UNIT LABOUR COSTS

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1. Unit labour costs and their components

The unit labour costs (ULC) indicator is considered one of the best complementary indicators on an economy and as such is used relatively frequently (in particular by foreign institutions) in evaluating the economic development of individual countries, or for a group of countries (the eurozone, E25, E15, etc.). This indicator puts into context the overall production output of an economy (GDP), labour productivity, wage and other costs connected with the workforce (all in ESA 95 methodology) and price development, thereby giving an overall picture of the quality of economic growth.

For calculating the ULC at the national level it is possible to use the following methodologies:

1. ULC = total nominal costs per employee / real labour productivity
2. ULC = total nominal costs per employee / nominal labour productivity
3. ULC = total real costs per employee / real labour productivity[1].

(Note: Compensations per employee is also used as an alternative term for total costs per employee.)

The **first method** of calculation is used by the majority of foreign institutions (ECB, European Commission, OECD) and has also been used in a modified form by the NBS for the internal needs of foreign institutions. Unit labour costs calculated according to this method highlight price development in the field of wages. Since nominal labour costs are compared to real GDP, it is possible over the longer term to compare how current labour costs develop over individual years in relation to the unit of real output produced.

If ULC are compared concurrently with the development of the average CPI it is possible to ascertain to what extent the development of nominal labour costs per employee copies the development of average inflation within a given period. In the case where the growth in the average CPI is lower than the growth in ULC, this means that real ULC are increasing and we can speak of an accumulation of wage growth unabsorbed by price development, which may subsequently indicate the emergence of inflationary pressures.

In the case where the growth in average CPI is higher than the growth in ULC this means that RULC are declining, and thus real labour productivity growing faster than real labour costs per the workforce; not creating the preconditions for the emergence of inflationary demand-side pressures.

The ULC indicator calculated by the first method may be used also for assessing an economy's competitiveness (helping to identify possible changes in a country's competitiveness in international markets), though has this predicative ability only where it is comparable with the respective ULC in the other countries.

The **second method** of calculation is used by Eurostat. The rate of ULC growth (decrease) in this methodology expresses the rate of involvement of labour production factors in the value of output created in the current period, meaning that neither of the ULC components (workforce costs or GDP) is adjusted of price influences. Without using complementary information on the development of prices in the field of consumption (e.g. final consumption of households deflator or CPI deflator), or in the whole economy (GDP deflator), this indicator has limited predicative ability.

The **third method** of calculation is achieved if nominal workforce costs are adjusted of price influences in the given period (i.e. compensations per employee are deflated). Deflators which may be used include the consumer price index (CPI), the final consumption of households deflator, or the GDP deflator. This results in real unit labour costs. RULC indicate whether price pressures have a tendency to grow or fall.

If compensations per employee are growing, but productivity is growing faster, then RULC will decline and the economic development may be deemed healthy. A growth in RULC in the case of a faster growth in compensations per employee above that in labour productivity may indicate a growth in inflation as a result of demand-side pressures.

In the final result ULC indicators are as a rule presented (as are most macro-economic indicators) in the percentage form of a year-on-year change. They may however be given also in the form of an index expressing the share of the index of total labour costs per employee and the labour productivity index.

2. Input data for calculating ULC

Even in the case of using the same methods of calculation, the actual level of the ULC may differ depending on the input data sources used.

For the expression of the cost of labour the most appropriate indicator may be considered that which covers to the broadest possible extent costs connected with the workforce. Such an indicator may be compensations per

[1] Since the third method of calculation uses real values for both the numerator and denominator, the ULC reached in this manner may also be termed real (RULC). In the other cases the simple term ULC (without attribute) is more commonly used.

employee according to the national accounts methodology ESA 95[2], which besides gross wages and salaries (in cash and kind), include also compulsory contributions paid by employers for employees to social and health insurance funds. Compensations per employee are expressed in current prices. A shortcoming of this indicator is the fact that it relates only to employees (not including remunerations of self-employed persons).

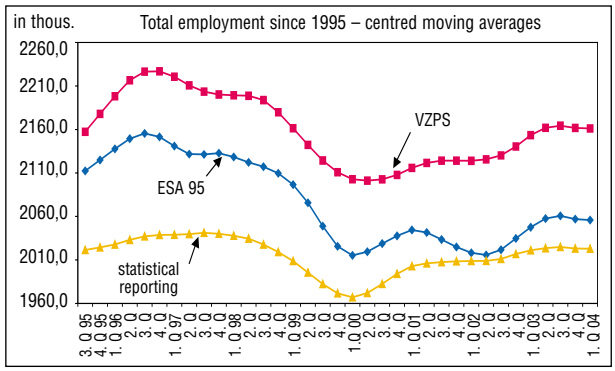
This indicator is used in calculating ULC by the ECB, European Commission, OECD and Eurostat. With regard to the fact that data on compensations to employees and employment in ESA 95 methodology is now also published by the Statistics Office SR (published for the first time for the 1st quarter of 2004), it is possible to calculate ULC according to this methodology also for Slovakia. In the case that this data for the respective quarter will not yet be available, an alternative is to use employment from statistical reporting and, for expressing the cost of labour, the average gross wage per employee in the national economy (according to the structure of current incomes of the households sector by ESA 95 methodology gross wages represent 70 – 75% of employees' compensations in the SR).

In calculating labour productivity for expressing the overall performance of an economy there is as a rule generally used the indicator GDP at constant prices, or GDP at current prices (Eurostat). For reason of methodological comparability, total employment monitored according to national accounts ESA 952 methodology is usually used for calculating labour productivity. In the case that this data is not available, modified data on employment monitored according to the national methodology is used.

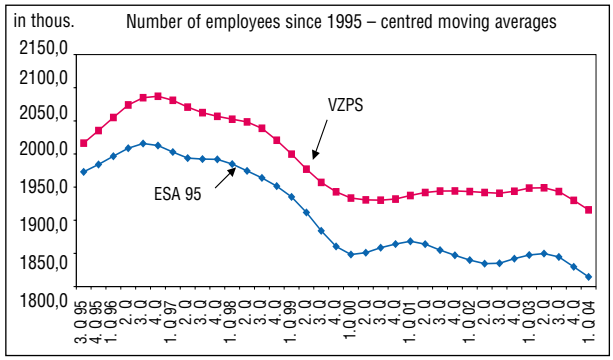
In the case of modified calculations of ULC (when the necessary data according to ESA 95 methodology is not available) a problem is in particular the source of the data on employment that is necessary for calculating compensations per employee and in calculating labour productivity. Depending on the data source used the resultant data on ULC may differ, even though the same methodology is used.

In the SR data on employment is reported according to the following methodologies: according to statistical reporting, according to the labour force survey and according to ESA 95 methodology. A comparison of the development

Graph 1



Graph 2



of employment according to the individual methodology is shown in the following graphs.

From the comparison shown in the graphs it can be seen that from the long-term aspect the trend in employment according to labour force survey and ESA 95 methodology does not differ significantly. A different development of employment according to ESA 95 methodology and statistical reporting is indicated by data for the years 2000 to 2003.

Methodology of reporting employment data in the SR

The Statistics Office SR publishes employment data on the basis of the following data sources:

a) according to statistical reporting, i.e. from statements submitted by employers (monthly, quarterly). The figure reported is the average registered number of natural person employees, covering permanent and temporary employees, regardless of citizenship, in a labour, service or member relationship to an employer on the basis of a labour contract concluded, and to whom the employer pays a wage / salary for the work performed. The registered number of employees covers employees actually present in work, as well as those who have not worked due to downtime, a strike, lock-out (including employees at workplaces abroad), employees currently not present at work (e.g. due to illness, recovery leave, military training, etc.), as well as employees with shorter working hours and employees performing work only occasionally upon demand and according to the organisation's needs. The registered number does not include women on maternity

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[2] According to the ESA 95 national accounts methodology the individual components of ULC are defined in the following manner:

Compensation of employees (employee remunerations) are defined as overall remunerations in cash or in kind, paid out by the employer to the employee for work that the employee has performed in the period monitored. Employees' compensations comprise wages and salaries and employers' contributions to social funds. They are published only in current prices.

Employees (the recipients of wages and salaries) are defined as persons who, on the basis of an agreement or contract, work for a defined institutional unit and receive remuneration for this.

Total employment includes all persons, employees as well as those self-employed, involved in any sort of economic activity. Employees include residents employed by a resident production unit, including residents who travel for work abroad. Self-employed persons are residents earning independently of any employer.

leave, persons in military (and civil) service, apprentices and students on placement.

b) according to labour force survey (LFS) pursuant to International Labour Organisation (ILO) methodology. LFS is based on a quarterly random sampling of households throughout the Slovak Republic. For a person to be deemed working he/she must be above 15 years of age, and in the week monitored to have performed at least one hour's work (as the main employment) for a wage or performed work for the purpose of making a profit (full-time, part-time, temporary, occasional or seasonal work), ancillary members of households of entrepreneurs, and professional officers of armed units. This group covers also persons who in the week monitored did not work due to illness, leave, maternity leave, training, bad weather, a strike or lock-out, with the exception of persons on long-term unpaid leave and persons on parental leave. The LFS includes also residents working abroad.

c) according to ESA 95 methodology, which includes:

• employees, i.e. all persons who on the basis of an agreement work for other domestic institutions (termed "the domestic concept", i.e. excluding residents working abroad) and receive remuneration. This group corresponds to the ILO definition of "paid work".

• self-employed persons (entrepreneurs), i.e. persons who are the sole owners or co-owners of the business in which they work, except for those businesses classified as quasi-corporations. The definition of self-employed persons includes, besides this, unpaid family members, external working persons and persons creating production exclusively for their own final consumption or the creation of their own capital, whether individual or collective. Women on maternity leave are not included.

Employment according to the national accounts methodology is published by the Statistics Office SR as yet only from the aspect of main occupations. In the future there should be published also employment for full-time work and the number of hours worked for all occupations in the economy (i.e. not only for main occupations).

3. Unit labour costs in the SR

3.1 Methodological aspects of calculating unit labour costs

Unit labour costs are not an ordinarily published indicator in the SR. They are not given in official overviews of the development of macro-economic indicators published by public institutions, nor are they given in assessments made by the professional economic public. The National Bank of Slovakia in its situation reports and monetary development reports has, in assessing the possible formation of inflationary pressures, worked only from the relation between the development of real wages and real labour productivity. If real wages have grown slower than real labour productivity, the development has not indicated the formation of inflationary demand-side pressures. In the case that real wages have grown faster than productivity over the longer term, this foreshadows the possible formation of inflationary demand-side pressures.

The National Bank of Slovakia has to date calculated unit labour costs mostly for the needs of foreign institutions, where the NBS has not published these calculations and analyses. The methodology of calculation is based on that of the ECB, though with regard to the fact that all the necessary input data in the national accounts methodology (employment, compensations per employee, labour productivity) were not available until the first quarter of 2004, substitute – modified data was used for calculating ULC. The average nominal wage of an employee in the national economy was used for expressing the cost of labour, and real labour productivity was calculated as the share of real GDP per employment according to statistical reporting.

Since now there is available also input data for calculating ULC according to ESA 95 methodology for the SR, information on the development of unit labour costs will thus be fully harmonised with ECB requirements. As regards the time schedule for publishing statistical data necessary for calculating ULC, we consider it appropriate to continue to use, besides the ECB methodology, also the modified NBS methodology used so far. This means that the following may be used for calculating ULC:

• methodology based on the source basis of ESA 95 quarterly national accounts (ULC_{ECB}),

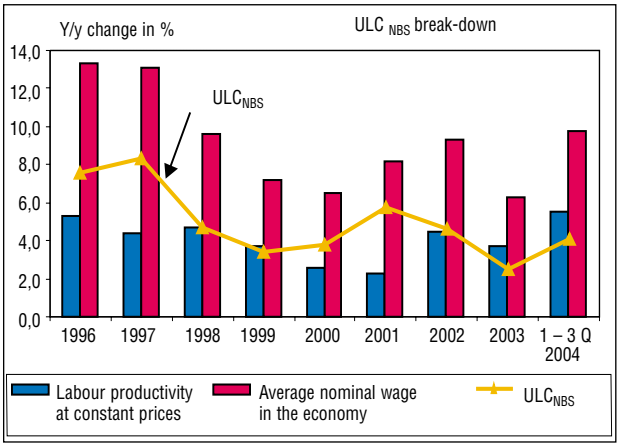
• methodology based on modified data, using data on the development of average wages of employees in the economy, and where labour productivity is calculated for employment according to quarterly statistical reporting (ULC_{NBS}).

In both cases compensations per employee (average wages) are expressed in current prices and labour productivity in constant prices.

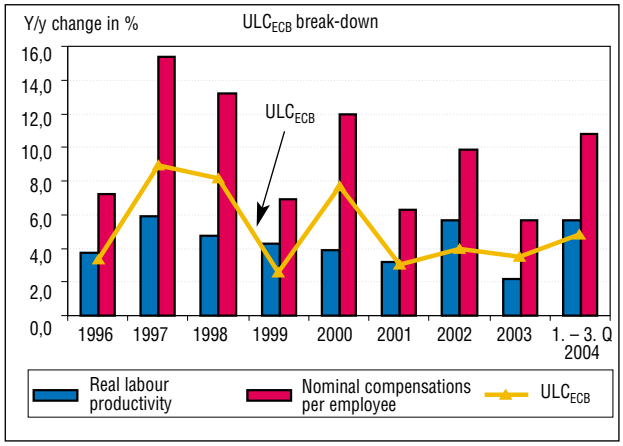
Development of ULC_{NBS} and ULC_{ECB} in the SR

	1996	1997	1998	1999	2000	2001	2002	2003	1. – 3. Q 2004
ULC_{NBS} (y/y change in %)	**7.6**	**8.3**	**4.7**	**3.4**	**3.8**	**5.8**	**4.6**	**2.5**	**4.1**
$RULC_{NBS}$ (y/y change in %)	**1.7**	**2.1**	**-1.9**	**-6.5**	**-7.3**	**-1.4**	**1.2**	**-5.5**	**-3.6**
ULC_{ECB} (y/y change in %)	**3.3**	**9.0**	**8.2**	**2.5**	**7.7**	**3.0**	**3.9**	**3.4**	**4.8**
$RULC_{ECB}$ (y/y change in %)	**-2.3**	**2.7**	**1.4**	**-7.3**	**-3.9**	**-4.0**	**0.6**	**-4.7**	**-3.0**

Graph 3



Graph 4



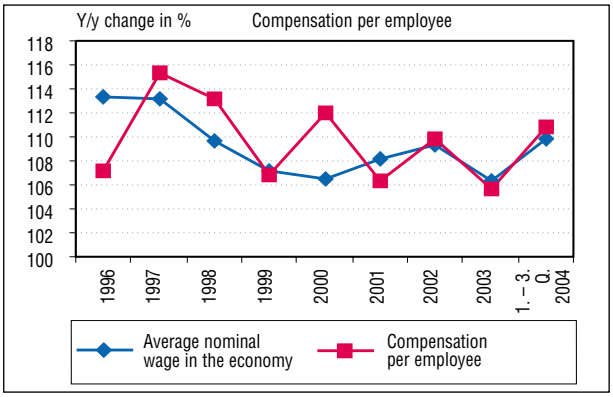
3.2 Development of unit labour costs in the SR

The development to date of unit labour costs in the SR highlights the combined influence of changes in productivity and in compensations per employee. From the growth in ULC in the period 1996 – 2003 and for the 1st to 3rd quarters of 2004 it may be ascertained to what degree this growth comprised compensations per employee and to what degree labour productivity growth. Throughout the whole period nominal compensations grew at a faster rate than real labour productivity, which was manifested in positive ULC year-on-year growth. Indeed, years when the differences in the dynamics of both factors lessened, ULC growth reported a declining tendency, i.e. wage costs per unit of output fell. In the case of ULC_{NBS} this concerned the years 1999 – 2000 and 2003, which was influenced by low nominal wage growth and concurrently a slowdown in real labour productivity growth. The graph showing the development of ULC_{NBS} underlines the long-term trend towards falling unit labour costs.

In comparison with the ULC_{NBS}, unit labour costs calculated on the basis of input data from quarterly national accounts (ULC_{ECB}) display greater volatility. This may be explained primarily by the development of compensations and, in the framework of the latter, variable wage components and other employee benefits, where seemingly a time shift is occurring in their payment against payment of basic wages .

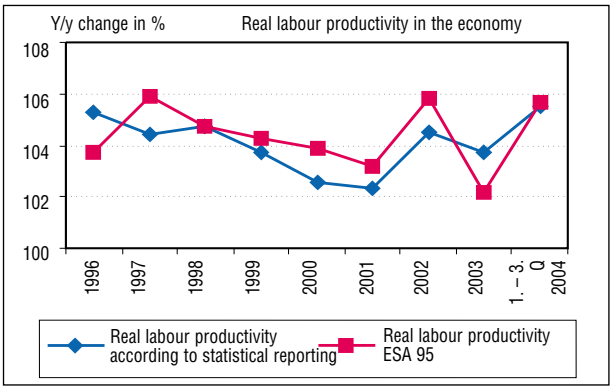
Graph 5

index romr = 100



Graph 6

index romr = 100



The following graphs show a comparison of the development of compensations per employee and real labour productivity, which comprise the basic components of ULC calculated according to the above methods. From the graphs it can be seen that larger differences occur in the values for reported compensations to employees than in the figures for labour productivity. Despite this, from the long-term aspect both graphs point to a downward trend in ULC.

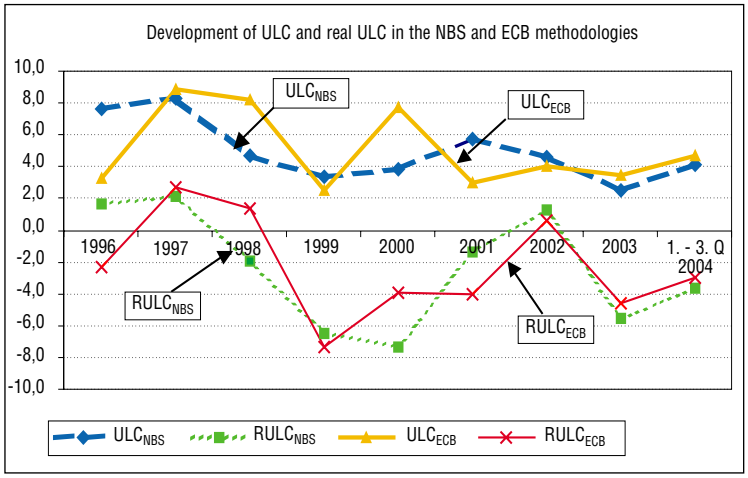
By adjusting the numerator of price influences (by using the CPI deflator) we get real unit labour costs (RULC).

In general RULC growth shows that if real compensations per employee grow faster than real labour productivity, this means that they could be a source of inflationary demand-side pressures, or respectively pressures for increased imports for final consumption of households. This in turn could be a source of external disequilibrium not only in the given, but also in the following period. The development of RULC is shown in graphs 8-10.

As indicated by the development of real ULC_{NBS}, these costs grew in two periods. The faster growth of real wages compared to real labour productivity in the years 1996-1997 did not give source to demand-sided inflationary pressures. However, final consumption of households in this period, in connection to the growth in real wages,

[3] Variable components include also wages according to statistics reporting, though their range is narrower compared to the national accounts methodology.

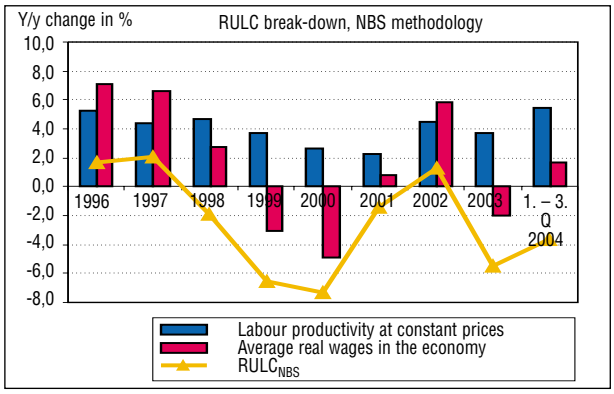
Graph 7



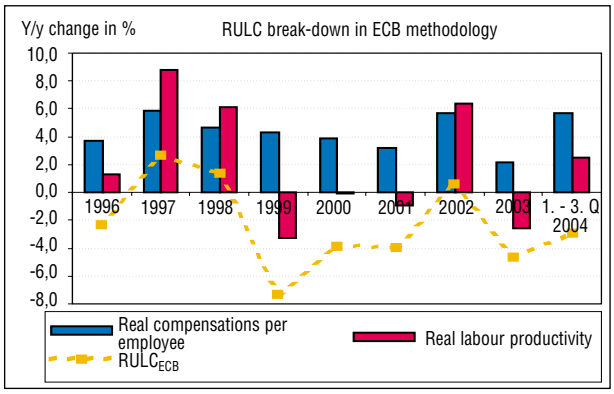
res were taken. As a result this development of ULC found expression in the development of the balance of trade.

The largest decline in $RULC_{NBS}$ was recorded in the years 1999 – 2000, where this was connected with various factors. One of these was a growth in consumer prices, significantly influenced by price deregulation measures. Through the growth in costs in the business sector they put a brake on the growth in wages, and through the growth in the fixed costs of households also limited people's purchasing power, which in turn led to a decrease in the trade balance deficit. In 2001, in connection with the slight growth in real wages, the decline in ULC_{NBS} slowed. This was

Graf 8



Graph 9



grew relatively quickly, which, as can be seen in graph 10, was manifested in a negative effect on the balance of trade development.

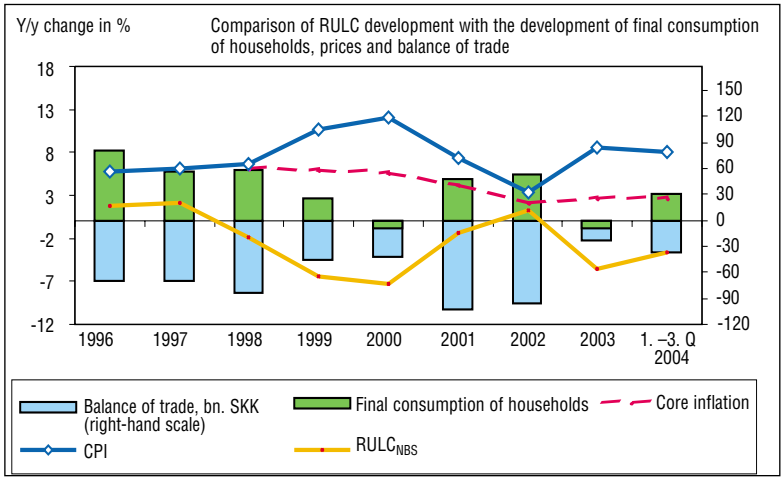
The growth of ULC_{NBS} in 2002 was marked by various circumstances. In that year nominal wages recorded a significant increase, primarily under the influence of growth in public sector wages. Besides this, the development of real wages was also influenced by low inflation, since in that year, in contrast to the preceding, no deregulation measu-

reflected primarily in a recovery in consumer demand, with a negative impact on the balance of trade.

In 2003, under the influence of a decline in real wages, $RULC_{NBS}$ again fell. The renewed deregulation of prices, contributing in large share to the growth in consumer prices, reduced consumer demand, thus neither creating pressures for imports. The significant improvement in the trade balance deficit occurred however in particular under the influence of automotive industry exports.

Over the medium term the unit labour cost dynamic (calculated according to both methods) should slow down, while in 2007 ULC should even record a year-on-year fall. Under the influence of an acceleration in economic growth, high labour productivity growth is also expected in that year, which should be a primary factor in the moderate decline of ULC and the significant decline of RULC. In the following year the development of ULC should reach approximately the level of that in 2006. RULC should in the medium term move prevailingly in negative values.

Graph 10



To be continued in issue 2/2005