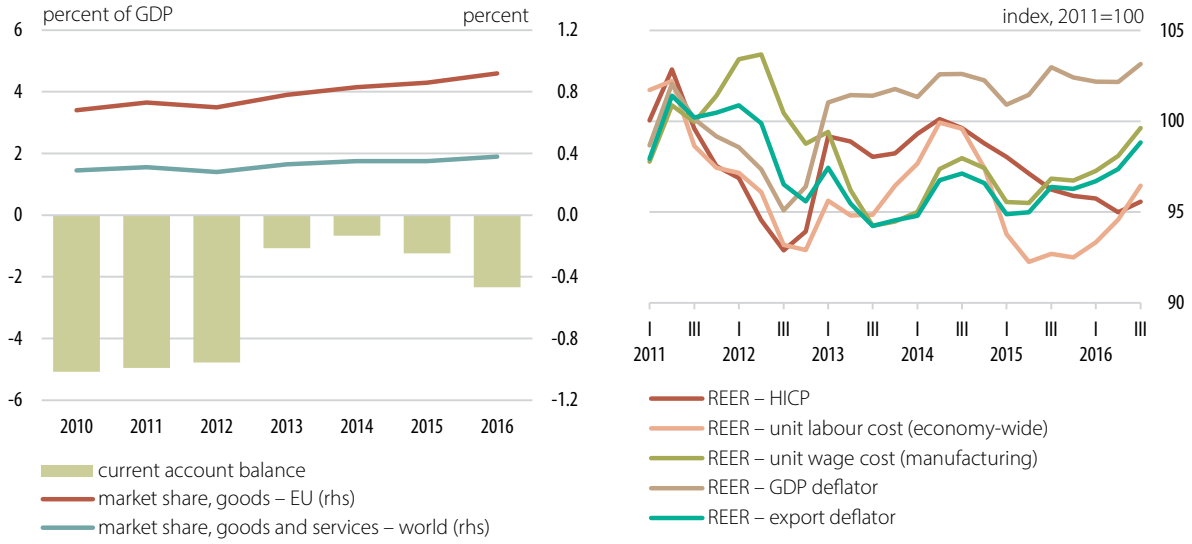
Box 1. Price competitiveness of main industrial groupings and sub-sectors

The real effective exchange rate (REER), which is the standard tool for the analysis of price competitiveness, captures the relative position in terms of prices or costs of a country's economic agents vis-à-vis their foreign competitors in various markets. It is common practice in the macroeconomic field to use the aggregate REER, which has the advantage of painting a synthetic picture, but – besides the methodological challenges associated with its calculation – may mask diverging trends of its components, as many of the shocks that affect economic sectors are industry-specific. A deterioration in price competitiveness is expected, in theory at least, to be mirrored in the erosion of the current account balance and/or of the export market share.

Nevertheless, the recent performance of these indicators in Romania has given mixed signals about the competitive position of the economy, the modest dynamics of traditional REER providing scant information in this respect, regardless of the price measure used (Chart A). The most relevant case concerns the CPI/HICP-based REER, as developments in the aforementioned price measures were marked, over the past years, by frequent and extensive changes in indirect taxation that distort the interpretation in terms of competitiveness. This box complements the framework for the analysis of price competitiveness by substantiating and describing several real effective exchange rate measures by main industrial groupings and sub-sectors, which allow for a better assessment of the competitive position of each sector, while also being able to signal potential vulnerabilities.

Chart A. Indicators of the competitive position



Source: European Commission, Eurostat, NBR

Note: Increase/decrease – appreciation/depreciation.

Methodology

Sectoral REER, which is conceptually similar to the macroeconomic indicator, is an aggregate of bilateral real exchange rates between the economy under analysis (Romania's economy) and its competitors:

$$REER_i = \prod_{j=1, i \neq j}^{J} \left(\frac{S_i}{S_j} \frac{P_i}{P_j} \right)^{W_{i,j}},$$

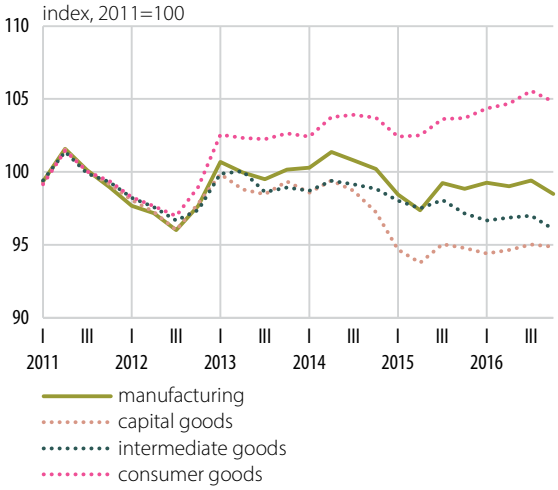
where: S_i and S_j are the nominal exchange rates of economies i and j expressed in EUR, P_i and P_j are the price indices, and $W_{i,j}$ is the weight of economy j used in the calculation of REER for country i. Except for the nominal exchange rates, all the variables in the above-mentioned equation, and hence the resulting real exchange rate, are industry-specific (for simplification purposes, this fact has been omitted from the symbols used in the equation). Consequently, the weight of each trading partner depends on the characteristics of each industry, in some cases certain competitors or certain markets having a higher relevance. The larger the number of trading partners included, the better the signal sent by the indicator, which is however constrained by data availability and/or quality[1]. An illustrative example is China, which is highly relevant in terms of competitiveness to sub-sectors such as metallurgy and the light industry, but in whose case the exhaustive data set necessary to compute sectoral REER is difficult to obtain. As far as the distinction between the assessment of the competitive profile in the domestic market and that in the international market is concerned, there are alternative weighting schemes (Klau and Fung, 2006): (i) the pressure in the domestic market may be captured by the import weight of each trading partner in total imports, whereas (ii) double export weights reflect the sum of pressures generated by each competitor in every common market[2].

Although several price or cost indicators may be employed to calculate macroeconomic REER, the sectoral approach works with a narrower set of options, among which the industrial producer price index (IPPI). The reasons for the choice of this deflator mainly referred to data quality and availability: high frequency, shorter release period, limited revisions, and broadly lower volatility. In addition, even at aggregate level, the IPPI has the advantage of providing a better reflection of companies' costs (than ULC) and of the prices of tradable goods on world markets (than CPI) respectively. With a view to avoiding the distortions caused by the possible differentiated price-setting policies in various markets (and also a potential recourse to unfair practices), use was made of total IPPI, which is virtually an average of prices on the external and the domestic market respectively. Nevertheless, an important limitation of the use of the IPPI is that it confines the analysis of price competitiveness to the industrial activity, thus overlooking the tradable services, whose role in

1 In this analysis, REER for the main industrial groupings, as well as for each NACE division is calculated based on a cluster of competitors including the EU countries except Luxembourg, Malta and Cyprus, to which added the following non-EU economies: Japan, Norway, Switzerland, Turkey and the US. As for REER across manufacturing as a whole, the set of competitors was complemented by Russia and China.

2 The data series on industrial output at the level of disaggregation required to recompose the main industrial groupings (MIG) were approximated based on the breakdown of exports for each NACE division (using information at the level of NACE groups).

Chart B. REER by main industrial groupings – competition on the foreign market



Note: Increase/decrease – appreciation/depreciation.

Source: Eurostat, WIOD, national statistics offices, NBR calculations

Romania's economy has increased notably over the past years in terms of external flows and value added.

Results

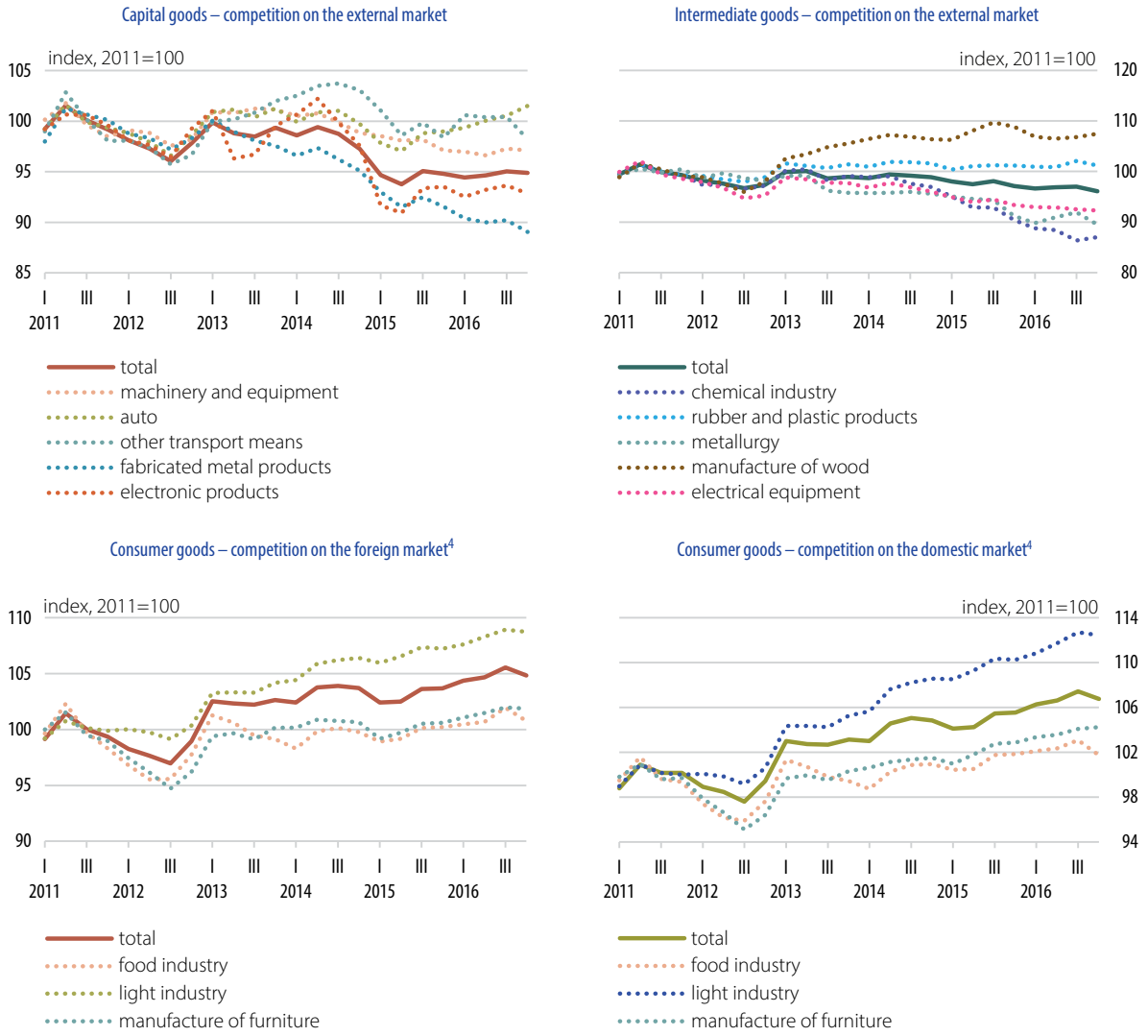
The analysis of the evolution of REER broken down by main industrial grouping points to diverging trends, especially beginning with 2014 (Chart B). Specifically, the consumer goods industry has steadily lost price competitiveness, yet its influence is not visible at aggregate level, being offset by the competitiveness gains coming from capital goods up to 2015 and subsequently from intermediate goods respectively.

The picture becomes even more heterogeneous at the next level of disaggregation, namely NACE divisions. Thus, competitiveness gains from intermediate goods are generated by the chemical industry, metallurgy and the manufacture of electrical equipment. The rebound in the competitiveness of the two major energy-intensive industries is probably associated with deep business restructuring and investments to increase efficiency, especially in terms of energy consumption, amid the advancing market deregulation in the energy sector. Moreover, starting with 2015, the positive impact on specialised producers' energy costs made by their partial exemption (up to 85 percent) from the payment of green certificates cannot be ignored either. Looking at the chemical industry, the performance (on the domestic and external markets) of one of the main chemical fertiliser producers is noteworthy, while the stiff competition from China led to strong responses from metallurgy operators in order to keep their place in the market. As for the manufacture of electrical equipment, the advantage of cost competitiveness has spurred higher foreign direct investment inflows in recent years, which had a positive impact on the labour market as well – the annual dynamics of the number of employees in industry in 2016 and early 2017 remaining in positive territory has been partly supported by this sub-sector. Turning to capital goods, it can be observed that the appreciation or depreciation trend is driven by the road transport means industry. In this case, the loss of competitiveness in the past two years can be attributed to the gradual tightening of the labour market, as the recruitment of suitably-skilled personnel has become extremely difficult, especially given that the ability to expand to other regions in the country (currently, the activity is concentrated in the Centre and the West) is limited by the lack of progress in developing road infrastructure (Chart C).

It should also be mentioned that the activity of certain important industrial sub-sectors (specifically, the automotive industry and the related sub-sectors), which are included in the two main industrial groupings presented above, is deeply integrated in global value chains, for which the REER is less relevant for at least two reasons: (i) the import content causes a real depreciation via the nominal channel to

have a double effect, namely lower prices for final goods, as well as higher prices for inputs; (ii) the way in which the indicator is defined does not allow for a distinction between the network partners and the actual competitors. In fact, under the impact of broader global value chains, the diminishing relevance of traditional REER to explaining market share developments is not characteristic of the domestic economy only (EFIGE, 2012; CompNet, 2015). Although harder to capture via the REER, which is constructed as an indicator of dynamics and not of level, the cost competitiveness of the local economy was one of the main factors to attract investment in the field, which largely accounted for the increase in the export market share.

Chart C. REER by main industrial groupings – in-depth[3]



Note: Increase/decrease – appreciation/depreciation.

Source: Eurostat, WIOD, national statistics offices, NBR calculations

3 For each main industrial grouping, the industries shown in the chart are not the result of its precise disaggregation. A case in point is the manufacture of chemical products, which includes the manufacture of intermediate goods, as well as of consumer goods (e.g. personal care products).

4 The different REER trajectories for consumer goods on the two markets are essentially due to the larger shares held by Poland and Hungary in Romania's imports, as opposed to exports.

However, the evolution which draws particular attention is the steady appreciation of REER for the consumer goods industry starting with 2014. This trend cannot be separated from the swift increase in the gross minimum wage economy-wide, as these are labour-intensive sub-sectors that rely especially on low-skilled workers. While price competitiveness is less relevant in the furniture industry, as manufacturers have gained a competitive advantage by making high-quality products (particularly for the external markets), this is probably one of the key elements of sales in the light and food industries. The latter's limited competitiveness became apparent in 2016, once with the strong boost of consumer demand, local producers increasingly losing ground to cheaper imports (Chart C). The problem however goes beyond price competitiveness, being widely attributable to non-price factors as well, among which: (i) the limited ability of domestic producers to enter the value chain comprising modern trade networks; (ii) small product variety, considering the ongoing diversification of consumer needs; (iii) insufficient or inadequately-trained personnel, in a context of highly competitive markets. It is worth pointing out that in 2016 the aforementioned trends were the major channel of erosion of the current account deficit and hence of the competitive position of the economy, a development that aggregate REER can only partially explain.

References

CompNet – "Assessing European Competitiveness: The Contribution of CompNet Research", *CompNet Research Network Report*, 2015

EFIGE – "The Triggers of Competitiveness. The EFIGE Cross-Country Report", *Bruegel Blueprint Series*, vol. XVII, 2012

Klau, M. and Fung, S. S. – "The New BIS Effective Exchange Rate Indices", *BIS Quarterly Review*, March 2006