INDICATOR OF ECONOMIC ACTIVITY IN BULGARIA

#4 I 2009

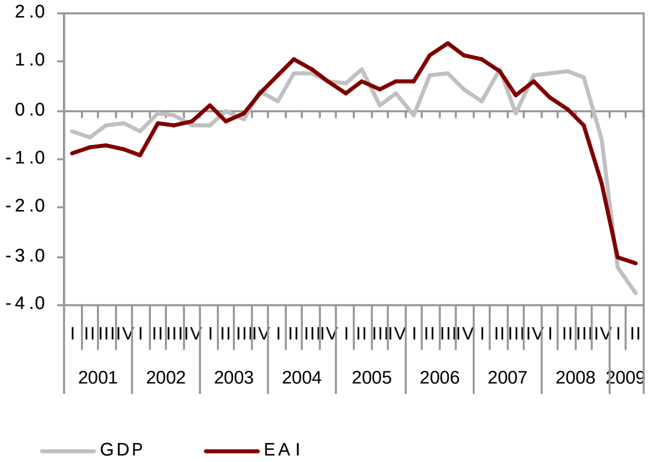
AGENCY FOR
ECONOMIC
ANALYSIS AND
FORECASTING

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

EAI carried on declining for another quarter in a row, steadying, however, around its level of the preceding three months. All variables, making up the composite indicator, slowed down on a quarter earlier, reporting a stronger negative contribution to EAI dynamics. The external environment, as gauged by EU-25 GDP, industrial output, value added in construction and the business climate indicator in retailing, made the heaviest impact on Q2 EAI performance. Over the same period, EAI figures matched fully data on real GDP change, which posted a 4.9% year-on-year drop. The deteriorating external environment and ever-decreasing domestic demand entailed a 7.2% real-term slump in the

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

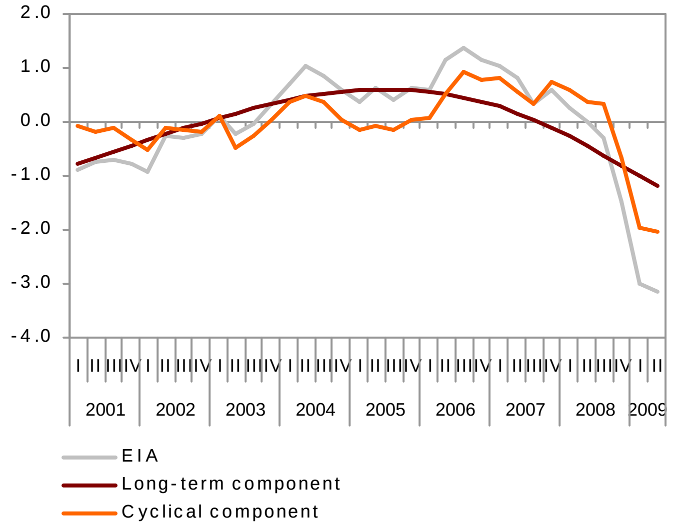
[2] The variables, making up EAI, are as follows: GDP, value added in construction, employed numbers, EU-25 GDP, industrial sales, business climate in retailing, long-term loan interest rates in BGN and the metal and mineral raw material price index.

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

manufacturing sector. As a result, all industries reported a negative value added change, though at a slower pace on a quarter earlier (the excavation and mining industry posted the fastest slowdown of 20.8%, whereas the processing industries made the strongest contribution to GDP decrease of -1.2 percentage points). Furthermore, having declined by 6.1% in real terms in the first quarter, value added in construction now dropped to a decelerated -3% on an annual basis.

Services carried on having a most positive effect on GDP change for another quarter in a row, but the sector's growth rate slowed down to 1.4% vs. 2.5% in the preceding three months. The real estate, leasing and business service industries performed most robustly, growing by 9.2% on a 12-month basis. Financial intermediation continued to post a higher value added increase on an annual basis, but its growth plummeted drastically from 22.2% in the first quarter to 1.4% a quarter later, resulting by and large in a slower growth rate in the service sector. At the same time, transportation, storing and communications going down to -9.3% in real terms vs. a 5.4% rise on a quarter earlier, made the strongest negative contribution to value added growth. Retailing, hotels and restaurants reported a real decrease in value added for a second running quarter.

Fig. 2: A breakdown of the Economic Activity Indicator by component



Source: AEAF estimates

A breakdown of EAI by component indicates that the Q2 decrease was mostly due to its cyclical component. The long-term component stepped down, too. As a result of the higher negative values of the indicator reported, there were some revisions in the long-term component estimates in relation to its 2007 and 2008 levels, bringing about a turnabout in its performance.

Factors influencing EAI performance in the second quarter of 2009

Industrial output

Industrial output went on the decrease as early as the last quarter of 2008, hitting a record low in the second quarter of 2009 and posting a 20.1% year-on-year slump. The main reasons for the above development had to do, above all, with the ever-declining foreign demand and lower global raw material prices. Also, the period witnessed a significant shrinkage in domestic demand too. The majority of industries were affected by the global recession and only 20% of them reported some growth in June.

Metallurgy, in particular metal production and casting and metal manufactures, posted the strongest contribution to the above slump due mostly to the decrease in ferrous metallurgy and lower demand for metal manufactures. Output in the metal casting industry declined by 62.1% on a year earlier, whereas the export sales of cast iron, steel and ferrous alloys went down by 55.9%. Metal manufactures reported a 38.9% output drop on an annual basis. At the same time, the Q2 rise in global raw material prices produced a most healthy effect on precious and non-ferrous metal production, which stepped up by 39.4%.

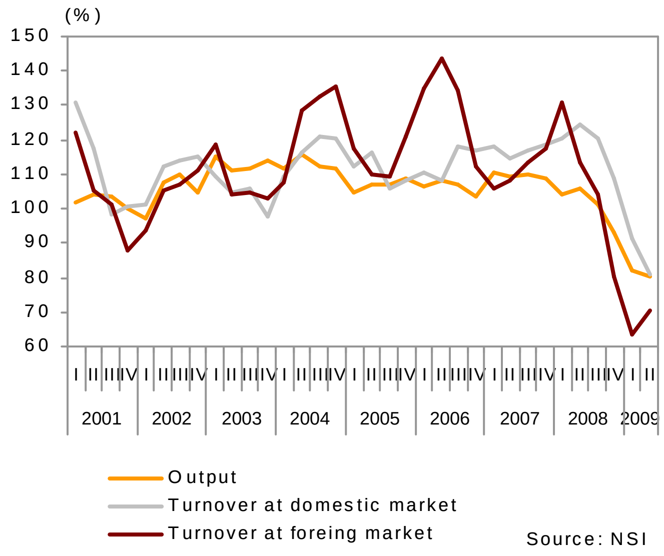
The second largest negative contribution was made by non-metal mineral raw materials, which reported a 38.7% year-on-year output decrease due to the continuous slump in the construction sector.

Chemicals and clothing also reported a significant negative contribution despite the quarter-on-quarter pick up having to do probably with the improved external environment.

The negative contribution of chemicals was due to the 43.9% year-on-year drop in output as triggered by the ever-decreasing foreign demand and low price of fertilizers. Clothing posted a 25.2% decline on an annual basis.

At the same time, a positive growth rate was reported by the following industries: refined oil products, basic precious metals and other non-ferrous metals, sporting gear, radio, TV and telecommunications equipment, printing and recording, fats and oils, milling.

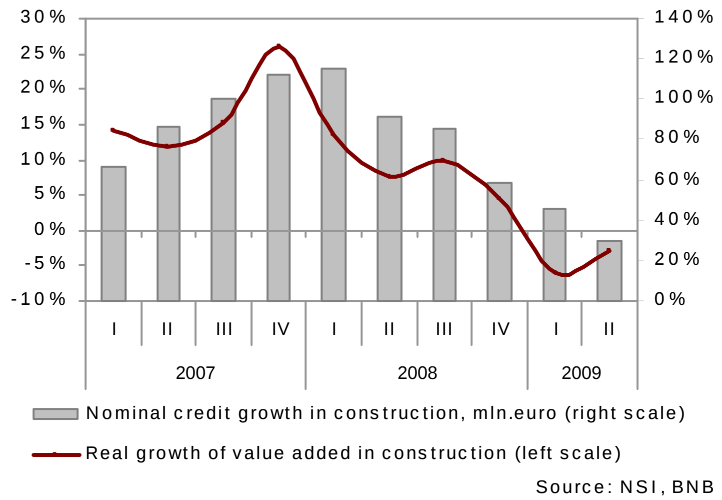
Fig. 3: Output and turnover indices in the manufacturing sector



Value added in construction

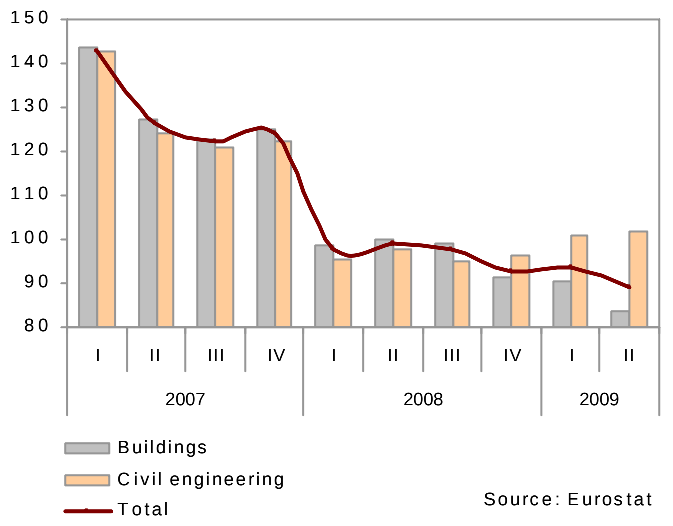
Value added in construction stepped down for another quarter in a row (3% down in real terms on a year earlier), accounting for the lower business activity in the economy. The drop, however, was not as strong as on a quarter earlier (-6.1%), keeping a curb on the EAI downward trend. At the same time, the limited access to financing in the sector since mid-2008 continued to affect the indicator's performance. Loan growth amounted at a modest 30% on average over the April-June period, whereas Q2 FDI ran negative at - MEUR 13.4 as a result of the flight of foreign investment capital from the country.

Fig. 4: Value added and loan dynamics in construction



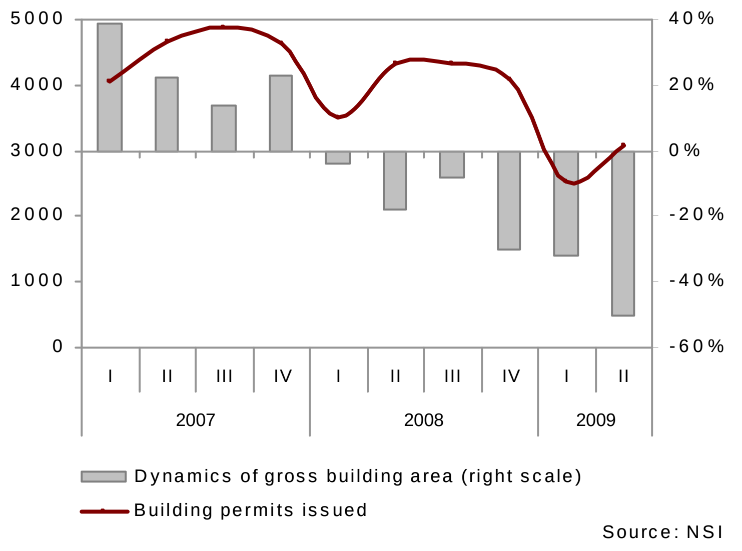
At preliminary NSI estimate of the output index in the construction sector, its negative performance was mainly due to the decline in residential construction. The index went down by 16.1% on a 12-month basis, matching fully the total built-up area statistics over the same period (the indicator shrank by over 60%). As for civil construction, the index went on the increase but failed to make up for the contraction in residential construction. Following the persistent slump of 2008, the index has rebounded since early 2009, growing by 1.7% in real terms in the second quarter, on an annual basis.

Fig. 5: Production output index in the construction sector, y/y



Furthermore, together with the decline in a number of business activity indicators, the number of planning permits over the same period went on the decrease by 29.2% on an annual basis, with this trend being most distinct in residential construction where the indicator deteriorated by over 30%.

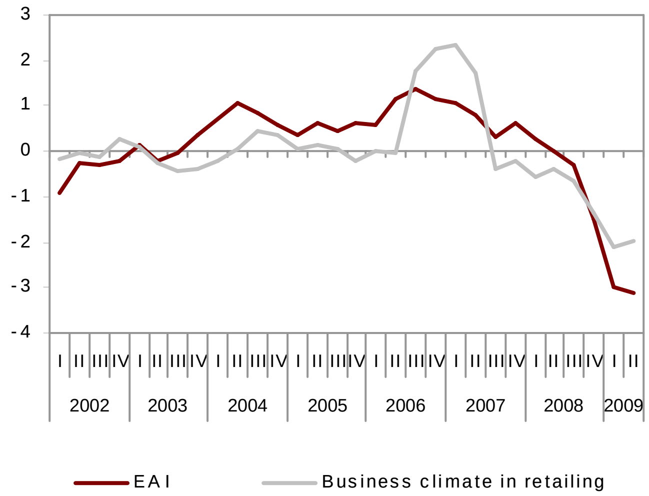
Fig. 6: Building permits issued and gross building area.



Business climate in retailing

The business climate indicator in retailing carried on worsening for another quarter in a row, producing a most unhealthy effect on EAI. Current business situation assessments and expectations deteriorated by 28.5 percentage points on a year earlier due not only to the lower current business assessments but worsening anticipations of the following six months. However, the 12-month decrease in the balance on entrepreneurial assessments ran lower on a quarter earlier, spurred by and large by the relatively less pessimistic view of the business environment.

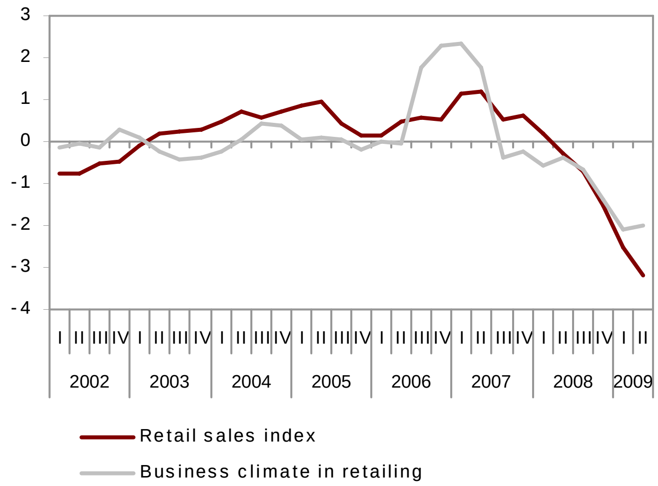
Fig. 7:Business climate change in retailing (normalised) and EAI



Note: Data are normalised.

Source: AEAF, NSI

Fig. 8: Business climate and the retail sales index change



Note: Data are normalised.

Source: AEAF, NSI

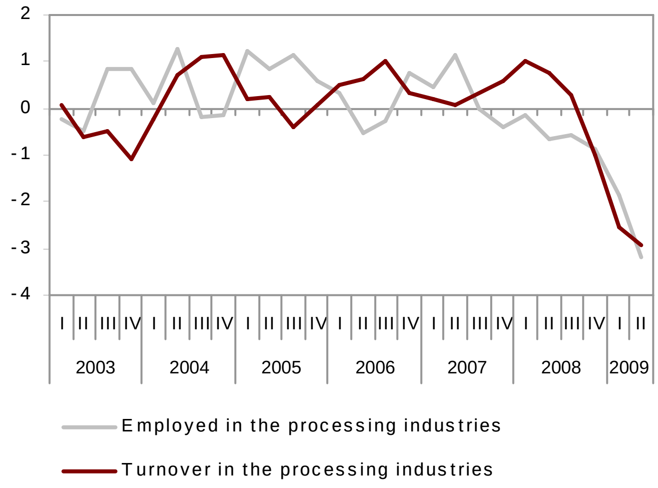
Unlike a year earlier when demand was still robust, prices were going up and sales were increasing, the second quarter of 2009 witnessed a certain downturn in all variables as a result of the ever-worsening demand since the second half of 2008. Sales revenues followed suit, plunging by 10.1% on average over the April-June period on an annual basis, with all retail industries but food, tobaccos and beverages (2.5% up in real terms) going on the decrease. The strongest negative sales growth rate was reported by retailing in computer and communication equipment, household appliances, furniture, fuel and lubricants due to the deferred consumption of durables. The business surveys conducted among entrepreneurs pointed to a significant rise in the share of respondents (up to 40.4%) reporting acute financial problems.

Though at a slower pace on a quarter earlier, business expectations in retailing carried on worsening on a 12-month basis due mostly to the decrease in order volumes, both local and foreign, shrinking domestic demand and decline in sales expected. A growing share of respondents (24.6 points up on a year earlier) reported stronger expectations of a retail price retention in the second quarter, outpacing the share of businesses anticipating a slight decrease in prices. Furthermore, the lower business activity in the sector was the reason behind the negative dynamics of labour mobility. Together with insufficient demand, economic uncertainty and financial problems remained the main impediments faced by retailers.

Employment

Q2 employed numbers in the economy stepped down at a faster pace to -2.1%[4] on an annual basis and continued to affect adversely EAI performance. The negative employment growth had to do with the lower private-sector employed numbers (2.8% down), duller foreign demand and weaker business activity in the country. A breakdown of the employment figures by sector of the economy indicates that the overall decline was due to the agricultural and manufacturing sectors, whereas service employment posted a negligible increase on a year earlier. The processing industries and construction made again a major contribution to the employment decrease in the manufacturing sector.

Fig. 9: Change in the employed numbers and turnover in the processing industries



Note: Data are normalised. Source: AEAF, NSI

[4] Labour force survey data.

Fig. 10: Employment and construction output index change

Note: Data are normalised. Source: AEAF, NSI

According to employee and employee compensations data, the overall employed numbers in the processing industries declined by 10.2% on a year earlier, with the strongest decrease being posted by textiles, clothing and footwear, rubber, plastics and other non-metal mineral raw materials, chemicals, etc. This fully matched data on the declining export and domestic sales, hence revenues. The slower growth in lending and limited access to loan resources led to a weaker business activity in the construction sector and affected employment – the average employed numbers stepped down by 3%[5] on an annual basis.

Q2 business activity figures show that the service sector faced fewer impediments compared to the manufacturing industries and posted a positive growth, accounting for the aggregate increase in jobs of 1.1% against the April-June'08 period. The heaviest contribution to the above increase was made by finance and insurance services, research and development[6], public administration and health care. As for retailing, labour demand ran lower on a 12-month basis and the employed numbers steadied around their level of a year earlier. A decline in service employment was also reported by hotels and restaurants, transportation, storing and communications, fully matching statistics on the weaker business activity (on an annual basis) in the industries.

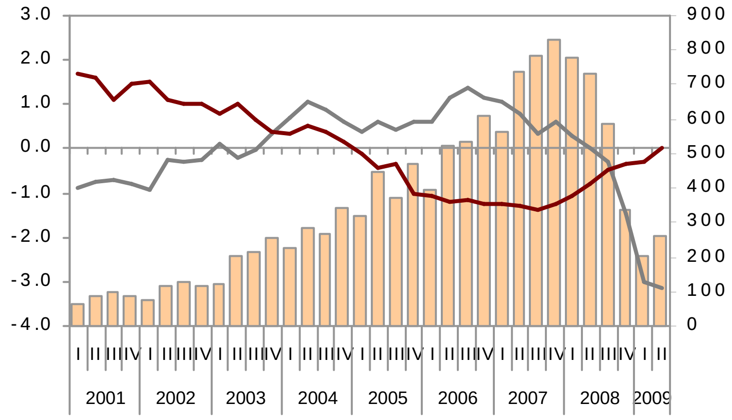
Long-term interest in BGN

Throughout April to June, long-term interest in BGN carried on rising to reach 12.1%. Nevertheless, the interest rate dynamics had a curbing effect on EAI performance mainly due to the fact that the quarter-on-quarter decline in the indicator's cyclical component. The indicator may have hit a peak in its cyclical performance and is very likely to start sliding down as of the second quarter.

[5] Labour force survey data.

[6] Employee and employee compensation figures show that the growth reported was due to the increasing employed numbers in the business service industry.

Fig. 11: EAI performance and long-term loan interest rates in BGN



Note: Data are normalised.

Source: BNB, AEAF estimates

The indicator's upward trend was mostly shaped by the growing interest rates on consumer loans. On a quarter earlier, they advanced by 1.3 percentage points to 13.7% on average in the April-June period. Housing loan interest stepped up, too, though in a lesser degree, to 10.16%. At the same time, it was the cost of corporate credit alone that went down to 10.47%.

The interest rate dynamics, cautious approach of all market players, together with the downbeat short- and long-term expectations had a curbing effect on credit demand. Despite the quarter-on-quarter increase from BGN 206 million to BGN 264 million, new loan extensions ran well below the volume levels posted in 2008.

According to BNB monetary statistics, private-sector credit growth carried on slowing down to 11.8% as of the end of June. Unlike the previous quarter when economic uncertainty and lower loan growth had no effect on the quality of commercial bank credit portfolios, the indicator now worsened and as of the period's end the share of bad loans and work-outs stepped up to 4.69% vs. 3.11% in March due mostly to the deteriorating quality of corporate credit.

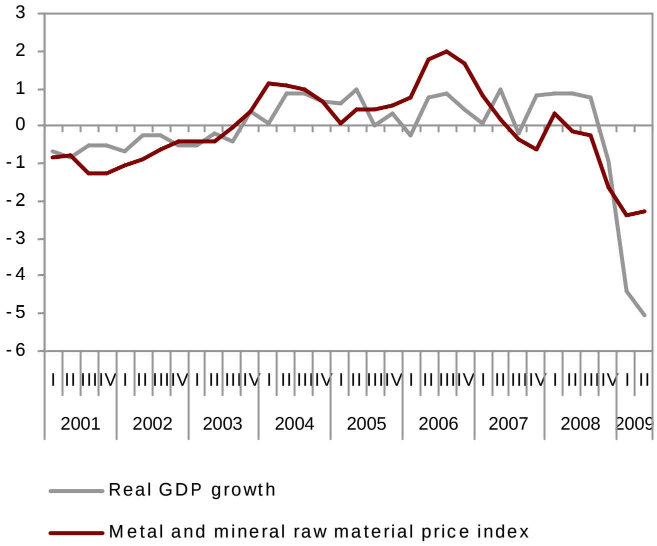
Global metal prices

The metal and mineral price index rebounded in the second quarter, going up by 7.9%, as compared to the January-March period. All this led to a weaker year-on-year drop to 38.6% from 41.2% on a quarter earlier. Nevertheless, the shrinkage in global metal consumption persisted, and prices were not expected to step up significantly. The price of copper rose by 36% in the second quarter, hitting a year's high due to the sizable Chinese exports and drop in the scrap supply as well as decreasing stocks world wide. From 2010 onwards copper prices are expected to step up at a moderate pace due mainly to the stronger Chinese demand. The price of lead advanced by 29.5% on a quarter's average but remained well below its last year's level, reporting a 12-month drop of 20%. The Q2 recovery had to do with the rising exports from China and stronger demand for car batteries. At the same time, while going up by 9.2% in the second quarter, the price of aluminum posted a most drastic year-on-year fall of 49.5% as a result of the significant net exports and growing inventories on the part of China, given excess supply world wide. 2010 prices are expected to step up even further but lag significantly behind their last year's high.

The price of zinc increased by 25.7% running, however, some 30.3% down on a year earlier. The expectations are that zinc prices will advance at a rather moderate pace and the unused production capacity will be put in operation. The steel price index carried on decreasing, reporting a year-on-quarter drop of 21.5%. Metal prices are expected to remain relatively stable in the following half-year period, as much of the 41% decline anticipated already took place between 2008 and 2009.

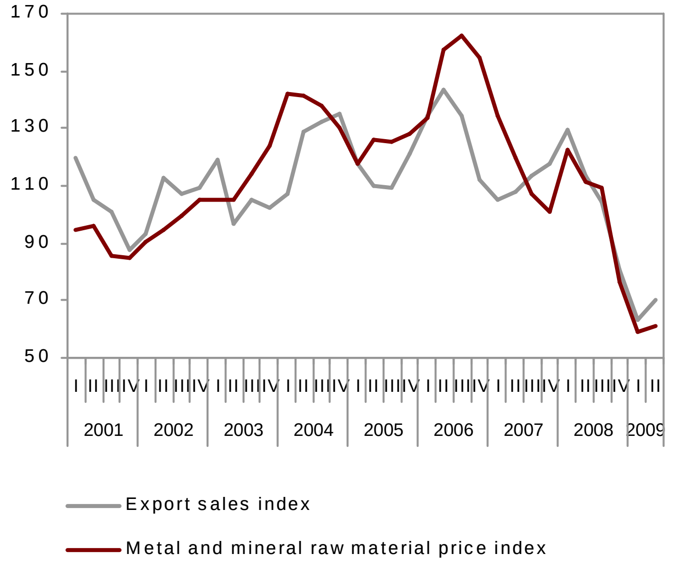
The recovery of metal prices led to some revival in the non-ferrous metal industry where output picked up by 39.4% on an annual basis. As for cast iron, steel and ferrous alloys production, the annual shrinkage was further sustained in the quarter due by and large to the problems faced by the Kremikovtsi Steel Works.

Fig. 12: Real GDP growth and the global metal and mineral raw material price index



Note: Data are normalised. Source: NSI, World Bank

Fig. 13: Global metal and mineral raw material prices and foreign trade turnover



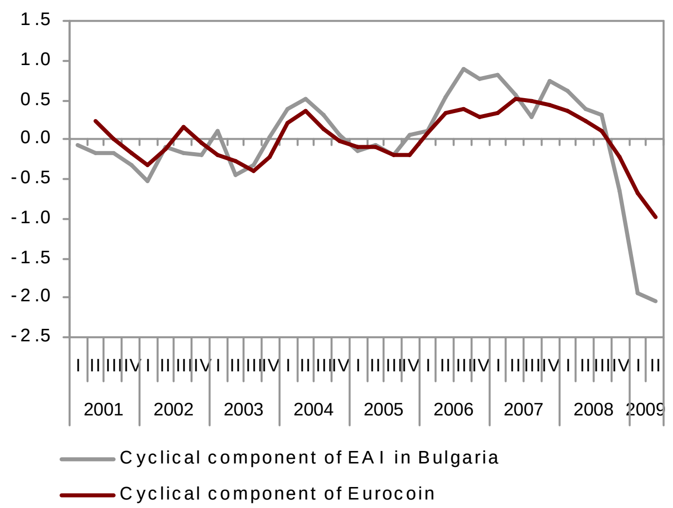
Source: NSI, World Bank

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 (i.e. a quarter). Moreover, the local business 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.

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

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.



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

EU-25 business activity carried on deteriorating for another quarter in a row. On a 12-month basis, the real decrease in GDP ran at 5.5%, with all components of the indicator on the demand side reporting worsening dynamics on a quarter earlier. A major factor behind the adverse developments in the EU economy had to do with the ever-decreasing investment activity. Gross fixed capital formation reported a 13% year-on-year decline vs. 11.6% on a quarter earlier. Final consumption stepped down for another running quarter by 1.4%. Furthermore, along with domestic demand, net exports made a negative contribution to business activity in EU-25. Both exports and imports carried on shrinking in real terms by 17.5 and 15.4% respectively relative to the second quarter of 2008.

The continuous slowdown in EU-25 business activity reinforced the negative effect on the Bulgarian economy. The lower exports (29.4% down on a year earlier) to EU member states had a leading contribution to the slump in the country's total exports. Exportation to other major Bulgaria's trading partners – Balkan and Asian countries, followed suit, going down by 48.2 and 39.3% respectively. However, it should be noted that Q2 decreases tended to steady around their levels on a quarter earlier. According to ECB analysts, the EU economy hit a trough in the first quarter and although the second quarter sustained the distinctly negative trends of performance, the adverse dynamics can be said to have been less pronounced compared to the earlier period[7]. The expectations are that the EU economy will start to recover due to the stabilization processes underway worldwide. This, in turn, will have a positive impact on the local economy with a view to the lagged effect of the developments in the EU economy on the local economy.

[7] The survey findings have drawn upon seasonally adjusted quarterly data on EU-25 GDP, whereas the indicator's dynamics has been estimated on a quarter-to-quarter basis.

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 for 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 evaluating: (1) the long-term component 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 have been estimated using a moving average with 4 lags.*