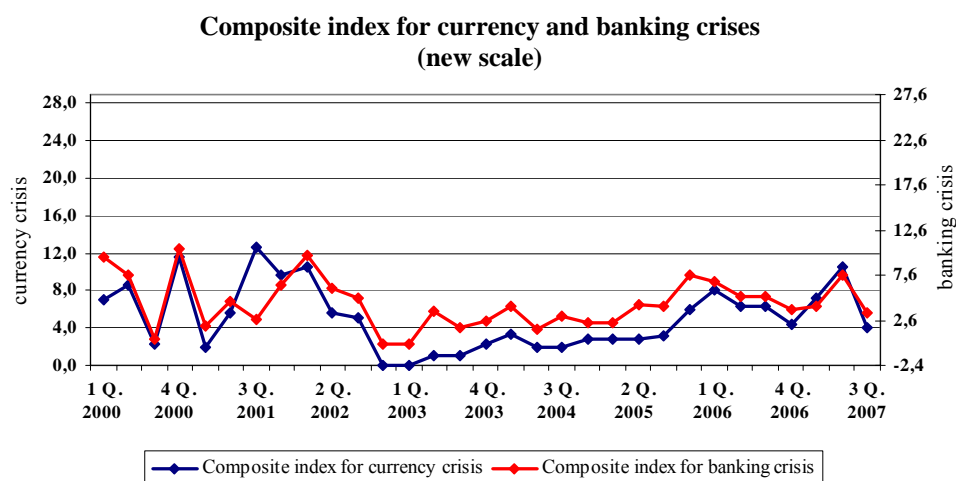
Based on the results of the composite index, it is possible to assess probability of financial crises in Kazakhstan. To assess when economy of the country is more or less vulnerable to any financial crises, the composite index values should be connected with conditional probability of a crisis.

G. Kaminsky, M. Goldstein and K. Reinhart calculated conditional probability of a currency and banking crises for their huge sample. Analogous to the argumentation above, it is impossible to determine the conditional probability for Kazakhstan; however, in the course of this investigation the probabilities were estimated by linear transformation of the intervals analyzed by G. Kaminsky.

For linear transformation it is necessary to calculate the theoretical maximum of the composite index for a certain period of time which is a sum of all the weights that can be calculated, if all the indicators will give signals at the certain moment of time. The theoretical maximum of the weighted composite index for the currency crisis is 28.93 and for the composite index of the banking crisis – 27.62. To compare all the practical values of the composite index with its maximum, Figure 4 demonstrates rescaled graph of the composite indices to assess a real situation, if, in theory, all the indicators will give a signal.

Figure 4

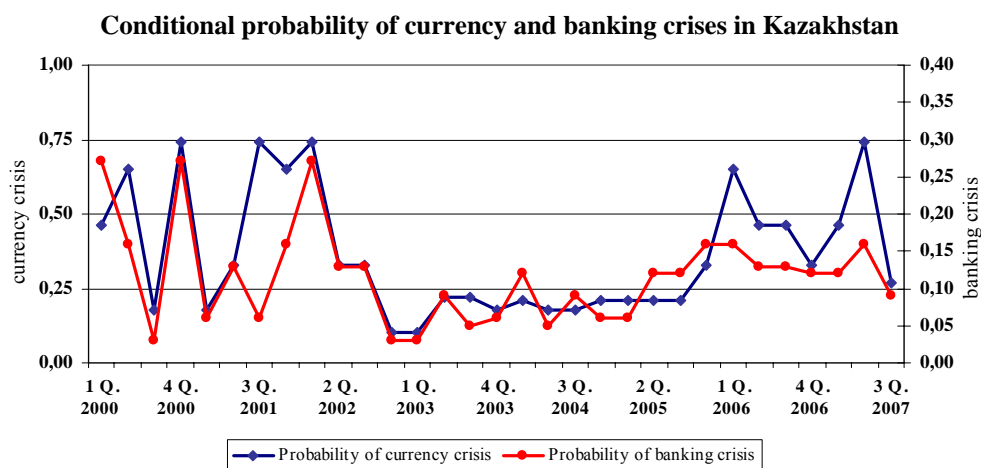




The next step is to transform the composite index values via linear transformation to conditional probabilities of the currency and banking crises. According to the linear transformation results the probability of a currency crisis reaches almost 100% when the composite takes on a value of 13 and above. However, an analogous composite index value of the banking crisis equal to 12.5 and above defines the maximal probability of banking crisis occurrence only at a level about 40 %. It can be explained by the fact that according to G. Kaminsky research these indicators are more effective for estimation of currency crisis probability than for the banking crisis.

A final step of the complex assessment of the financial system vulnerability is estimation of probability for the currency and banking crises in Kazakhstan based on composite index values for a period from 2000 to 3rd quarter 2007. For calculation of conditional probability for Kazakhstan, the composite index values were compared to corresponding interval of values of conditional probability (Figure 5).

**Figure 5**



Probability dynamics of the currency and banking crises has the similar tendencies of increase and decrease. High probability of the financial crisis during 2000-2001 and some periods of 2005-2006 is observed. Thus, a forecast period is considered as advanced 12-18 months. It is possible to see, that dynamics of conditional probability of financial crises fluctuates, showing high probability of the financial crisis during one period and a very low level during another one. In this case it should be taken into account both the national economic policy providing for certain corrective measures and existing general conditions at the domestic and foreign markets. For example, high turbulence of the financial market situation in 3rd quarter 2007, decrease of international reserves, deterioration of parameters of balance of payment and subsequent reduction of the money supply were reflected in general dynamics of conditional probability.

Thus, the early warning system of the financial crisis developed for Kazakhstan represents adapted to the features of the country the signal approach for early warning of financial crises. The



fact of that early warning system is based on integrated experience of empirical researches on set of many financial crises that occurred during the different periods, does not reduce its value, and on the contrary, gives confidence in its effective application for financial stability analysis along with other analytical tools. However, if in forecasting the currency crises the indicators demonstrate rather certain probability, as for the banking crises the analysis should be expanded with additional methods of vulnerability assessment of the financial sector due to average probability of the banking crisis at the maximal value of composite index.

## 10. Risk Distribution in Corporate Sector

Financial condition of non-financial organizations has a direct impact on stability of the whole economy. The corporate sector, being a principal debtor of banks, plays one of the key roles in development of all financial system. The purpose of this analysis is to determine risks of the corporate sector through analysis of annual results of 2005-2006 for large and medium-sized businesses amounting to 75% of total assets of the corporate sector. The research was conducted on the base of distribution of financial stability indices of enterprises in terms of profitability, debt burden and liquidity; through analysis of financial indicators constancy; and identification of businesses exposed to default risks<sup>20</sup>.

### **Financial Status Indicators of Corporate Sector**

#### ***Profitability indicators (return on equity and sales)***

ROE is a profitability indicator, which is critical to business stability. It shows an ability of an enterprise to increase capital, resist adverse conditions and to pay off the debts.

$$\underline{\text{ROE}} = \text{Pre-tax return} / \text{Average equity capital}$$

On the whole, as for large and medium sized businesses, an increase of return on equity was observed in 2006. The return on equity amounted to 49.3% in comparison with 40.8% in 2005. This tendency is confirmed by percentile distribution of the index where a median value demonstrates some increase in comparison with the previous year. However, classification of businesses by percentile groups is rather erratic. The 50<sup>th</sup> percentile group includes most of the businesses where average ROE was 6% in 2006, in other words 25.3% of the total number. 27% of assets are allocated between businesses included in 75<sup>th</sup> percentile, where average ROE is 35% (Figure 1). Moreover, having amounted to 25% of total businesses in 2006, the businesses included in 10<sup>th</sup> and 25<sup>th</sup> percentile groups still have negative profitability. This business group is of the most interest as enterprises of this group are subject to high default probability. The most vulnerable group covers about 8% of large and medium-sized business assets and 16% indebtedness to banks and number of employees.

Distribution characteristics of return on sales are similar to return on capital dynamics. Return on sales index demonstrates capacity of any enterprises to produce goods or provide services at low costs or high price and it is calculated using the following formula:

$$\underline{\text{Return on sales}} = \text{Pre-tax return} / \text{Gross income of main activity}$$

Under general growth of returns on sales in 2006, 24.7% of total enterprises were included in a negative profitability zone (up to 25<sup>th</sup> percentile); a share of the enterprises changed a little in comparison with 2005 (Figure 2). Indebtedness of these enterprises to banks is about 16% of total indebtedness for the whole sector.

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<sup>20</sup> The Methods are based on Guidelines of Financial Stability Indicators (FSI) issued by the International Monetary Fund and other studies of central banks, the Bank of Ireland, in particular. Analysis and calculations are made by the Financial Stability Division of the National Bank on basis of primary data provided by Statistics Agency of RK.

Figure 1

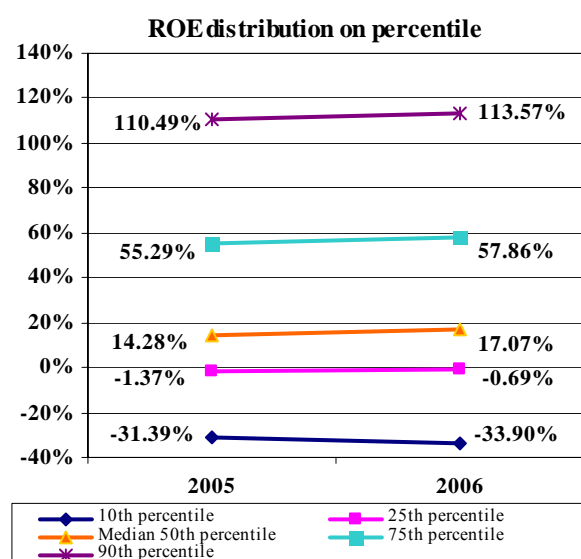
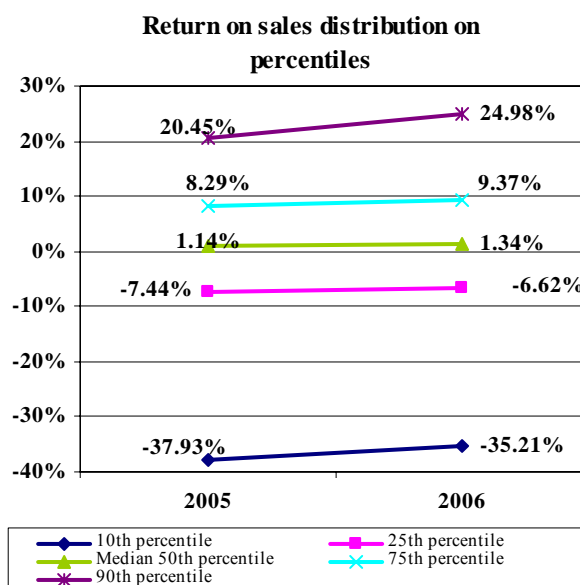


Figure 2



Business rating as to percentile groups may change from year to year. A reason for such changes is that businesses, being the most profitable during a certain period, may pass to a group of the least profitable businesses in a relatively short period. In this case default probability for the enterprise increases a lot.

To clarify this fact, a transition matrix should be drawn. This matrix demonstrates quartile<sup>21</sup> classification of businesses subject to their profitability levels, and constancy of distribution by periods. A purpose of the transition matrix is to determine shares of enterprises for each quartile in comparison with a previous period (the more quartile value is, the higher degree of constancy is applied). Inclusion of business in low-profit quartiles can be explained with one out of two reasons: temporary or permanent low profitability. In case of the temporary low profitability, a constancy value is low and default probability for an enterprise is low as well, since a profitability index can increase in the following period. In the second case a constancy value is considered to be higher and default probability increases a lot.

On the whole, at the end of 2006 about 49% of enterprises had negative return on equity (Table 1). At the same time, return volatility is rather high as about 50% of enterprises pass from the 1<sup>st</sup> quartile to other quartile groups.

Table 1

Transition matrix of return on equity					
ROE (%)		2006			
	2005	Quartile 1	Quartile 2	Quartile 3	Quartile 4
	Quartile 1	49%	18%	12%	20%
	Quartile 2	21%	54%	19%	6%
	Quartile 3	15%	21%	45%	20%
	Quartile 4	15%	7%	24%	54%

Moreover, 20% enterprises of a risk group, mainly, in agriculture and construction sectors, could jump to 4<sup>th</sup> quartile and 23% of high-profit enterprises moved from the 4<sup>th</sup> quartile to the 1<sup>st</sup> and 2<sup>nd</sup>. Thus, return on equity may be subject to considerable fluctuations during short periods.

Return on sales demonstrates higher constancy level (Table 2). The dominant share of enterprises which had been in a risk zone in 2005, kept negative profit in 2006. Most of enterprises which moved to a group of enterprises with maximum profitability were agricultural businesses. Enterprises that moved from the 4<sup>th</sup> quartile in 2005 to the 1<sup>st</sup> quartile in 2006 included 13% of

<sup>21</sup> Quartile is determined by 25 percentiles interval.

construction companies. On the whole, high-profit enterprises probably will keep high profitability in the next period in comparison with a risk group that subject to external factors determining financial and economic activity of enterprises.

Table 2

Transition matrix of return on sales					
Profitability (%)		2006			
	2005	Quartile 1	Quartile 2	Quartile 3	Quartile 4
	Quartile 1	58%	18%	11%	14%
	Quartile 2	21%	50%	19%	10%
	Quartile 3	12%	23%	49%	16%
	Quartile 4	10%	9%	22%	60%

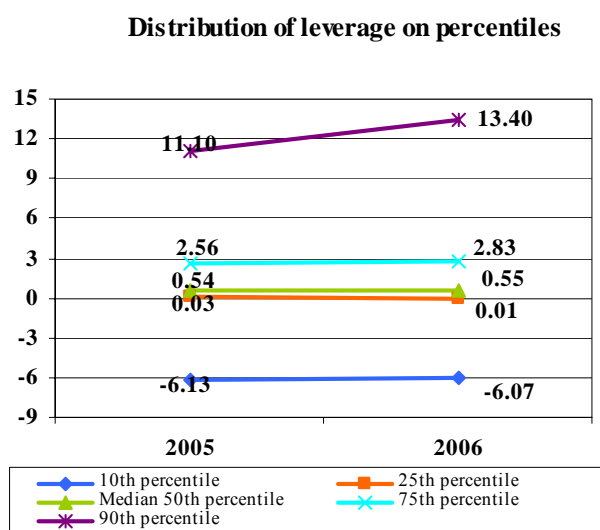
#### *Debt burden indicators (leverage and interest rate coverage ratio)*

The financial leverage ratio shows the extent the enterprises rely on debt financing rather than equity capital. This ratio is an instrument determining default probability of an enterprise under its credit contracts. The bigger an enterprise debt is, the more probability of default is to occur since too big debts result in insolvency and financial difficulties. The leverage is calculated using the following formula:

$$\text{Leverage} = \text{Total liabilities} / \text{Equity capital}$$

Leverage dynamics demonstrates that enterprises with high debt burden increased their obligations even more, having increased their debt burden to a greater extent through bank loans (Figure 3).

Figure 3



A share of obligations under the highest percentile group has increased by 31% to 60% of whole obligations of enterprises; and indebtedness of this percentile group to banks increased from 22% to 55% of total indebtedness to banks. A number of enterprises with leverage values equal or more than the 90<sup>th</sup> percentile, amounts to 25% of Kazakh enterprises.

The leverage transition matrix shows that 67% of enterprises are in the 4<sup>th</sup> quartile having stayed at risk zone from year to year (Table 3). About 16% of enterprises moved from the risk zone to a non-risk zone to the

1<sup>st</sup> quartile. About 35% of such enterprises included construction and trading companies. Majority of enterprises that moved from the non-risk zone to a higher-risk category were agricultural businesses having amounted to 21% of the 4<sup>th</sup> quartile enterprises.

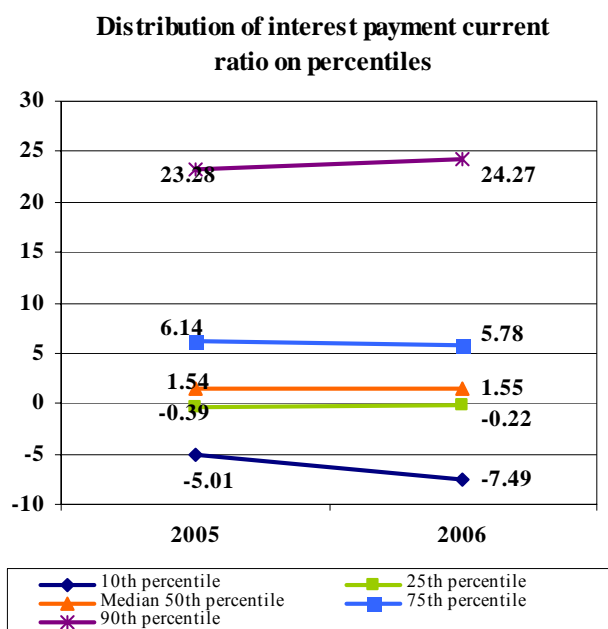
Table 3

Leverage transition matrix					
Leverage (%)		2006			
	2005	Quartile 1	Quartile 2	Quartile 3	Quartile 4
	Quartile 1	76%	9%	3%	11%
	Quartile 2	1%	77%	19%	3%
	Quartile 3	3%	16%	62%	19%
	Quartile 4	16%	2%	15%	67%

The interest coverage ratio supplements the leverage analysis with assessment of debt service capacity. If return covers interest payments, an enterprise is considered stable, even if it's subject to high debt burden. This ratio is calculated the following way:

$$\text{Interest rate coverage ratio} = \text{EBIT}^{22} / \text{Interest paid}$$

Figure 4



On the whole, as for enterprises, the level of interest coverage increased slightly. At the same time, as for enterprises included in the high-risk zone, the ratio decreased much (Figure 4). 25% of enterprises lay in group of 10<sup>th</sup> and 25<sup>th</sup> percentiles with negative interest coverage. The aggregate liabilities of these enterprises to banks were about 17% in 2006.

Table 4

Transition matrix of interest coverage ratio					
Interest Coverage (%)		2006			
	2005	Quartile 1	Quartile 2	Quartile 3	Quartile 4
	Quartile 1	52%	19%	13%	16%
	Quartile 2	24%	49%	22%	5%
	Quartile 3	14%	25%	42%	18%
	Quartile 4	10%	6%	22%	61%

According to the transition matrix of the interest rate coverage ratio (Table 4), 52% of enterprises that lay in the 1<sup>st</sup> quartile of 2005 couldn't have improved their financial status to the end of 2006, whereas 16% became able to cover their interest payments completely. Most of such enterprises were agricultural enterprises (23%). In addition, a positive factor is that 61% of enterprises included in the 4<sup>th</sup> quartile during 2005 remained at the same level and only 10% moved to the high-risk zone. 22% of such high-risk enterprises are construction businesses.

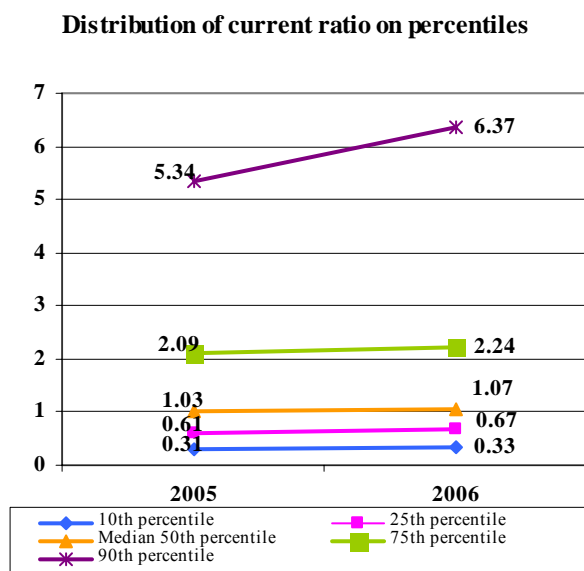
<sup>22</sup> EBIT - Earning before interests and taxes.

### ***Liquidity indicators (current liquidity)***

The current liquidity ratio demonstrates ability of an enterprise to fulfill their regular financial liabilities. The more considerable cash flows an enterprise has, the higher possibility it will avoid default on financial obligations. The current liquidity is calculated the following way:

$$\text{Current liquidity ratio} = \text{Current assets} / \text{current liabilities}$$

**Figure 5**



Distribution of the current liquidity ratio demonstrates that overall growth of liquidity in 2006 in the large and medium-sized business sector to 1.10 was ensured by high-liquidity enterprises, while other enterprises had insignificant increase of liquidity (Figure 5). The transition matrix for the current liquidity ratio shows the high constancy level (Table 5). In particular, only 6% of enterprises being included in the 1<sup>st</sup> quartile in 2005 could improve their activities, having achieved the highest results in 2006. Mostly, they were agricultural, transport and communications enterprises and enterprises providing services to consumers. Enterprises with decreased liquidity during the last period should be noted. A share

of such enterprises amounted to 4%, one third of the enterprises are manufacturing enterprises.

**Table 5**

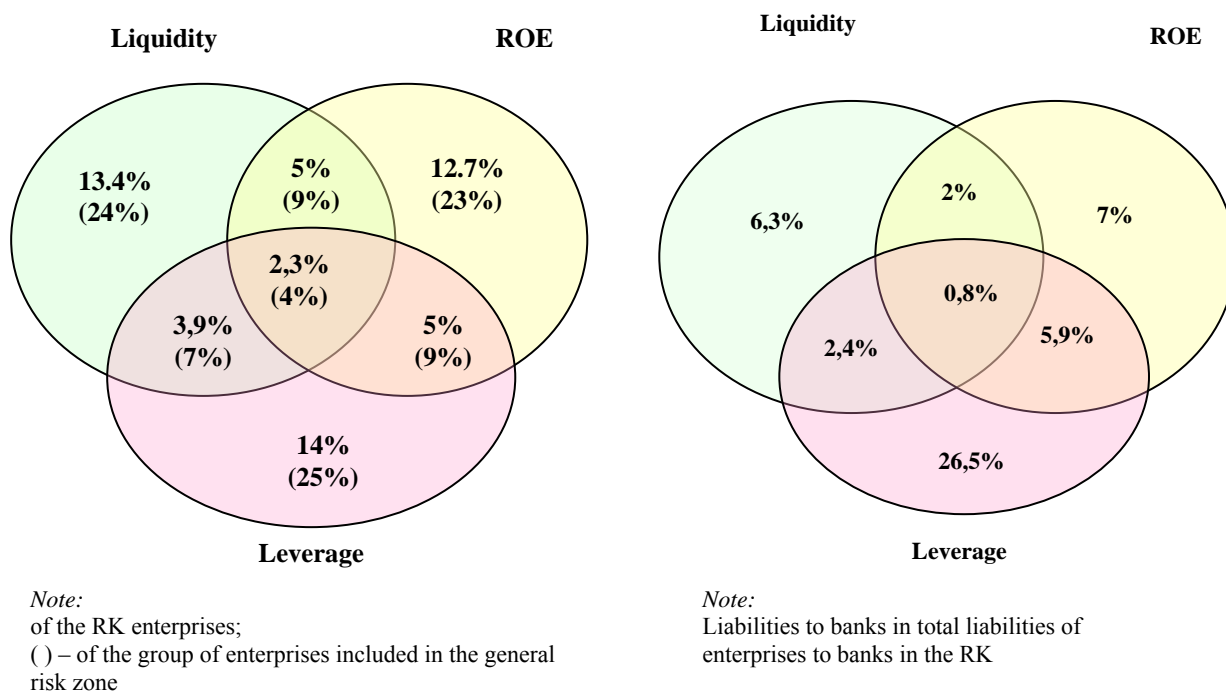
**Transition matrix of current liquidity ratio**

Liquidity (%)		2006			
	2005	Quartile 1	Quartile 2	Quartile 3	Quartile 4
	Quartile 1	67%	19%	8%	6%
	Quartile 2	21%	54%	18%	7%
	Quartile 3	8%	20%	52%	20%
	Quartile 4	4%	7%	22%	67%

### ***Financial Stability Risks of Corporate Market***

The next stage is assessment of vulnerability of the banking sector to risks associated with borrowers' financial status through assessment of bank obligations of the enterprises included in the risk zone as to return on capital, liquidity and leverage. A Venn diagram is a graphic representation of default risks of enterprises. It consolidates enterprises with the worst indicators and groups them, thus revealing enterprises of the highest risk. As the above analysis demonstrates that enterprises with the worst indicators are included in a group below 25 percentile (low liquidity and negative return on capital) and above 75 percentile (more than double leverage), relevant threshold values were used to assess risk groups (Figure 6).

## Distribution of enterprises in 2006



All in all, in 2006 a share of enterprises included, at least, in one of the risk groups amounted to 56% of large and medium-sized businesses in Kazakhstan. Most of these enterprises belong to agriculture, manufacturing industry, construction and real estate transactions and trading sectors. Their indebtedness to banks is slightly more than 50% of all indebtedness. Based on the share of the above enterprises the highest specific weight of risks accounts for the trading sector: 64% of enterprises of the sector have 74% credits. At the same time the default probability increases, if, at least, two risk factors are available:

- high indebtedness and low liquidity;
- low return on capital and low liquidity;
- low return on high-leverage capital, or
- combination of the above three risk factors.

Most of enterprises are included only in one risk group. Enterprises included into, at least, two of three risk groups amounted to 16% of enterprises in the Republic of Kazakhstan, and the most critical zone includes 2.3% enterprises.

Thus, it's possible to assess high-risk indebtedness, i.e. the share of large and medium-sized business' obligations to banks exposed to high-risk default. The indebtedness is 11% of total indebtedness of enterprises in the Republic of Kazakhstan. The major groups of enterprises exposed to default risk belong to the agricultural sector (22% of sector's obligations to banks), manufacturing industry (20%), construction (19%), hotel business (19%), real estate transactions (13%) and trading (7%). In the narrow interpretation a high-risk portion of debt is 0.8%, i.e. in case of combination of all the risk factors when the default risk is the highest. As against 2005, the high-risk indebtedness increased insignificantly, while specific weight of the enterprises having the above indebtedness decreased.

### **Summary**

All in all, profitability and liquidity indicators slightly improved along with the growth of the corporate sector indebtedness. A constancy level of major financial indicators is high, i.e. enterprises with stable financial indicators improved their financial status; and financial status of high-risk enterprises did not change or slightly decreased.

Default probability for bank obligations is exposed to a moderate risk. The highest risk enterprises are in the agricultural, construction and manufacturing industries.

The distribution of financial indicators changes in erratic way from year to year, i.e. enterprises of the same sector demonstrate both considerable increase and decrease of their financial indicators. Thus, there were no systemic risk associated with high default probability of certain sectors, on the whole, and subsequent considerable decrease of the credit risks due to concentration of banks' assets in agriculture, construction and trading, but potential problems can occur at individual enterprises.

Profitability and liquidity of agricultural increased significantly, however, taking into account considerable growth of indebtedness to banks, this sector is subject to the highest default risk, if environmental factors change.



## 11. Financial Stability Index Construction

*The estimated composite index of financial stability shows a degree of tension or pressure of different factors on stability of the banking system. This year, positive dynamics of the index was followed by decrease of its value at the beginning of October 2007. Major factors of index downfall are assets quality and a liquidity level.*

One of the main tendencies in recent studies is development of banking sector stability indicators based on a single composite index helping to monitor the banking sector<sup>23</sup>.

The basis of the above indicators may be dynamics of the parameters indicating financial statement of the banking system. These indicators can be added with different market indicators bringing “leading” or “predicting” specific to the index (for example, based on stock exchange indicators).

In this analysis an attempt was made to assess vulnerability of the banking sector to different factors of pressure on its stability using the financial stability index on basis of dynamics of different financial soundness indicators of the banking system<sup>24</sup>. In particular, for index construction purpose, variables characterizing impact of assets quality, liquidity level, capital adequacy, profitability and exposure to exchange risks on stability of the banking sector, were selected. Thus, the composite financial stability index includes the following groups of indicators:

1. Assets quality:
  - share of “nonperforming” loans<sup>25</sup> in total loan portfolio of the banking sector;
  - ratio of “nonperforming” loans (net of created provisions against them) to balance sheet capital of banks.
2. Liquidity:
  - highly liquid assets in total assets of banks;
  - ratio of highly liquid assets to short-term liabilities up to 1 year (including demand liabilities);
3. Capital adequacy:
  - Tier 1 capital to risk weighted assets.
4. Profitability:
  - ROA (net income before tax to total assets of banks);
  - ROE (net income before tax to total balance sheet capital of banks).
5. Exchange rate risk:
  - Net open position in foreign exchange to regulatory capital of banks.

At the initial stage each variable was normalized by a variance-equal method<sup>26</sup>. To determine an index component value, the average value of normalized values for a group of indicators included in the component was calculated. After that values of all the components were aggregated in the composite index. Moreover, to represent adequately contribution of each indicator to the index estimated, the values of normalized indicators were converted to positive or negative values according to their impact<sup>27</sup>.

Thus, the positive index value reflects improvement of the factors influencing stability of the banking system and negative value shows their deterioration.

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<sup>23</sup> “An Index of Financial Stress for Canada” by Mark Illing and Ying Liu. Bank of Canada Working Paper, 2003; “Measuring and forecasting stress in the banking sector: evidence from Switzerland” by Elke Hanschel and Pierre Monnin. BIS, Working Paper, 2005.

<sup>24</sup> The studies were carried out by the financial stability division of the National Bank of the Republic of Kazakhstan. Experience of the Czech National Bank, the Bank of Finland and the National Bank of Switzerland was studied in selection of the variables as the index components, index construction approach and its interpretation.

<sup>25</sup> According to adopted loan classification rules as “nonperforming” loans, doubtful loans of 2, 4 and 5 categories and loss loans were included into calculation.

<sup>26</sup> The data are normalized using a variance-equal method by division deviation of each value from the mean by standard deviation of sample.

<sup>27</sup> For instance, if a normalized indicator (E.g. “nonperforming” loans) has negative value, this reflects “relative” decrease of the indicator and that has a positive impact on banks soundness.

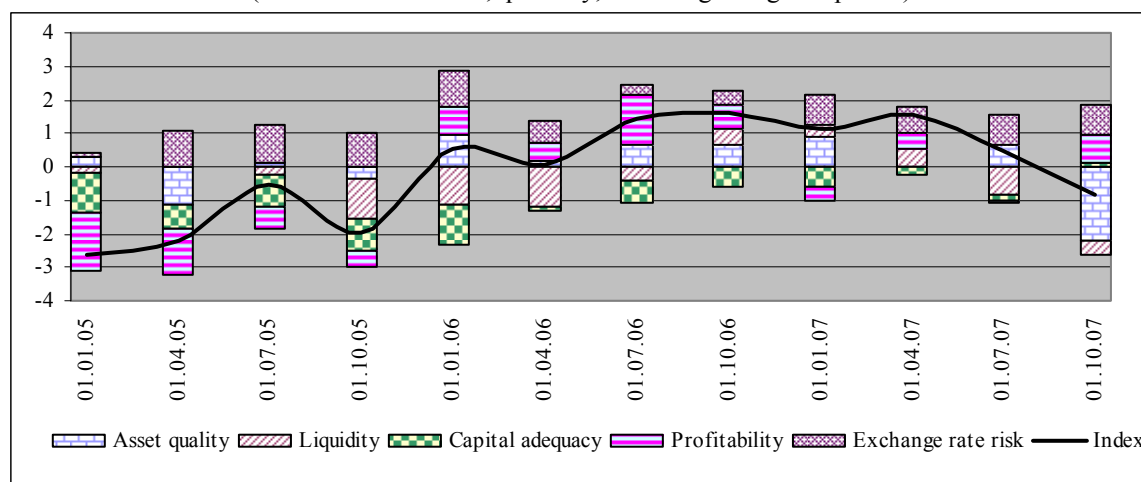
Dynamics of the index reveal the stability factors improvement from the beginning of 2006 with further decrease of the index value on October 1, 2007 (Figure 1). So, assets quality and liquidity components of the index made the major contribution under identification of negative factors affecting the banking sector soundness. Moreover, in historical retrospective review, in Q3 2007 the assets quality component has the biggest negative value<sup>28</sup>, thus increasing credit risk exposure. Negative impact of the liquidity component decreased compare with previous reporting date.

Influence of profitability, capital adequacy and exchange risk factors compensating partly more strict requirements to coverage of credit and liquidity risks had a positive impact.

Some limitations in index construction should be taken into account. In particular, one of the existing problems of index calculation is identification of statistically significant weights of each component revealing its relative contribution (equal weights of the components were used for construction of this index). It can be achieved by increase in the number of indicators and factor analysis implementation as well as other methods for weight identification. Moreover, using market-based indicators such as prices of banks shares and other indicators as components will contribute “forward-looking” information to the index. The above problems are subject to further studies to improve “purity” and quality of the index.

**Table 1**

**Financial stability index and contribution of its components\***  
(2005 – October 2007, quarterly, at the beginning of a period)



\* calculated on basis of FSA data

Source: NBRK

<sup>28</sup> It also affected by the tightening of classification rules emphasized more on borrower’s financial statement than on collateral value and, as a result, provides more adequate credit risk assessment.