INDICATOR OF ECONOMIC ACTIVITY IN BULGARIA

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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:

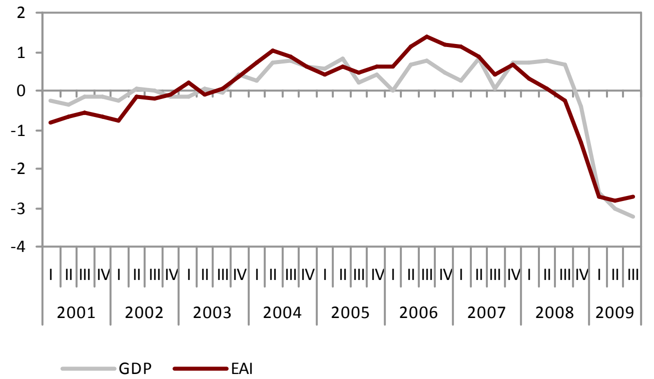
- If the data on the variables, making up EAI are revised, the composite indicator's change will run significantly lower than the revisions made to GDP data.
- GDP dynamics is sometimes susceptible to sector-specific factors that are often discrete or temporary by nature, and should therefore not be 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 . 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.

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:
*EAI and real GDP growth, normalized**



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

** See Ref. 3*

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[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.

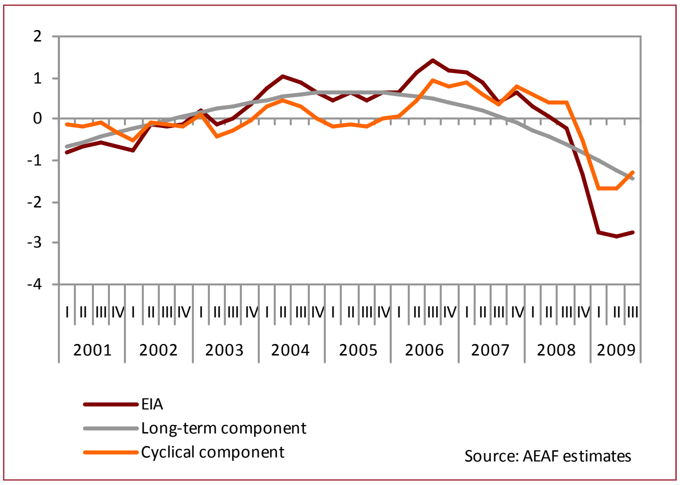
[3] To achieve better compatability, real GDP growth data have been normalised, i.e. real GDP was substracted by the average value obtained and divided by the standard deviation.

Having followed closely the downward trend that started in mid-2008, EAI carried on declining for another quarter in a row. However, unlike the preceding two quarters when all its components made a negative contribution to its change, the majority of them now reported a positive contribution to the composite indicator's dynamics. This was mostly due to the decline slowdown, compared to the April-June'09 period.

The healthy effect of the Euro area GDP[4] on EAI as well the worldwide rebound of metal prices on a quarter earlier and slower increase in long-term loan interest in BGN can be taken to be the first signs of a recovering external environment.

Industrial output and the business climate indicator in retailing had a positive effect on the indicator's performance. The only negative impact on the composite indicator was posted by output in construction and unemployment.

Fig. 2:
EAI by components



Q3 EAI dynamics largely matched real GDP change, which reported a 5.4% year-on-year drop due mostly to the lower domestic demand[5] having to do with the increased caution of the local economic agents,

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[4] Seasonally adjusted quarterly data on Euro area GDP. The indicator's dynamics is given on a quarter earlier.

[5] The period witnessed not only a decrease in consumer spending of 5.2% but a significant contraction in investment activity as well.

higher investment risk, unfavorable business environment and limited access to loan financing. At the same time, the external sector reported a stronger contribution to GDP under the impact of the first signs of economic recovery in Europe. A most notable improvement was posted by exports, which followed a slower pace of decrease from 17.4% and 15.8% respectively in the first and second quarters of 2009 to 6.7% in the third one, and the trade balance turned positive for the first time since 2003.

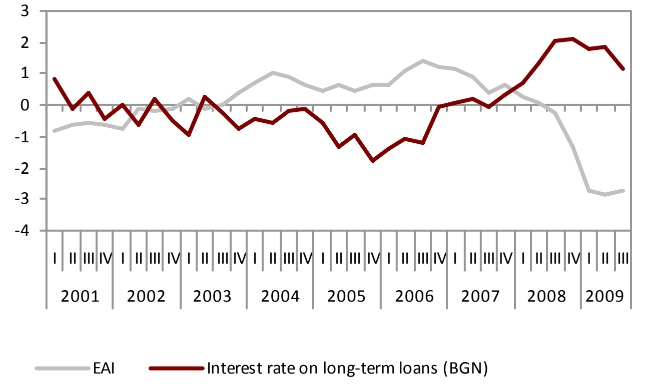
The breakdown of EAI by component in the third quarter shows that the indicator’s slump was mostly due to its long-term component. The cyclical component stepped down too but remained well above its Q2 level and did not lead to any changes in the composite indicator’s performance.▼

Factors influencing EAI performance in the third quarter of 2009

Long-term loan interest in BGN

The Q3 slowdown in BGN long-term loan interest rates had a curbing effect on EAI performance. The interest rates advanced by 0.8 percent points on average to 11.9%. The above development was mostly due to the lower cost of corporate loans, which stepped down to 10.2% from 10.5% in the April-June period. At the same time, the cost of consumer and mortgage loans went up by 0.3 percentage points to 14 and 10.4% respectively.

Fig. 3:
EAI and interest rate on long-term loan in BGN (normalized)*

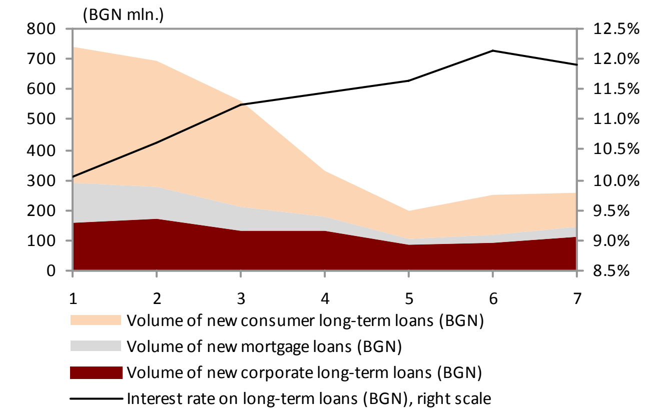


Source: BNB, AEAF

** See Ref. 3*

As a result of the growing caution of all market players, the reduced demand for loan resources affected the interest rate dynamics as early as the beginning of 2009. The volume of new long-term loan extensions stepped up by a bare 2.4% on a quarter earlier to BGN 270 million. Despite the indicator's increase with corporate loans having to do with the lower cost of resources, it was offset by the drastic decrease in consumer credit extensions. As a result, the indicator with all types of loans remained unchanged on a quarter earlier while lagging considerably behind its 2008 levels.

Fig. 4:
Interest rate on long-term loans and volume of new corporate, mortgage and consumer long-term loan in BGN



Source: BNB, AEAF

According to BNB monetary statistics, as of the end of September private-sector credit growth decelerated by 5% on an annual basis. The volumes of new loan extensions to the non-government sector hit an all time low. The loan growth slowdown affected the quality of commercial bank credit portfolios. As of the same period, the share of bad and restructured loans carried on rising, going up as high as 6.2% vs. 4.6% on a quarter earlier due mostly to the worsening quality of corporate credit.

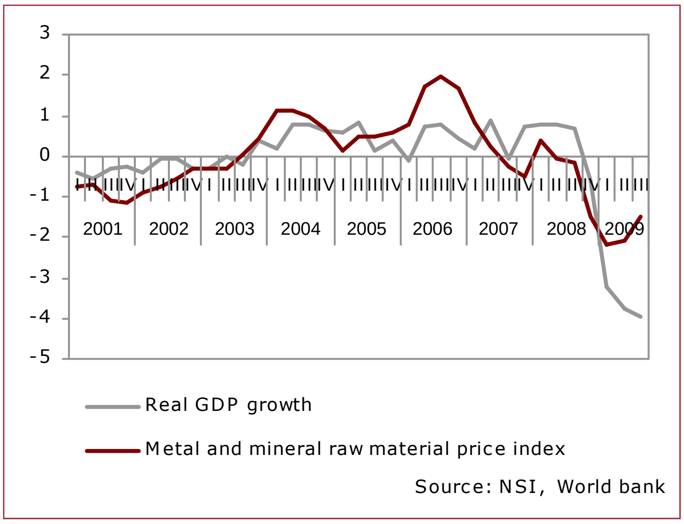
Global metal and mineral raw material price index

The metal and mineral price index went on rebounding for another quarter in a row, going up by 13.1%. The year-on-year decline slowed down to 24.8%. All basic metals but steel (2.2 percentage points down) posted a quarter-on-quarter increase.

The price of copper was up (25.6%) on a quarter earlier, advancing to a record high of 18.2% in August ever since the start of 2009. On a 12-month basis, however, it ran well below its last year's level, reporting a 35% drop. The expectations are that copper prices will carry on rising at a moderate pace in 2010 as well. The price of lead stepped up by 28.6% on a quarter's average, with August and September witnessing a significant increase due to the shrinking Chinese supplies. Lead was also the only basic metal that posted a year-on-year rise (0.8%).

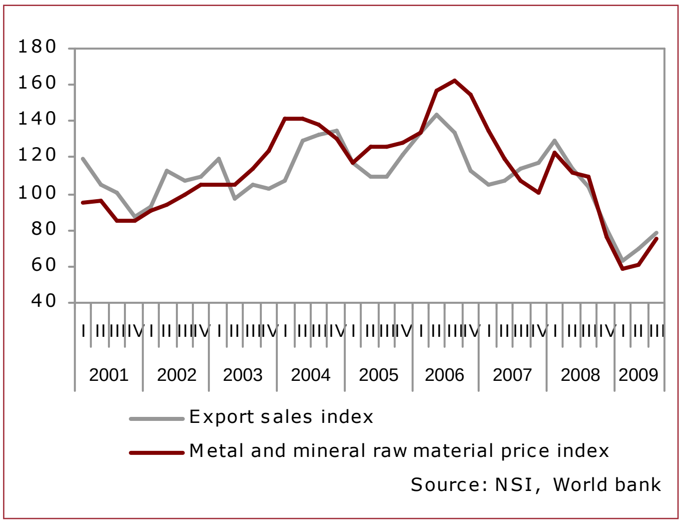
The prices of some other main export items continued to recover. The price of aluminum picked up by 22% on a quarter as demand in the automotive industry seemed to be on the rebound. Zinc prices stepped up by 19.6% due mostly to expectations of stockpiling in China.

Fig. 5:
Real GDP growth and the metal and mineral raw material price index (% change)



** See Ref. 3*

Fig. 6:
Global metal and mineral raw material prices and export sales



Metal prices are expected to remain relatively stable in 2010 owing to the unused production capacity ready to be put in operation and forestall any drastic price increase once demand has recovered.

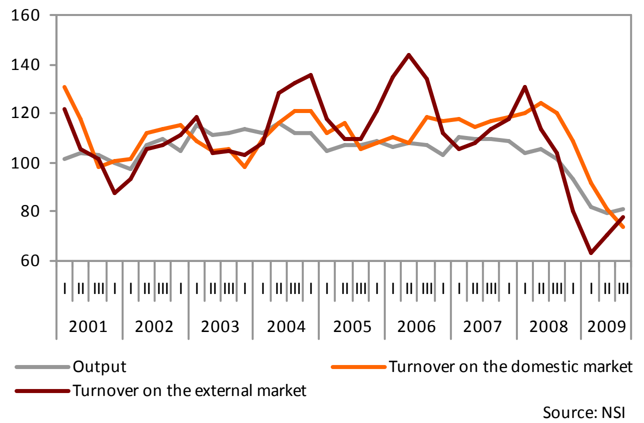
Industrial output

The 12-month decline in industrial output slowed down by 1.5 points in the third quarter due mostly to the faster growth pace in some industries (precious and other non-ferrous metals, tobaccos). The decelerated slump in *electricity generation, transfer and supply*, *extraction and mining*, *metal manufactures*, *car spare parts and accessories* as well as the quarter-on-quarter increase in *shipbuilding* had a positive effect on the sector's growth. And yet, the recovery base was rather narrow, with the diffusion index accounting for the industries reporting growth running very low (16%).

The output slump in the mining and extraction industry slowed down to 18.8% due to the stronger demand in non-ferrous metallurgy. As a result, metal ore mining set back at its last year's levels. The decline in coal mining decelerated too but non-metal raw material extraction, which is heavily dependent on construction, reported an even stronger output shrinkage on a quarter earlier.

Basic precious and other non-ferrous metals made the most significant contribution to output in the processing industries (43.1% up on a year earlier), as it rebounded under the impact of the high metal prices worldwide. Other export-oriented industries, which had a positive contribution, were sport goods and shipbuilding. Some other industries, which are predominantly oriented to the domestic market (tobaccos and milling products), also recovered. At the same time, products of other non-metal mineral raw materials and metal products, machinery and equipment excluded, hit hardest by the slump in construction reported the heaviest negative contribution to industrial output for a second quarter in a row.

Fig. 7:
Output and turnover indices in the manufacturing sector



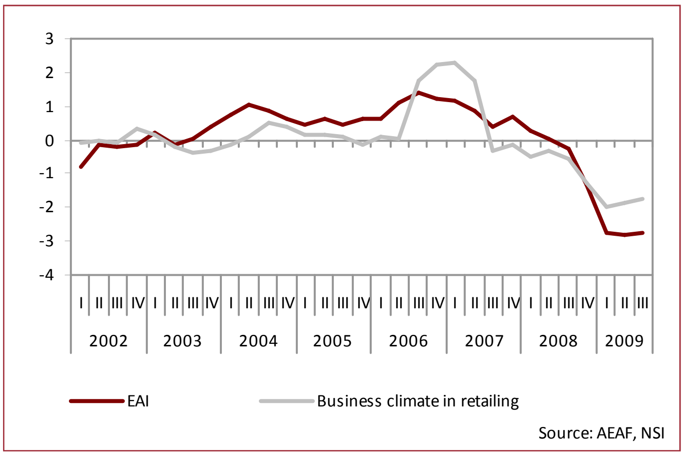
Source: NSI

The quarterly business surveys in the manufacturing sector indicated a 0.9 point increase in capacity utilization, compared to July. The ratio of production capacity to demand expectations stepped down while running well above the last two years' average. Some 17.4% of the respondents pointed to a higher utilization rate compared to demand. Order volumes improved slightly on a quarter earlier but the production assured with orders went on worsening to 4.1 weeks.

Business Climate in Retailing

The downward trend in the business climate indicator in retailing persisted well into the third quarter of 2009. The balance assessment of the current business situation and business expectations deteriorated by 27.1 percentage points on a year earlier due not only to the distinctly pessimistic view of the business environment but the downbeat expectations as well. Nevertheless, the composite indicator declined at a slower pace, producing a healthy effect on EAI performance.

Fig. 8:
EAI and business climate dynamics in retailing (normalized)*



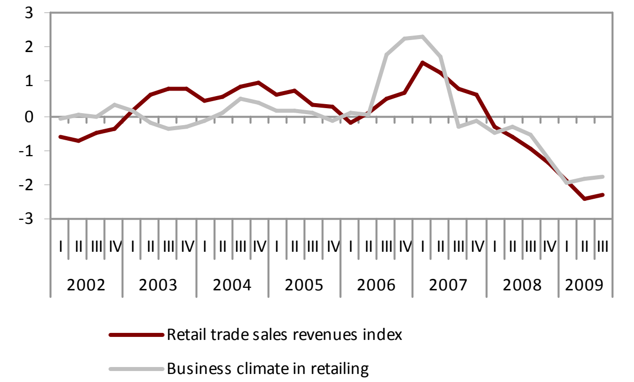
** See Ref. 3*

The ever-shrinking consumption in the country led to an even higher share of employers pointing to a decrease in sales volumes. Going some 28.6 points up on a year earlier, they now accounted for 34.3% of all respondents. Q3 retail sales[6] stepped down by 9.1%, with the strongest decline being posted by textiles, clothing, footwear, leather articles, home appliances, furniture and computer and communication equip-

[6] At constant prices according to NSI monthly date on indices of retail trade sales revenues.

ment. It was only revenues from food, beverage and tobacco retail sales that reported positive growth, which steadied around its level on a quarter earlier (2.4%). The worsening economic picture and income expectations have affected most severely the demand for durables, which are also the most elastic to the business cycle. Fully matching the decreased demand in the economy, NSI business surveys evidenced a stable downward trend in the share of managers who had raised retail prices at the expense of retailers who had kept prices unchanged rather than the share of retailers who were cutting down prices.

Fig. 9:
Business climate in retailing and retail sales revenues index dynamics (normalized)*



Source: AEAF, NSI

** See Ref. 3*

Although at a slower pace on a quarter earlier, business expectations in retailing carried on worsening on a 12-month basis due mostly to the growing share of managers expecting the business situation to remain unchanged and slower increase in the share of respondents anticipating further deterioration in the following half-year period.

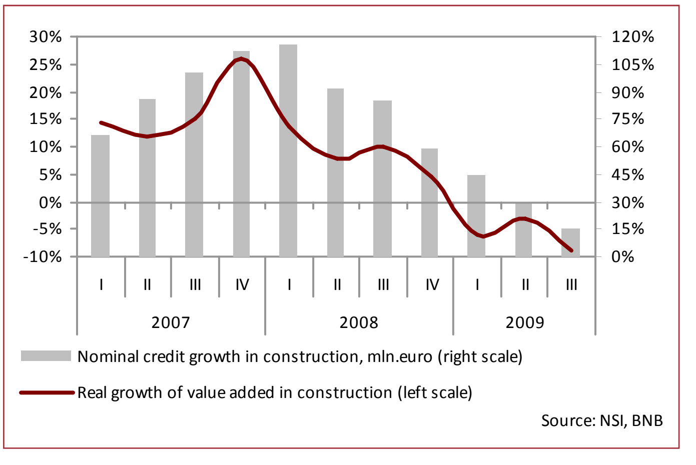
In the third quarter, employers remained downbeat about order volumes, with the balance on foreign order expectations posting a larger negative decrease than domestic order anticipations in line with the rising share of managers pointing to a drop in sales in the future. Over the same period, a growing share of respondents reported stronger expectations of a retail price retention (32.9 points up on a year earlier to 87.8%), outpacing the share of retail businesses anticipating a slight increase in prices (3.8 points up to 4.8%) on a quarter earlier. The negative business activity assessments, as manifested in the sales drop expectations of the respondents, corresponded to the rising share of entrepreneurs pointing to a negative labour mobility dynamics.

The factors that stepped up in importance as impediments faced by the retail businesses in the third quarter had to do with economic uncertainty (pointed by 61.2% of the respondents), insufficient demand (identified by 50.5% of the employers), as well as financial hardship (18.3%). At the same time, competition indicated by 33.2% of the respondents as a factor having a curbing effect on their performance enjoyed a smaller weight in the past two quarters.

Gross value added in construction

In the third quarter the performance of the construction sector made a negative contribution to EAI dynamics. Gross value added carried on decreasing, amounting to 8.7% on an annual basis.

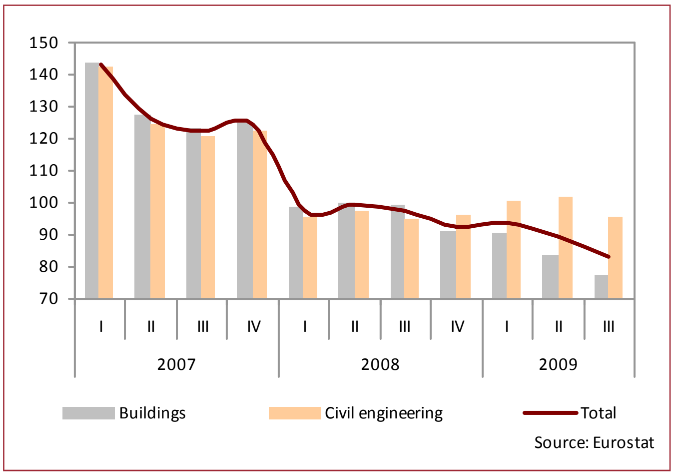
Fig. 10:
Real growth of value added and nominal credit growth in construction, y/y



According to BNB monetary statistics, loans to construction businesses stepped down as low as their 2006 levels at 15.4%. FDI inflows amounted to EUR 40.5 million and although running well above Q2 levels, they lagged significantly behind the 2007 and 2008 amounts.

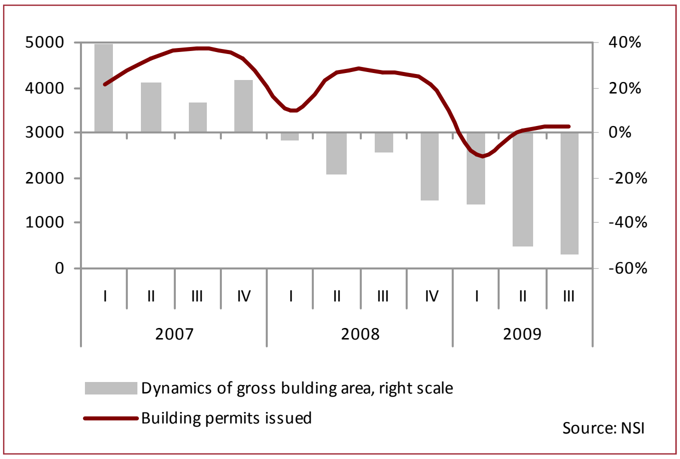
The weaker demand and lower mortgage loan extensions had a most unhealthy effect on the sector. As of the end of September, mortgage credit volumes went drastically down by 56.7% in BGN and 69% in EUR on a year. Relative to the same period, the output index in the sector declined by 17% due to the strong contraction in building construction of 22.5%.

Fig. 11:
Production index in construction, y/y



The duller business activity in construction entailed a 37% quarter-on-quarter decrease in the number of planning permits (with this number going down for both residential and office buildings). On the other hand, the above indicator's dynamics perpetuated expectations of a further and deeper business activity contraction in the sector.

Fig. 12:
Building permits issued and dynamics of gross building area



Employment

Q3 employed numbers in the economy stepped down by 4% on a year earlier and continued to have a most adverse effect on EIA performance.[7] The above decrease was mainly triggered by the weaker country's business activity having to do with the duller domestic and foreign

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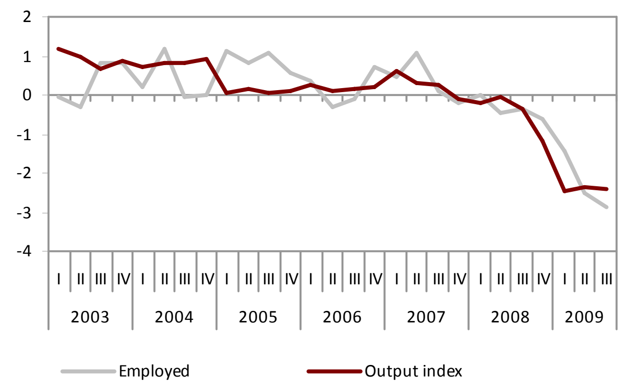
[7] Labour force survey data.

demand. A breakdown of the employment figures by aggregate sector of the economy indicates that the overall decline was primarily due to the 8.7% shrinkage in the manufacturing sector. Furthermore, service employment reported a 0.5% drop on a quarter earlier.

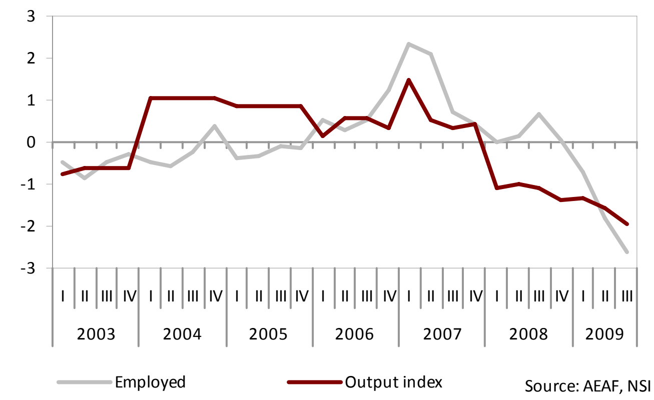
Fig. 13:
Dynamics in the employed numbers and in the processing industries the output index (normalized)*



Source: AEAF, NSI

** See Ref. 3*

Fig. 14:
Dynamics the employed numbers and the output index in construction (normalized)*



Source: AEAF, NSI

** See Ref. 3*

The Q3 negative employment growth in the manufacturing sector was mostly due to the growing number of lay-offs in the processing industries and construction. The overall decline in the processing industries ran at 8.2%[8], with monthly data on the employed numbers and wages pointing to a decrease in all activities. Again, a major contribution was

[8] Labour force survey data.

made by textiles and clothing, food, beverages and tobaccos, machinery and equipment, basic metals, rubber, plastics and products of other non-metal mineral raw materials, etc. On a quarter earlier, Q3 employment decline took place at a faster pace due mostly to the intense labour redundancy process in construction. Having posted an increase in jobs in early 2009 given declining output volumes, construction employment has gone on the decrease since the second quarter down to 10.8%[9] relative to the July-September period of 2008.

As for the service sector, labour force survey data suggested that the Q3 employment decrease was prompted by the declining employed numbers in trade, real estate transactions, administrative and subsidiary activities as well as education. At the same time, a positive contribution to service employment was reported by finance and insurance services where the employed numbers had stepped up by over 15% on a year earlier, as well as research and development (8.5% up). The monthly employment figures show that the increase in the latter industry was mostly due to business services. ▼

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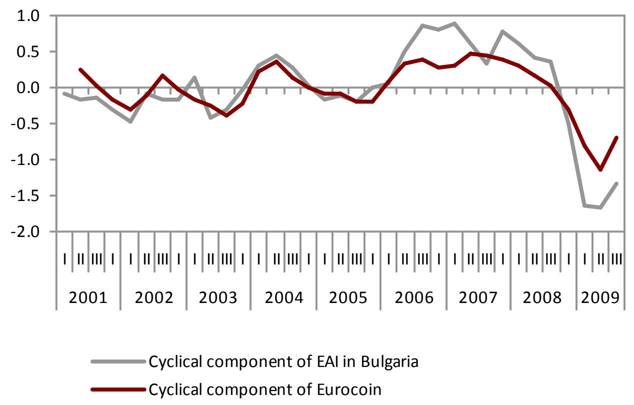
[9] Labour force survey data.

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 quarter 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 is turn associated with the high elasticity of the local cycle to changes in the external environment.

Граф. 15:
Estimated cyclical fluctuations in the Euro area and Bulgaria



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

Impact of EU business activity on the Bulgarian economy

According to data on the Euro area, business activity carried on recovering in the third quarter too due to the healthy effect of the inventory cycle, rebounding exports and sizable macroeconomic stimulus packages and measures to revive the financial system in the zone.

According to Eurostat data, Q3 EU-25 GDP stepped down by 4.1% on annual basis vs. 5.7% on a quarter earlier. On the side of final use, almost all components of newly-generated income reported a slowdown. Nevertheless, they kept posting significant decreases as follows: gross capital formation – 13.9%, exports – 13%, and imports – 12.6% due to the continuous interplay of factors that have been discerned for a year and a half now, viz. reduced demand, limited access to financing and low profit margin for businesses. It was only final consumer spending that continued to step down due to the worsening labour market conditions in EU-25, credit crunch and deteriorating household financial welfare.

Table 1: Real GDP growth by final use components (%) in EU-25, y/y

	2007				2008				2009		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
EU-25 GDP	3.5	2.7	2.7	2.4	1.9	1.9	0.8	-1.7	-5.2	-5.7	-4.1
Final consumption expenditure	2	1.8	2.1	1.7	1.6	1.5	1	0.1	-0.8	-0.9	-1.2
Gross capital formation	8.8	5.6	4.3	4.7	1.3	1.4	-1.4	-5.4	-16.3	-19.3	-13.9
Exports of goods and services	5.5	4.3	7.2	4.7	4.7	5.1	2.2	-6	-16	-17.6	-13
Imports of goods and services	5.4	4	7	4.4	4	4	1.5	-4.6	-13.7	-16.1	-12.6

Source: Eurostat

The above developments in the EU-25 economies had a healthy effect on the Bulgarian economy. The gradual recovery of the Euro area curbed the shrinkage in Bulgarian exports, which now slowed down to 12% on an annual basis vs. 30% on a quarter earlier. However, exports to some other major Bulgaria’s trading partners (e.g. Balkan and Asian countries) carried on contracting by 40.5 and 51.2% respectively. ▲