

**Economic Activity Indicator in
Bulgaria
#4/2010**

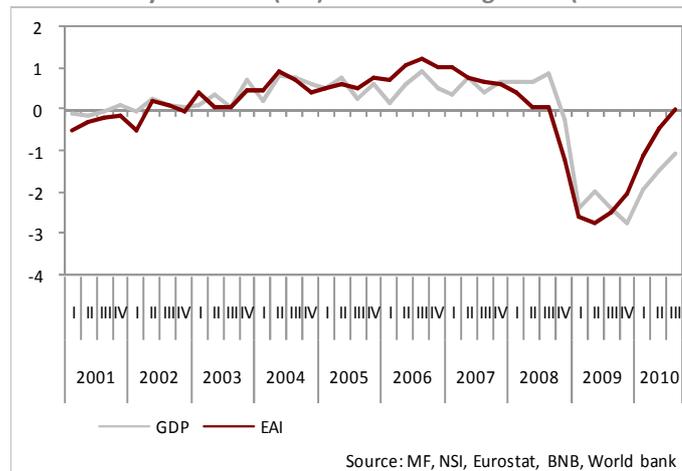
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The Economic Activity Indicator (EAI)¹ is aimed at giving an overall picture of the performance of the Bulgarian economy, as well as an account of its long-term and cyclical components. It has been constructed based on a dynamic factor model and consists of eight variables, measuring changes in both the internal and external environment.² GDP is the most popular aggregate indicator of business activity and EAI and GDP have reported more or less the same pattern of dynamics over time. Nonetheless, as it can be inferred from Fig. 1, the two indicators have had variations in their dynamics both in terms of magnitude and even of direction of change.

Fig. 1: Economic Activity Indicator (EAI) and real GDP growth (normalized*)³



*See Ref.3

In Q3 2010 the EAI marked a fifth quarter in a row improvement to a value of slightly above 0, turning positive for the first time since Q3 2008. The indicator's progress was due mainly to the ongoing foreign demand revival, coming from the rise in the EU economic activity and supporting the upward trend in the metal and

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

² The variables, making up EAI, are as follows: GDP, value added in construction, employed numbers, EU-25 GDP, industrial sales index, business climate in retailing, long-term loan interest rates in BGN and the metal and mineral raw material price index. Since the beginning of 2009 the series on industrial sales index was discontinued and on this reason replaced by an industrial production index. The EAI recalculation did not produce any significant difference compared to previous calculations using the industrial sales index. The latter holds true with respect to the 2010 revisions on the national GDP, GVA in construction and business climate in retailing. Due to insufficient information on the GDP and its components as of the period of this issue preparation, the Q3 flash estimate on seasonally adjusted GDP was used, and a forecast on GVA in construction was produced. Additionally, the flash estimate (seasonally adjusted) on GDP in EU 27 rather than EU 25 was used for composing the Q3 EAI.

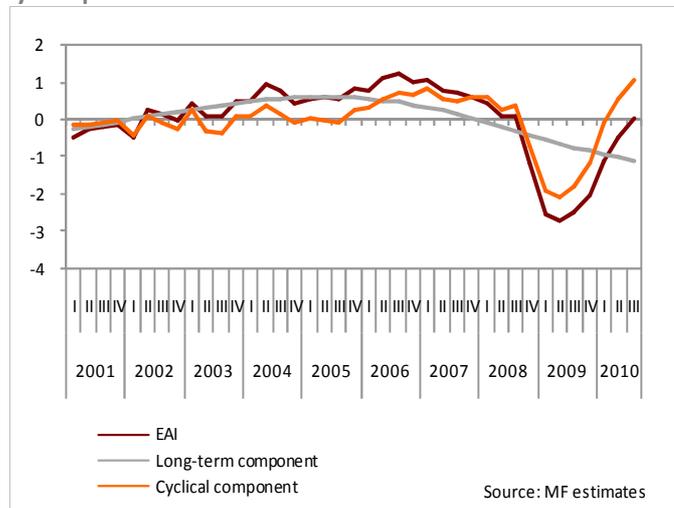
³ To achieve better compatibility, real GDP growth data have been normalised, by subtracting the mean and dividing by the standard deviation of the series.

mineral material prices, making a positive repercussion on the local industrial developments. Among the rest of EAI composing variables, long-term interest rate on loans in BGN also made a contribution on the positive side, as it further decreased year-on-year for a second quarter since end-2007.

Domestic demand remained weak, explaining the feeble impact on the EAI development of the GVA in construction, business climate in retailing and employment. Q3 flash GDP growth estimate followed the EAI pattern of advance, being positive of 0.2% on a year earlier. On the demand side, exports of goods and services accelerated the pace of real growth to 18.6%, along with some further import volume recovery, while domestic demand continued to contribute negatively with a deepening drop in final consumption (of 7.3%) and a further, albeit decelerating, decrease in gross capital formation (of 6.5% year-on-year). As regarding the supply side, industrial and agricultural sectors slowed down the pace of real increase, while the service one continued reporting a negative dynamics of 1.7% on a year earlier.

Q3 structure of EAI by components pointed to a further decrease in the long-term ingredient, meanwhile the cyclical one has followed the opposite direction being positive for a second quarter in a row.

Fig. 2: EAI by components



Factors influencing on the EAI performance in Q3 2010

The ongoing recovery at the EU level reinforced the positive effect on the demand for Bulgarian exports and influenced positively on the local industrial developments.

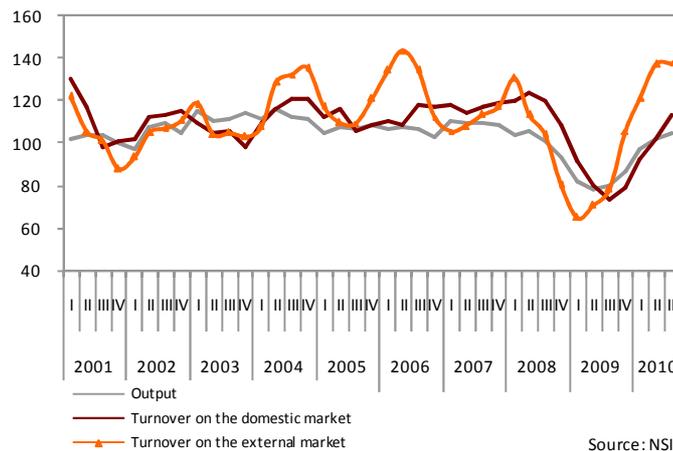
Q3 2010 EU economic activity carried on increasing for a third quarter in a row. Eurostat flash estimate on the seasonally adjusted real EU 27 GDP growth pointed to a further improvement on the positive side to 2.1%, from a rate of increase of 2% in Q2 year-on-year. The first marked real economic growth in Bulgaria over the last more than a year and a half has actually followed the increased EU economic activity with a two-quarter lag compared to most of the old member states and a one-quarter lag as compared to most of the new member states.

The ongoing recovery at the EU level reinforced the positive effect on the demand for Bulgarian exports. According to the balance of payments statistics, the exports to trading partners has been continuously expanding to a nominal rise of 48% in August on a year earlier, with the most significant impact being made by the groups of old Member states, EU new member states and the Balkan countries (with nominal-term increases of 41.6%, 74.3% and 58.6% on a year-to-year basis, respectively).

As the local industries are relatively high export-oriented, the rise in foreign demand made a positive repercussion on industrial production, the latter following an improving pattern of development. Q3 industrial production index reported a 4.7% year-on-year increase, hastening up from a rate of 1.6% in Q2. Industries producing goods for intermediate consumption contributed most for the positive developments in manufacturing. In the early stages of a recovery more robust growth is normally seen in the intermediate goods sector, supporting production for investment and final consumption. That is why raw materials prices have picked up significantly as world recovery gained pace, acting as an additional incentive to speed up production and exports of the goods, that are currently favorably priced.

On a disaggregated level, **production increased in almost all processing industries.** The biggest contributions to the overall rise were made by the manufacturing of basic metals, wood and wood products and chemicals, with year-on-year increases in the industrial production index of 9.1%, 39.5%, and 34.9%, respectively. According to Eurostat data, the index of new orders in all main aggregates of the processing industries continued to increase in Q3. However, the industrial index in textile and wearing apparel and in transport equipment made negative contributions, reporting a decrease of 1.6% and 11.5%, respectively.

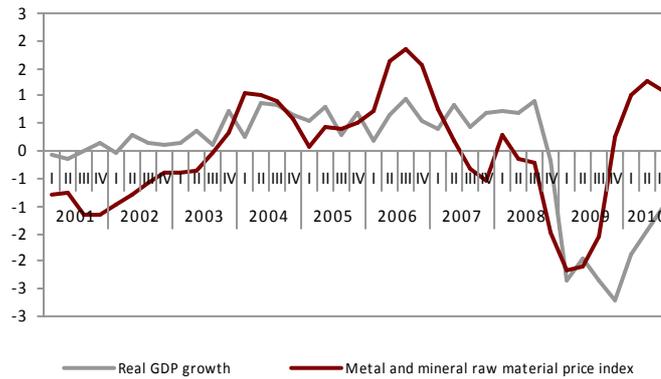
Fig.3: Production and turnover indices in the manufacturing sector



The recovery in Bulgarian exports was further reinforced by the increase in the metal and mineral price index. The latter stepped up by 43.6% in Q3 year-on-year, sustaining the upward trend of the preceding three quarters. All basic metal groups, making up the price index had a positive effect on its performance, with the strongest rise being made by the iron ore – its Q3 price more than doubled on a year earlier. Prices of some other basic metal exports posted a slowdown as compared to Q2 but sustained the double-digit pace of increase: steel products index – 10.2%, aluminum – 15.3%, copper – 23.6%.

The above developments were also supported by the business survey results in the manufacturing sector. Q3 manufacturing business climate has marked an increase of 5.9 p.p. for the first time after a prolonged period of decrease year-on-year, following the improved assessments of both the current and future business situation. The average capacity utilization as of July slightly decreased as compared to previous April's survey results, but remained close to the beginning of 2009 levels. The improvement in the balance assessment of new order inflow has continued, while the production assured with orders remained stable to 5.3 weeks. Finally, confidence in the manufacturing sector, although still negative, went on improving as well.

Fig.4: Real GDP growth (normalised*) and the global metal and mineral raw material price index



Source: NSI, World bank

*See Ref.3

Still decreasing business climate in retailing year-on-year but improving as compared to Q2 due to current situation assessment improvement and demonstrated optimism on the future expectations.

The upturn in domestic demand has so far been lagging as compared to foreign sector developments. Business climate in retailing⁴ decreased further by new 1.2 p.p. on a year earlier. A strong improvement however was made as compared to Q2 development year-on-year, following from the less pessimistic assessment of the current economic situation, along with future business expectations being appraised by 5.3 p.p. more optimistically.

The assessment of the current situation improved. Even though the balance of the running situation has decreased on a year-to-year basis, the share of employers who have negatively assessed the current situation has decreased for the first time over the last more than two years and a half. There is also an unbroken improvement in the current state of affairs as regarding sales volumes and a higher share of employers who have raised prices. The latter developments could also be confirmed by the reversal in the pace of sales turnover decrease since Q2 year-on-year on, slowing down to 4.6% in Q3 from a double-digit rate of decline of over 12% in Q1. The still strongly persistent difficulties referring to insufficient demand, uncertain economic environment and financial problems continued to impede the sector's development.

⁴ Data on the business climate trends were revised backward since June 2010, following the NACE 2008 classification.

Fig. 5: Business climate in retailing and retail trade turnover index dynamics (normalized*), y/y



Source: MF, NSI

*See Ref. 3

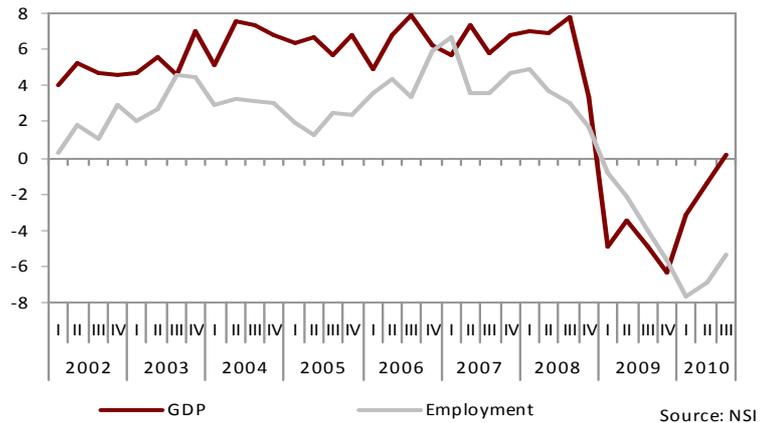
For a third quarter in a row the balance of employers' expectations on the future business trends in retailing has increased. More optimistic views were given on the volume orders, both domestic and foreign, with a bigger improvement in the foreign ones. Furthermore, for a second consecutive quarter over the last more than one year and a half the share of managers expecting a rise in sales and prices have increased on a year-to-year basis. Those expectations are positively linked to the more optimistic views on the employment developments, confirmed by the improving balance of employment expectations by 4.5% on the positive side on a year earlier.

Seasonal factors drove employment improvements in Q3. In fact Q3 continued on feeling the liveliness on the labour market started in Q2 on a quarterly basis, proved by the 1%⁵ rise in employment numbers. This however follows the previous years' seasonal pattern of employment dynamics, as the increase was mostly due to tourism, trade and construction sectors.

Still strong employment decrease year-on-year within a fragile economic environment improvement. Some time would be needed for the labour market to respond to the economic cycle changes.

⁵ LFS figures.

Fig.6: GDP and employment dynamics, %, y/y



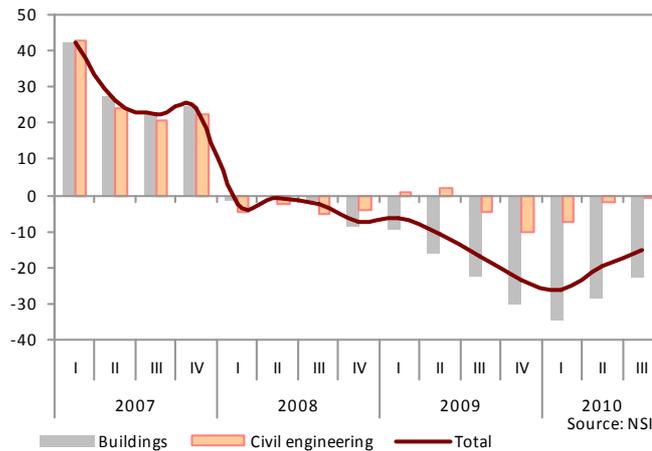
On a year earlier, the drop in employed decelerated more clearly as compared to Q2, but remained rather strong – 5.4%. All the three aggregate economic sectors slowed down the pace of employment decrease, with the biggest contributors to the overall yearly decline being again the processing industries and construction. Q3 figures on the number of employees⁶ pointed to some positive, albeit small, labour demand reaction to the restored growth in production and industrial turnover in few sectors - manufacturing of wood material and paper and manufacturing, non-classified elsewhere. These positive developments however could not influence the overall employment in processing, as it has been dominated by some labour-intensive industries, such as manufacturing of textiles and clothing, where the recovery has not been clearly felt yet. Furthermore, some sectors like manufacturing of basic metals and of machines and equipment, despite the revival coming from the foreign demand increase, continue reporting strong rates of workers' decrease due to the pursuit of improving productivity gains and competitiveness abroad.

Construction activity remained weak, hindered by the low financial security of the businesses and poor demand of production, especially in the building construction subsector.

In Q3 2010 the construction output index stepped down by 15% on a year earlier, marking an improvement from a rate of decrease of 19.3% in Q2 y/y. The amended sector's development could be explained primarily by the less negative growth in the engineering construction (in fact increasing in August and September), positively influenced by the proceeded work in the field of roads and highways construction, while the building subsector continued on reporting double-digit drops of an average rate of 23% on an annual basis.

⁶ Enterprise survey on wages and employees.

Fig. 7: Production index in construction, %, y/y



Disappointing results in the building construction in particular had to do with the still low credit activity and the depressed demand of construction output.

There was some positive mortgage loans' long-term interest rates development (both in BGN and EUR) in Q3, reporting a downward trend on an annual basis. At the same time the overall volume of new housing long-term loans made an improvement on the positive side but remained rather narrowed. The latter has to do with the unfavorable labour market situation and still high uncertainty of economic agents regarding their labour and income status.

Financial liquidity problems continued to be spelt out by the construction employers as the most important impediments for their business development⁷. The latter hampered the investment activity in the sector and the newly issued building permits, especially on housing construction, have continued on the decrease on a year earlier. The overall construction index in Q3 remained far below its 2007-2008 peaks.

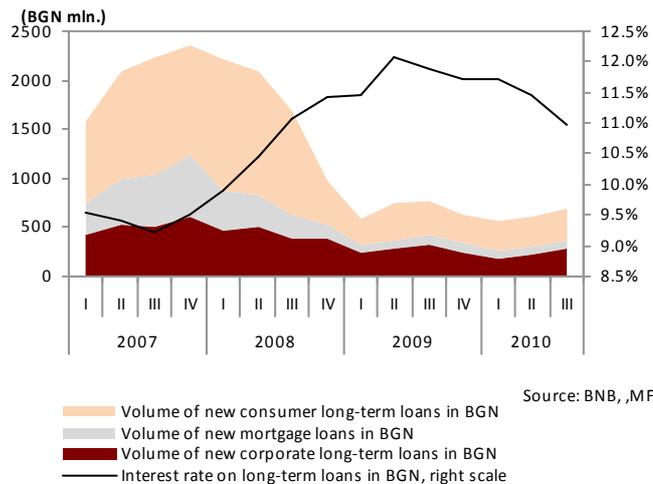
Q3 interest rate on new long-term loans in BGN averaged 11%, marking the lowest reached level since Q3 2008. Recent indicator's developments continued to reflect the reversal in the last over 2-years' upward trend, by reporting a drop down on a yearly basis (by 0.9 p.p.) for a second quarter in a row.

Both the corporate and households' sectors got lower costs of newly granted long-term resources, with a larger decrease being made by the price of consumer and housing loans, going down by 1.5 p.p. on a year earlier to 12.5% for the first type, and 1.4 p.p. to 8.9% for the second type of credits.

Interest rate on new long-term loans in BGN stepped down year-on-year. Still high caution of all market players however hampered the loan volume revival.

⁷ According to business trends survey.

Fig. 8: Interest rate on long-term loans in BGN and volumes of new corporate, mortgage and consumer long-term loans (BGN)



Even though the cost on new BGN loans decreased, the still high caution of all economic agents has made a curbing effect on both the supply and demand of credit resources. Long-term loan total volume decreased by 9.9% year-on-year to BGN 730.5 mln. An improvement on a quarter earlier however was registered, mainly due to nonfinancial enterprises credits, with volume stepping up by 29.1%, and consumer credits, increasing by 10.5%, while the interest rates on both categories stepped down to respectively 9.6% and 12.5%. Nevertheless recent liveliness in new long-term BGN loans volume, the latter remained lower as compared to its 2009 levels.

Q3 overall private sector credit growth⁸ continued on decelerating to about 1.9% year-on-year. The pace of slowing down was more pronounced in the growth rate of loans to corporate sector as compared to the households' one. The credit growth slowdown has finally contributed to a further rise in non-performing loan share from 9.45% as of the end of June to 10.61% as of the end of September 2010⁹.

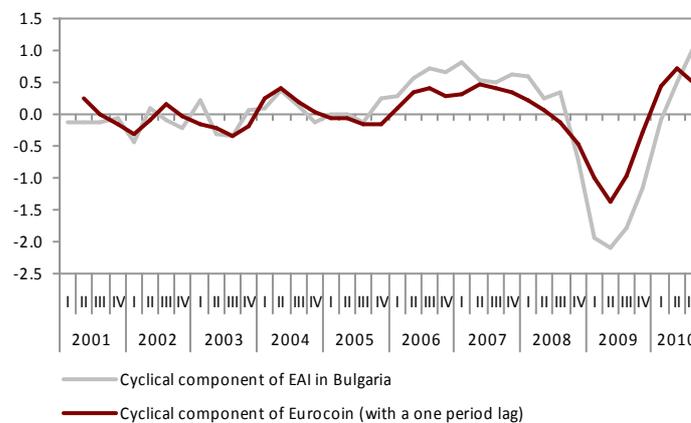
⁸ BNB monetary statistics.

⁹ Share of classified exposures past due over 90 days in gross loans (excluding those to credit institutions), BNB banks' statistics.

Degree of overlapping of the local business cycle with the cycle in the Euro area

Estimates of the cyclical fluctuations in the Euro area and the local economy show that **the effect of changes in the external business situation takes place with a lag of one to two quarters at the most.** Moreover, the local business cycle demonstrates stronger deviations from the long-term average compared to the cycle in the Euro area, which in turn is associated with the high elasticity of the local cycle to changes in the external environment.

Fig. 9: Estimated cyclical fluctuations in the Euro area¹⁰ and Bulgaria



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

¹⁰ 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.

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

The Economic Activity Indicator (EAI) has been constructed at the Agency for economic analysis and forecasting in an attempt to assess more fully the current performance of the Bulgarian economy. With the shutdown of the agency, the construction and interpretation of the indication will be done at the Ministry of Finance.

Being a composite indicator, the EAI 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. 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.