INDICATOR OF ECONOMIC ACTIVITY IN BULGARIA

2 I 2009

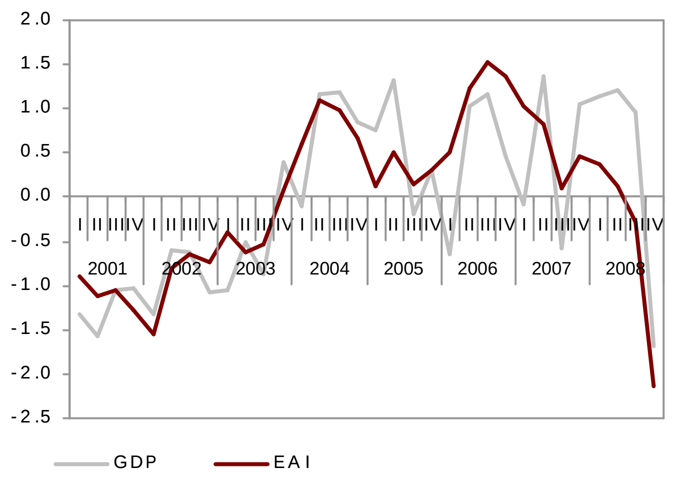
AGENCY FOR
ECONOMIC
ANALYSIS AND
FORECASTING

ISSN 1313-7565

1000 Sofia, 31 Aksakov Str.; tel. 9859 56 01, 981 65 97; fax: 981 33 58; e-mail: aeaf@aeaf.minfin.bg; www.aeaf.minfin.bg

The Economic Activity Indicator (EAI)[1] is aimed at giving an overall picture of the current state of affairs in the Bulgarian economy as well as an account of its long-term and cyclical components. It has been constructed based on a dynamic factor model and consists of eight variables, measuring change in both the internal and external environment[2]. As GDP is another aggregate indicator of business activity, both EAI and GDP have reported more or less the same pattern of dynamics in most periods of survey. This, however, does not imply that change in both indicators was identical[3] because in given periods it may have differed not only in magnitude but direction as well.

Fig. 1: Economic Activity Indicator (EAI) and real GDP growth (normalised)



Source: AEAF estimates, NSI, Eurostat, BNB, World bank

EIA carried on declining for another quarter in a row, hitting a record low in the past few years. All indices, making up the composite indicator, had again an adverse effect on its performance, with the strongest impact being made by industrial sales, global metal and mineral raw material price dynamics and business climate in retailing. The above developments

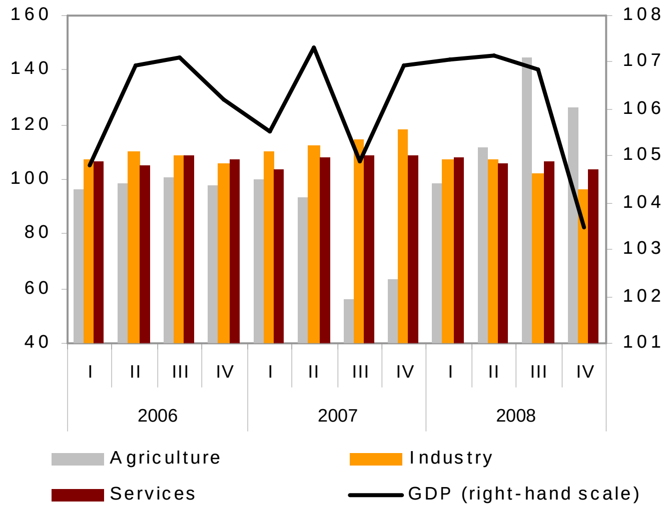
[1] For more information on the methodology of EAI construction, see appendix "Rationale and advantages of the Economic Activity Indicator. Some methodological notes".

[2] The variables, making up EAI, are as follows: GDP, value added in construction, employed numbers, EU-25 GDP, industrial sales, business climate in retailing, long-term loan interest rates in BGN and the global metal and mineral raw material price index.

[3] To achieve better compatability, real GDP growth data have been normalised, i.e. real GDP growth was substracted by the average value obtained and divided by the standard deviation.

were mostly due to the unfavourable external environment and ever-shrinking demand for major Bulgarian exports. Q4 EAI dynamics fully matched data on real GDP growth, which amounted to 3.5% on an annual basis.

Fig. 2: Real GDP growth by economic sector (corresponding period of the previous year =100)

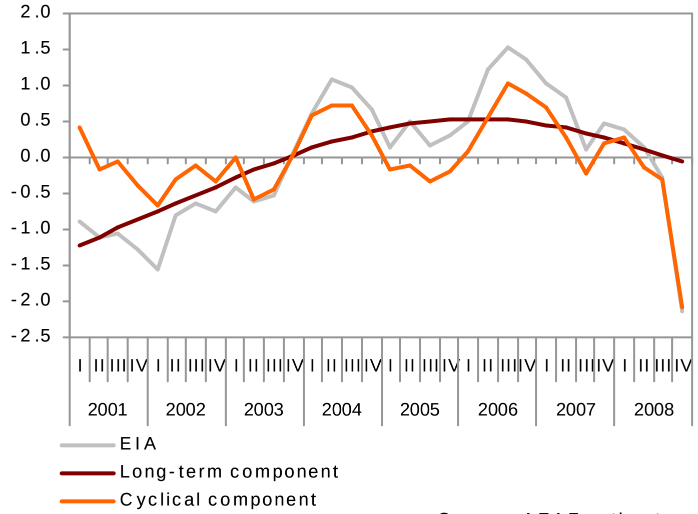


Source: NSI

A breakdown of GDP by value added component further evidenced the strong negative effect of the external environment on the performance of the local economy. The manufacturing sector reported a significant decrease of 3.7% in the fourth quarter due mostly to the processing industries, e.g. severely struck, mining and excavation posted a real value added drop of 18% on a year earlier. Construction stepped up by 4.4% in real terms but at a pace considerably slower than in the past few years, which in turn had a rather unhealthy effect on all up- and downstream industries. Value added in real estate transactions and business services stepped up by a bare 0.7% in real terms, contributing greatly to the indicator's slowdown in the service sector from 6.4% on a quarter earlier to 3.8% in the fourth quarter of 2008.

Though at a slower pace, the service sector continued to be the main engine of value added growth overall in the economy. Agriculture, too, made a positive contribution, as the indicator went up by 26.7% in real terms, having recovered most robustly after the poor 2007 harvest.

Fig. 3: Economic Activity Indicator (EAI) by component



Source: AEAF estimates

In the last quarter of 2008, the long-term component of EAI went on the decrease, and its cyclical component hit a record low since 2001.

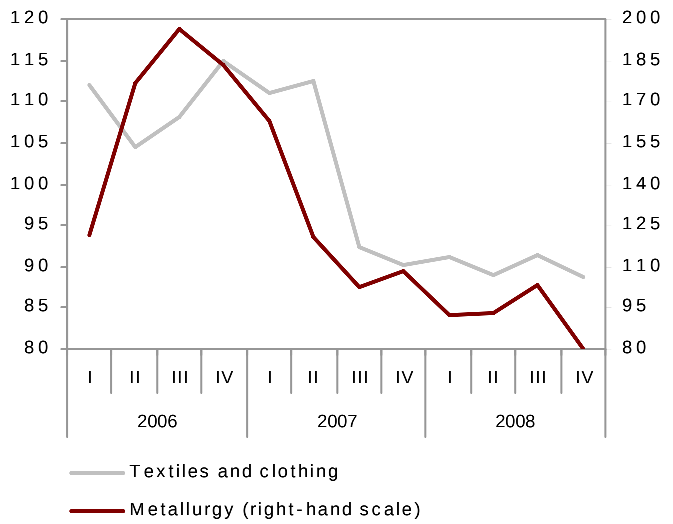
FACTORS, INFLUENCING EAI PERFORMANCE IN THE FOURTH QUARTER OF 2008

Industrial sales

As in the preceding quarter Q4 sales had again the most distinctly negative effect on EAI performance. They reported a 9.2% year-on-year decrease, prompted primarily by the strong impact of the external environment. For the first time in the past few years, domestic sales revenues stepped down by 2.1% while revenues from export sales were steadily declining for a second quarter in a row (from 1.4% in the third quarter to - 17.6% in the last one).

A major contribution to the above sales developments was made by metal casting and manufacturing and textiles due to the ever-shrinking foreign demand. According to Eurostat data, the index of foreign orders in the above-mentioned industries took a downturn to 19.8 and 11.2% respectively in the fourth quarter.

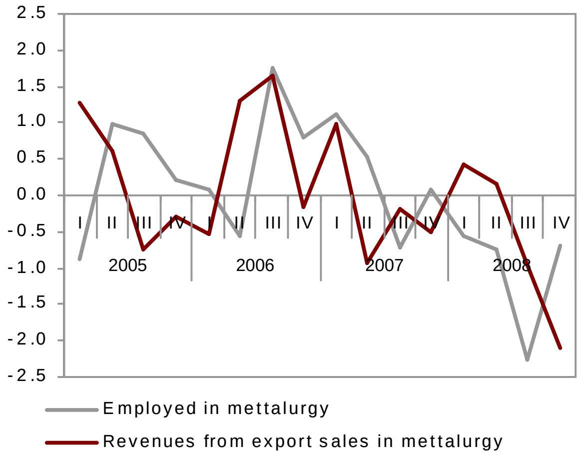
Fig.4. Foreign new order index in textiles, clothing and metallurgy, on an annual basis



Source: Eurostat

Sales dynamics in metallurgy was also shaped by the persistently low metal and mineral raw material prices worldwide. The latter's impact led to an additional drop in revenues and worsening financial condition of many businesses. The reason for this had to do, on the one hand, with the fact metallurgy was the only industry reporting a negative gross operating surplus over the period surveyed. On the other, the employed numbers remained almost unchanged (0.4%) on a year earlier, pointing to production cost optimization, given considerable losses.

Fig. 5: Employment and revenues from export sales growth in metallurgy and the textile and clothing industry



Note : Data are normalised. Source: NSI

Note : Data are normalised. Source: NSI

The quarter sustained the export sales drop in the textile and clothing industries of late 2007. The indicator's dynamics was by and large shaped by the contracting foreign demand as well as the strong competition on the part of the Asian markets. As a result, the employed numbers stepped down on an annual basis.

Almost all processing industries reported lower sales revenues in the last quarter of 2008. However, vehicles, food and beverages and rubber and plastics made a positive contribution, with the year-on-year increase in the industrial sales index amounting to 6.8%, 6.4% and 5.3% respectively.

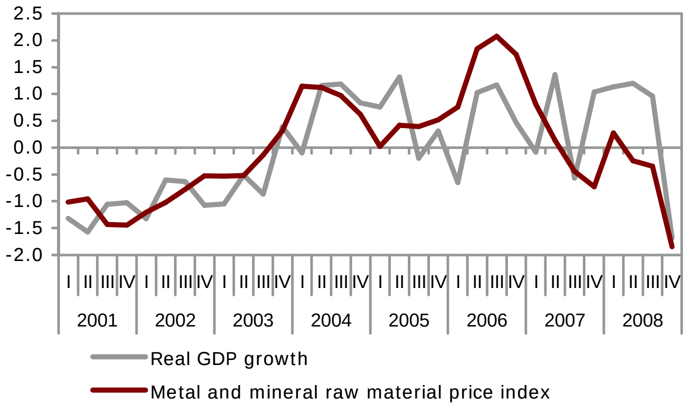
Global metal and mineral raw material price index

In the fourth quarter of 2008 the metal and mineral price index stepped down by 32.7 percentage points, sustaining the downward trend of the preceding quarter when it posted a 7.7 percentage point decrease. The price of copper, which accounts for about 50% of the country's non-ferrous metal exports, went down by 49.2% in the fourth quarter of 2008. The expectations are that it will carry on falling throughout 2009 and 2010 by around 18.9% and 5.5% respectively due to the drastic global demand shrinkage and oversupplies.

The price of lead plunged by 34.9% due to the slump in the automotive industry worldwide. The prices of some other basic metal exports posted a significant fall as follows: aluminum - 34.6%, zinc – 33.1%, whereas the steel price index went down by 8.2 points due mostly to the drastic contraction in demand, oversupplies and stronger US dollar. Some metal prices stepped down well below the production cost curve forcing many manufacturers to downscale their production, as evidenced by data on the sales revenues in the precious and non-ferrous metal industry (10.1% down in real terms in the last quarter of 2008). As for cast iron and steel manufactures and ferrous alloys, the real-term drop ran at 54.6%, triggered largely by the production bottlenecks faced by Kremikovtsi Steel Works.

The metal price decrease had a most adverse effect on exports. On a year earlier, the exportation of non-ferrous metals deteriorated by 37.5% as of the year's end and that of ferrous metals by 30.3%, and their overall weight within total exports contracted from 21.5% at the beginning of the year to 12.9% in the last quarter.

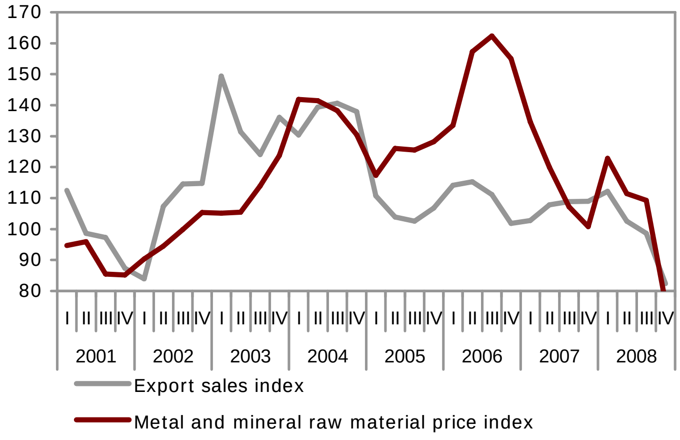
Fig. 6: Real GDP growth and the metal and mineral raw material price index



Note : Data are normalised.

Source: NSI, World bank

Fig. 7: Global metal and mineral raw material price index and export sales



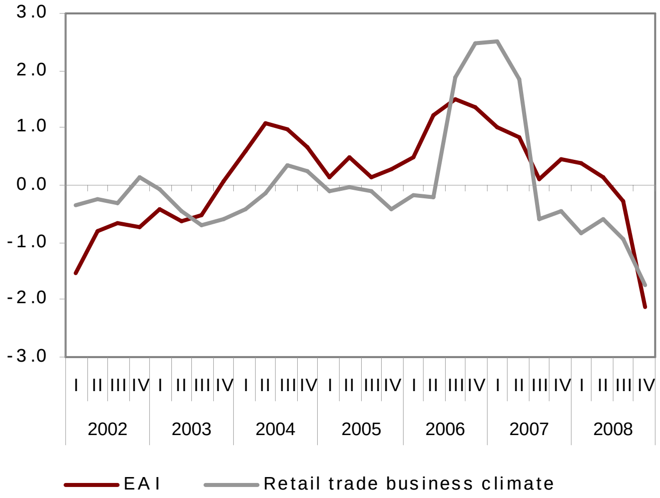
Source: NSI, World bank

According to WB estimates, metal prices are to go on a continuous decline in 2009, with the metal and mineral price index expected to worsen by 25% in the current year, going even further down by another 5% in 2010, as compared to 2008.

Business climate in retailing

The business climate indicator in retailing made a significant contribution to the poor EAI performance in the last quarter of 2008. It deteriorated by 19.1 percentage points on a year earlier due by and large to the downbeat market expectations of the following half-year period as well as the more pessimistic current business situation assessments.

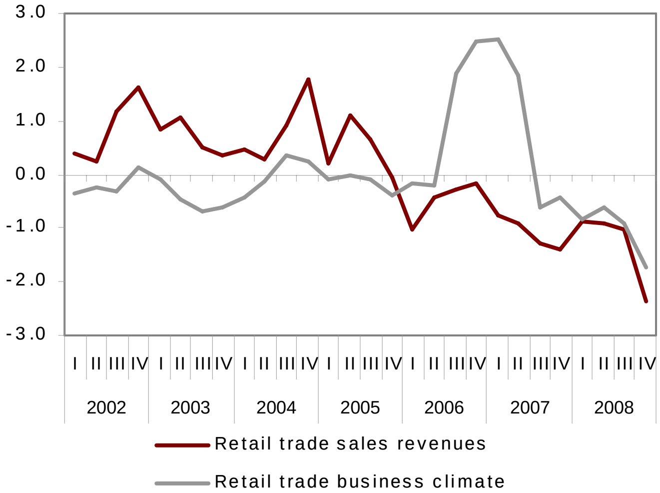
Fig. 8: Economic Activity Indicator (EAI) and retail trade business climate (normalised)



Source: AEAF, NSI

The deterioration in the current business situation was greatly predetermined by the dramatic decrease in demand. The share of employers, reporting a drop in sales volumes, stepped up, whereas selling prices were following a distinct downward trend. Their business expectations pointed mostly to decreasing sales and a volume contraction in both domestic and foreign orders, fully matching the downbeat anticipations of the market situation in both a local and global aspect. Furthermore, the share of businesses expecting a further drop in selling prices went on the increase, as did the share of managers pointing unanimously to a distinctly negative pattern of labour force mobility, spurred by lower demand. Overall, the year-on-year deterioration in the business climate indicator in retailing was mostly due to impediments having to do with financial difficulty and economic uncertainty.

Fig. 9: Retail trade business climate and sales revenues



Note: Data are normalised. Source: AEAF, NSI

Construction

Value added growth in the construction sector slowed drastically down from 12% in the third quarter to 4.5% a quarter later. Some of the factors at work had to do with the decreased foreign financing amounts to the sector as well as the housing credit crunch. At preliminary BNB estimate, Q4 FDI to the real estate sector, renting and business services amounted to MEUR 405.9, posting a 28% decrease on a quarter earlier.

FDI to the construction sector ran at MEUR 96.8, or some 33.4% down on a quarter earlier, fully matching data on the investment activity in the sector, which showed a decrease to 7.9% from 10.7% in the third quarter of 2008.

The external financial market distress made local banks adopt a more cautious approach to their lending policies, and housing loan extensions posted an insignificant increase, with the 12-month loan growth going down from 48.9% in the third quarter to 43.1% a quarter later.

On a year earlier, Q4 output index slowed drastically down to 3.8% vs. 13.9% in the preceding quarter, the drop being more pronounced in residential construction – to 4.8% from 19% in the third quarter, and not so strong with civil construction from 3.9% to 2.2% in the fourth quarter. The period also witnessed some price adjustments in the home market, which according to NSI data stepped down by 4.1%, compared to the preceding quarter.

Q4 planning permits were 12% down on an annual basis, with the indicator going on the decrease in both residential and civil construction.

Fig. 10: Value added in construction and fixed asset acquisition costs

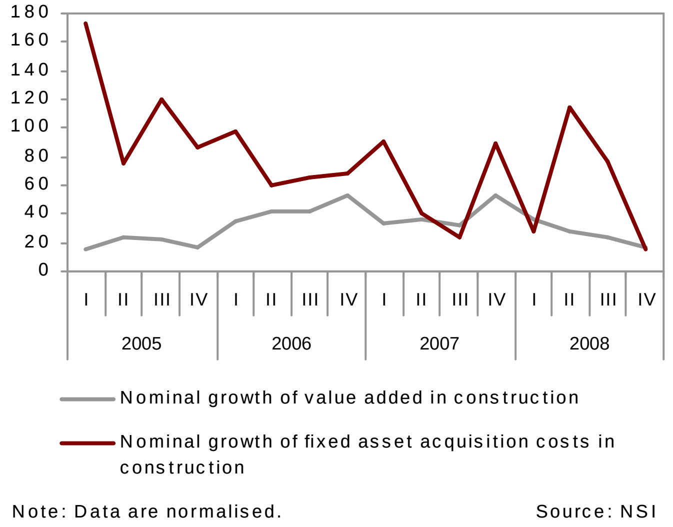
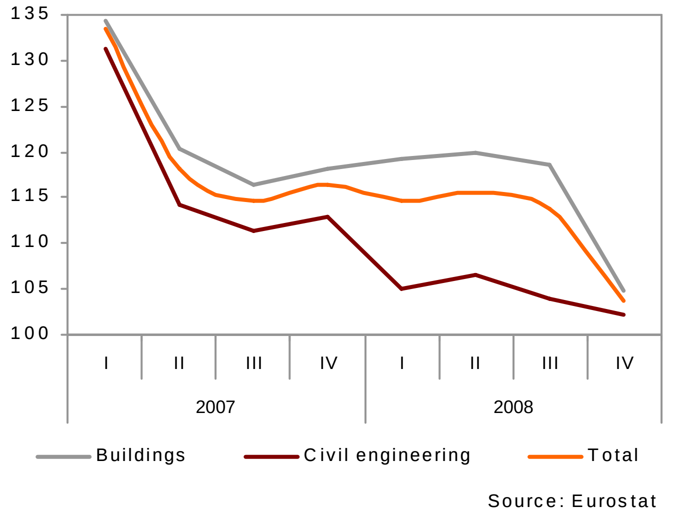


Fig. 11: Production index in construction, on an annual basis

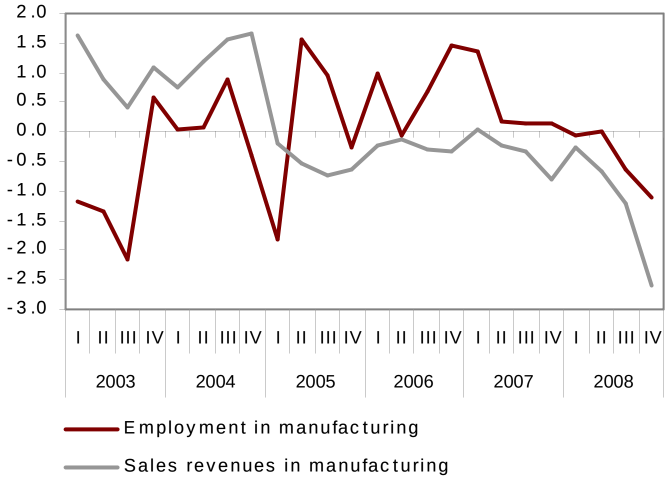


Employment

Q4 employed numbers carried on increasing, though at a slower pace compared to the last couple of years. According to labour force survey data, the indicator's growth slowed down to 1.7%, producing a rather unhealthy effect on EAI over the same period. Employment distribution by aggregate economic sector pointed to a weaker job creation rate in the third quarter in both the manufacturing and service sectors.

A major contribution[4] to the slower pace of employment growth in the manufacturing sector was made by textiles and clothing and some processing industries, not classified elsewhere, where the employed numbers decreased by 1.2 and 1.7% respectively on a 12-month basis. Labour demand in some other industries, e.g. non-metal mineral manufactures, machinery and equipment, electrical and optical equipment stepped down significantly in the fourth quarter resulting in a negligible increase in employment. The above unfavorable developments had to do with the drastic contraction in foreign demand, corresponding to data on decreasing sales revenues, and lower business activity in the last three months of the year.

Fig. 12: Employment and sales revenues in manufacturing growth



Note: Data are normalised. Source: AEAF, NSI

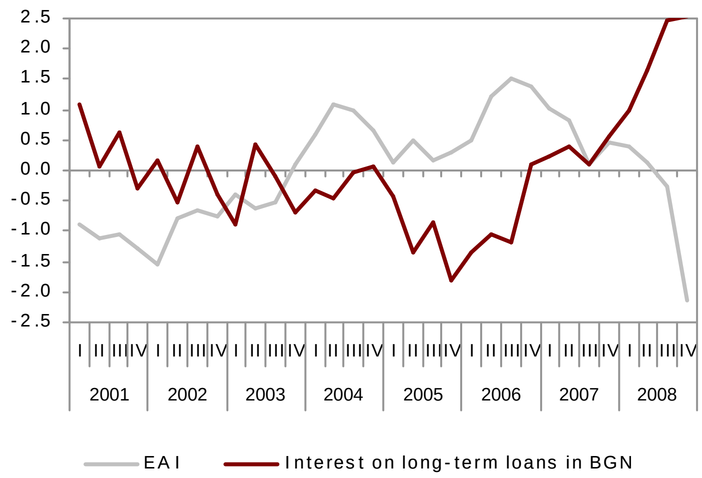
The construction sector reported, too, a slower growth rate in employment in the last quarter of the year due to the weaker lending activity in the country and restricted access of households to loan resources. The lower business activity in the financial intermediation industry affected not only employment but the real estate market, with real estate transactions, renting and business services posting the largest contribution to the growth slowdown in the employed numbers in the service sector.

[4] Analysis based on National Accounts employment data.

Long-term loan interest in BGN

Long-term loan interest rate stepped up for another quarter in a row, producing a most adverse effect on EAI performance.

Fig. 13: EAI dynamics and interest on long-term loans in BGN



Note: Data are normalised.
Source: AEAF estimates

The average interest on long-term BGN loans reached 11.4%, reporting a 1.9 percentage point increase on a year earlier. Despite the end-of-the year decrease having to do with the lower minimum reserve requirements in effect since early December, Q4 interbank market interest rates remained high on an annual basis. The higher cost of loan resources, given the liquidity scarcity and rising risk worldwide, resulted again in higher interest rates on deposits and loans alike. The high country's risk premium led in addition to the retention of loan interest rates at a rather high level. The interest rate spread between Bulgaria and the Euro area remained high, as ECB cut the benchmark rate in November and then in December again.

The high cost of loan resources and cautious approach of all market players had a curbing effect on both credit supply and demand. Growth in private-sector credit started to slow down significantly in the second half of 2008 (by about and over 50% by mid-2008), stepping down to 31.6% as of the end of December. Claims on the non-government sector went on the decrease. As of the end of December, non-financial enterprises and households reported a slowdown in growth to 31.4 and 31.3% on a year earlier. Consumer loan growth posted a rapid drop to 25.1% as of the same period and that of housing loans amounted to 38%.

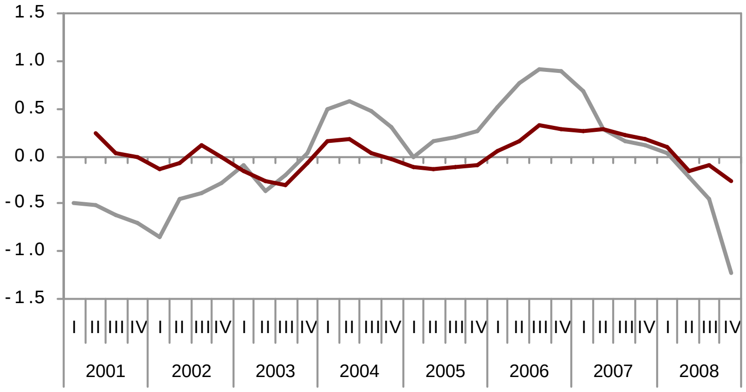
The adverse effect of the rising interest rates and downbeat business expectations led to certain deterioration in the quality of bank credit portfolios.

As a result, the share of non-performing credit stepped up on a quarter earlier, remaining however at a relatively low level of 2.46% of total credit, implying that borrowers had not yet experienced debt servicing problems.

DEGREE OF OVERLAPPING OF THE LOCAL BUSINESS CYCLE WITH THE CYCLE IN THE EURO AREA

Estimates of the correlation between the cyclical fluctuations in the Euro area and the local economy show that the effect of changes in the business situation in the Euro area on Bulgarian economy takes place with a time lag of one period. Moreover, the local busines cycle demonstrates stronger deviations from the long-term average, compared to the business cycle in the Euro area, which makes Bulgarian exports all the more dependent on the global market situation.

Fig. 14: Estimated cyclical fluctuations in the Euro area and Bulgaria



Source: AEAF estimates, CERP, NSI, BNB, World Bank

Note: For more detailed data and methodological notes on the Euro area cyclical indicator EuroCoin, visit http://eurocoin.cepr.org/. As this is a monthly indicator, data have been averaged to make comparison with the quarterly EAI possible. In addition, since EuroCoin excludes only short-term (seasonal) fluctuations in Euro area business activity, it was also necessary to eliminate the long-term trend in the time series, using the Hordrick-Prescott filter.

External environment and its impact on the local economy

EU business activity deteriorated sharply in late 2008 and Q4 GDP stepped down by 1.5%[5] on an annual basis fully in line with the worsening global business situation and liquidity scarcity. This, in turn, led to weaker EU-25 demand both along the lines of investment and consumption. Over the same period, gross capital formation posted a year-on-year decrease of about 6% triggered mostly by fixed investment dynamics. Consumption slowed drastically down to a bare

[5] Eurostat data on EU-25.

0.3%. As demand was steadily contracting, imports declined by 4% in real terms. Exports followed suit reporting a significant drop of -5.5%.

As the impact of the worsening external environment on the local economy began to be more clearly perceived, exports (fob), as a current account item, declined by over 10% on an annual basis for the first time over the past few years as a result of the growing economic problems faced by Bulgaria's major trading partners. A key reason for the above decrease had to do with the ever-shrinking demand for Bulgarian exports in the Euro area and the Balkan and Asian countries, where the indicator stepped down by 6.5, 31.9% and 26.9% respectively. This, together with the lower FDI[6], led to some slowdown in the country's business activity.

[6] Pleriminary estimate.

Rationale and advantages of the Economic Activity Indicator. Some methodological notes

The Economic Activity Indicator (EAI), constructed at AEAF, is aimed at assessing the current state of affairs in the Bulgarian economy. Being a composite indicator it enjoys a number of advantages:

If the data on the variables, making up EAI are revised, the composite indicator's change will run significantly lower than the revisions made to GDP data.

GDP dynamics is sometimes susceptible to sector-specific factors that are often discrete or temporary by nature, and should therefore not be treated as factors affecting the overall economic situation. The breakdown of every time series into a common and specific component allows for the elimination of the impact of temporary and specific factors as well as for adjustments of likely errors in gauging a variable.

EAI has been calculated based on a dynamic factor model applied to quarterly data sets of 63 macroeconomic time series for both Bulgaria and the world business situation. Subsequently, the number of variables making up the indicator has been reduced to eight, with each variable being exploited with its real change in a given quarter on a year earlier. The variables, making up EAI are as follows: GDP, value added in construction, employed numbers, EU-25 GDP, industrial sales, business climate in retailing, long-term loan interest in BGN, and the metal and mineral raw material price index of the World Bank.

Estimates of the cyclical component of EAI have been made by eliminating: (1) the long-term component calculated using the Hordrick-Prescott filter with a multiplier $\lambda = 1600$*. Although the HP filter has been in the limelight of much controversy, it remains the most widely used technique of detrending economic series; (2) the short-term component, accounting for fluctuations within a year that has been estimated using a moving average with 4 lags.*