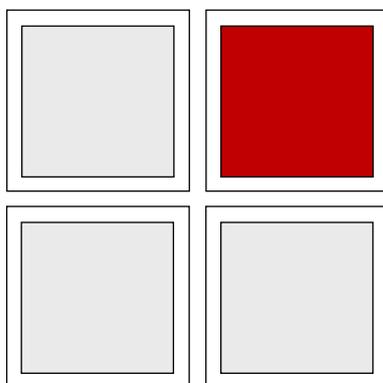
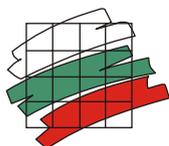


INDICATOR OF ECONOMIC ACTIVITY IN BULGARIA



2 | 2008



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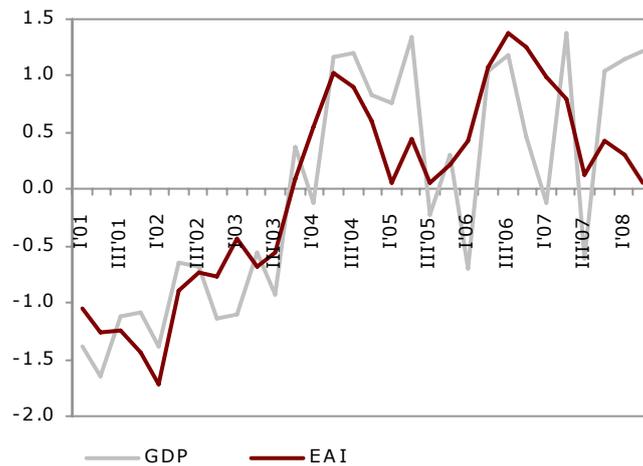
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The Economic Activity Indicator (EAI)¹ is aimed at giving an overall picture of the current state of affairs in the Bulgarian economy as well as an account of its long-term and cyclical components. The indicator has been constructed based on a dynamic factor model and consists of eight variables, measuring change in both the internal and external environment². 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 identical³ 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

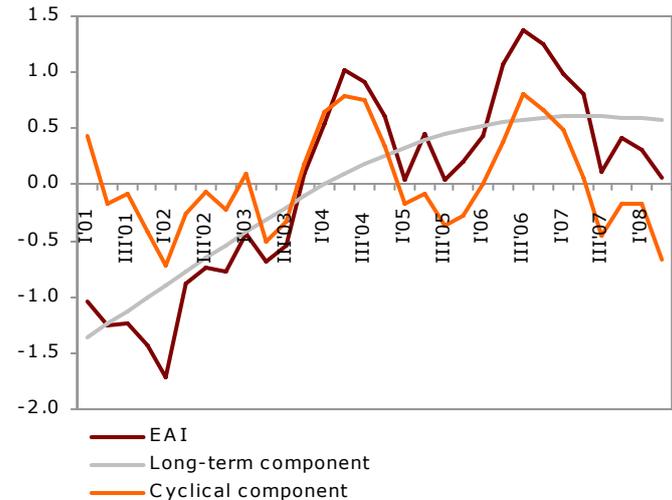
¹ For more information on the methodology of EAI construction, see appendix „Rationale and advantages of the Economic Activity Indicator. Some methodological notes“.

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 compatibility, real GDP growth data have been normalised, i.e. real GDP was subtracted by the average value obtained and divided by the standard deviation.

Q2 real GDP growth advanced by 7.1% on a twelve-month basis. Due to the slower export growth and faster increase in imports net exports deteriorated, making a negative contribution to growth in the economy. Domestic demand stepped up, as triggered mostly by the robust rise in investments of 32.4%, boosting business activity. At the same time, EAI posted a quarter-on-quarter decrease. All the components, making up the composite indicator, had a negative effect on its performance, with the strongest contribution being made by the global metal and mineral raw material prices, value added in construction and employment.

Fig. 2: Economic Activity indicator (EAI) by component



Source: AEAf estimates

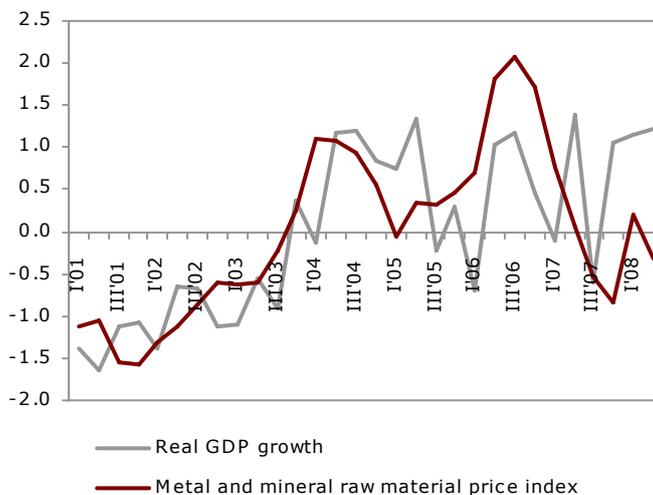
FACTORS, INFLUENCING EAI PERFORMANCE IN THE SECOND QUARTER OF 2008

Global metal and mineral raw material prices

The lower rise in global metal and mineral raw material prices posted the strongest negative contribution to the deterioration of the composite indicator on a quarter earlier. The retention in the main commodity prices followed a cyclical pattern and had to do with the growth slowdown worldwide.

Q2 price rise stepped up by 11.5% on a yearly basis, declining by 11.3 percentage points on a quarter earlier. All basic metal groups but steel and tin reported a slower price increase. Producer price elasticity in metallurgy is high, and together with the slower pace of selling price rise had a negative effect on the whole industry. On the other hand, metallurgy enjoyed a significant share in both total industrial production (17.3% in 2007) and export revenues (23.9% of Q2 export sales in 2008). In a mid-term perspective, metal prices are to step down as a result of the downbeat growth expectations of the world economy and boosted supply.

Fig. 3: Real GDP growth and the metal and mineral raw material price index



Note : Data are normalised.

Source: NSI, World bank

Fig. 4: Global metal and mineral raw material prices and export sales



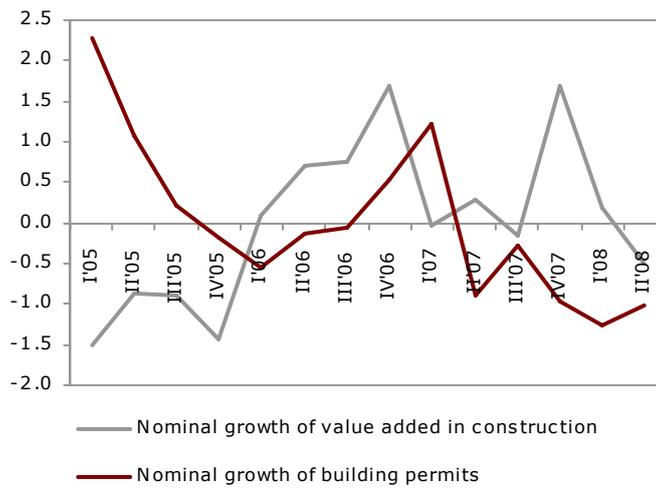
Source: NSI, World bank

Value added in construction

Value added in the construction sector was another factor having a curbing effect on EAI performance. The indicator slowed down on a quarter earlier, growing by only 7.7% on a twelve-month basis. One of the reasons behind the economic activity deceleration in construction was the decrease in the residential building permits issued on a year-to-year basis. Hotels and restaurants was the other industry that had a rather negative influence. Its value added growth decelerated significantly on a year earlier, having to do largely with the unused capacity as a result of the overbuilding factor in many holiday resorts over the past few years.

A likely shrinkage in the construction and building permits issued discerned since the start of the year as well as the impact of the global financial crisis may have an adverse effect on the sector's business activity. Expectations remain upbeat, though. In the medium term, the sector is anticipated to sustain its strong pace of growth. Estimates are based on the significant fixed asset acquisition costs made in the last few months, indicating a positive attitude to its future performance and the implementation of vital infrastructure projects.

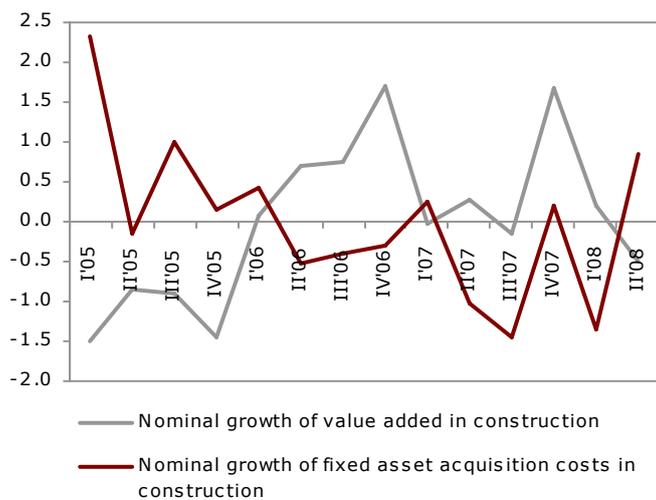
Fig. 5: Value added in construction and residential building permits



Note : Data are normalised.

Source: NSI, AEF estimates

Fig. 6: Value added in construction and fixed asset acquisition costs



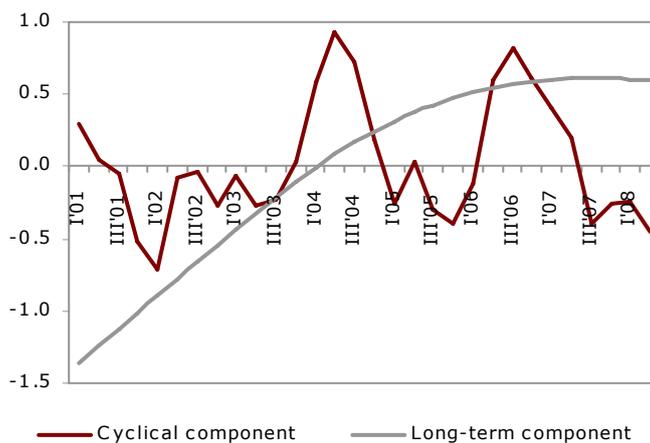
Note : Data are normalised.

Source: NSI, AEF estimates

Employment

Twelve-month change in the employed numbers had a relatively great effect on EAI dynamics in the second quarter of 2008. On a quarter earlier, employment growth slowed down, affecting the composite indicator rather adversely in the period surveyed. The slower pace of increase in the employed numbers had to do with the worsening cyclical component of the variable.

Fig. 7: Cyclical and long-term components of employment



Source: AEAf estimates, NSI

According to labour force surveys, employment growth over the same period remained relatively high at 3.7% due mostly to the long-term component of the variable. The latter has been steadily rising since mid-2004 at a gradually slowing pace, though. In a mid-term perspective, employment growth is to carry on stepping down with a view to the adverse demographic developments in the country and deepening labour market gaps as regards skilled labour scarcities.

Long-term loan interest rates in BGN

Long-term loan interest rates kept going up in the second quarter of the year, producing an unhealthy effect on the country's business activity.

The upward trend in interbank interest started as early as the second half of 2007 and was further sustained throughout 2008, now taken up by deposit and household and corporate loan interest rates. The interest rate dynamics was shaped by three key factors at work. However, it is difficult to say which one had the upper hand.

First, the global financial crisis of August 2007 undermined investor confidence and brought about a major slump in liquidity. All this was coupled with higher interbank market interest, affecting local interest rates because of the higher cost of loan resources. Second, the country's inflation picked up at a faster pace, posting record-high levels in the past few years. As inflationary pressures in the economy had not eased by mid-2008, banks began to raise the interest rates on both deposits and loans in an attempt to attract more savers while providing for their credit portfolios. Third, another important reason behind the higher interest rates had to do with BNB tightened monetary policies in effect since September when the Central Bank raised the minimum required reserves from 8 to 12%, pushing the cost of loan resources even higher.

Higher interest on corporate and household loans may affect economic agents directly by discouraging them to borrow money. This process may indirectly lead

to the same effect by raising debt servicing costs for the corporate and household sectors alike, therefore bringing about a decrease in their disposable income and ultimately curtailing private consumption and/or investment, i.e. undermine economic growth. The higher interest rates, however, failed to put a downward pressure on credit demand. Twelve-month growth in private-sector loans amounted to 51.36% as of the end of July, accounting for a drop from the record highs of December 2007 (62.65%), but still running well above the benchmark credit growth ceilings set out by the Central Bank of 20-25%. Moreover, the quality of bank credit portfolios did not show any signs of deterioration, implying that neither the corporate sector nor households had experienced difficulty in servicing their liabilities. The chief reason for this had to do with the high return on investment projects financed by way of loan resources and stronger increase in the purchasing power of the salaries earned.

Given the current economic situations, commercial banks are expected to impose exacting requirements for the credit eligibility of borrowers, in particular their solvency, and tighten access to lending. Accordingly, the upward trend in interest rates is likely to be sustained in the short term.

Business climate in retailing

In the period surveyed, the indicator worsened on an annual basis, producing an adverse effect on EAI performance. NSI business surveys indicate that the unfavourable developments were by and large prompted by the business situation expectations, the lower anticipations as to foreign order volumes in particular. The decrease in expectations was due to the high base of 2007 following the country's accession to EU. And yet, the indicator reported some quarter-on-quarter improvement, as triggered by the more upbeat attitudes of the respondents as to higher selling prices and lower obstacles to supply in the industry.

Industrial sales

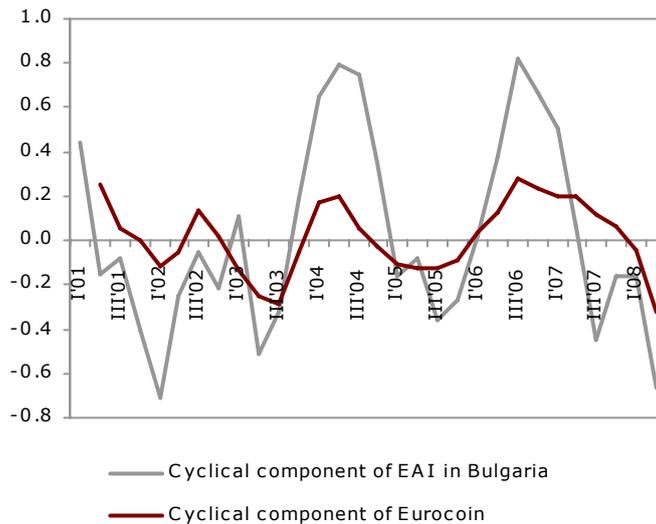
Q2 sales made a negative contribution to EAI dynamics. According to monthly survey data, sales growth stepped down from 8.2 to 5.7% on a yearly basis, compared to the preceding quarter, as a result mostly of the year-on-year increase in export sales of only 2.4%. Also, much of the sales drop had to do with the declining sales in the *clothing* and *textile* industries facing stiff competition on the part of Asian manufacturers in the EU markets, hence a shrinkage in export volumes. The *steel, cast iron* and *ferrous alloy* industry, too, posted a negative contribution due mainly to the liquidity problems and decrease in production experienced by Kremikovtzi Steel Works, and lower ferrous metal prices.

At the same time, it should be noted that sales in some of the industries picked up at a faster pace, with *machinery and equipment* posting the heaviest contribution as a result of the stronger export revenues. It was a steady upward trend enhanced by the growing number of foreign orders, which indicated stronger competitiveness of the industry.

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

Fig. 8: Estimated cyclical fluctuations in the Euro area and the Bulgarian economy

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 Hodrick-Prescott filter.



Source: AEAf estimates, CERP, NSI, BNB, World bank

Figure 8 shows the correlation between the cyclical fluctuations in the Euro area and the Bulgarian economy. The degree of correlation in the period surveyed amounted to 0.72 and 0.46 respectively, i.e. the fluctuations were passed onto the local economy with a time lag of one or two periods. The dynamics of the indicators suggested a faster pace of transfer of Euro-area developments into the Bulgarian economy.

Expectations as to the influence of EU on the Bulgarian economy

2007 growth in the EU economy ran at 2.9% while stepping down on a year earlier. The downward trend persisted throughout 2008, as further aggravated by the US mortgage crisis and soaring oil prices. The crude oil price went up sharply to over USD 100 per barrel, skyrocketing to about USD 150 but began declining in mid-2007 as a result of the reduced estimates of short-term global consumption released.

Domestic demand was the key factor at work behind weaker EU growth. Investment picked up at a slower pace due to the repercussions of the US financial and mortgage market crisis that only made investment risk higher. All

in all, the economic outlook for the EU economy was worsening because of lower demand and poor export growth. The ever-growing financial market pressures and rising interest and consumer and energy prices worldwide had an adverse effect on consumption and investments. Expectations indicated a growth rate in the EU economy of 1.4%⁴ on an annual basis in 2008 vs. 2% pointed by the estimates of April this year.

EU inflation ran well above the target set out by the European Central Bank According to Eurostat data, EC-25 inflation in August reached 4.1% on a 12-month basis. The higher energy and food price inflation had both a direct and indirect effect on the price level. At the same time, wage growth picked up at a healthy clip whereas productivity went on the decrease, triggering in turn an increase in unit production costs. According EC estimates, inflation in 2008 is to hover around 3.8%, expected to decelerate next year at a slower than expected pace, though, due to the steadier rise in food and energy prices.

The latest developments in the global economy, e.g. the US financial market crisis and price shocks in the international markets are expected to affect the local economy in both a direct and indirect way. The persistent heavy pressures in the US financial markets may send investment risk even higher while making foreign investors all the more cautious. Given an ever-growing uncertainty worldwide, the cost of financial resources is expected to rise, bringing about a change in the structure and volumes of the capital inflows into the country (along the lines of a smaller share of FDI at the expense of debt capital). At the same time, the financial problems in the US economy have already had their effect on the performance of the local stock market. A large number of foreign investors opted out of the local stock exchange as early as the start of 2008. In this sense, any further disturbance in the global financial markets is expected to have a fading out effect on the local market. In addition, the flight of capital from the Bulgarian stock exchange is very unlikely to cause further disturbances in the local economy as the market is still flat.

However, growth slowdown in Bulgaria's major trading partners is expected to produce a more palpable effect on the local economy. The expected growth deceleration in EU member-states is anticipated to report a strong negative contribution to the country's exports, hence GDP growth because EU demand accounts for 60% of the country's export total.

At the same time, the strongly volatile oil market remains a hard to predict risk. Bulgaria is heavily dependent on crude oil supplies. As the local industries are relatively high energy-intensive, global price increases are affecting not only the price dynamics in the economy, but the current account deficit, disposable income and business costs as well.

⁴ Estimates of the European Commission, September 2008.

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

The Economic Activity Indicator (EAI), constructed at AEEF, 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 Hodrick-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.