**METHODOLOGICAL NOTES**

**Price index of market services** in the business sphere is the indicator for monitoring of price movements and measurement of inflationary pressures on the market of services. Price index of market services is used on national and international level (Service Producer Price Index – SPPI) and it is regularly sent to the public database of the European Statistical Office (Eurostat). It is also part of outputs of Short-Term Statistics (STI).

The objective of the index is measure average monthly change of prices of the selected market services **designed predominantly for the business sphere on the domestic market**. Surveyed prices are realization contract prices, eventually prices from price lists, which are adjusted from the value added tax. Price indices have been published in time series since 1994.

The aggregate price index of market services is composed of the sub-price indices of the selected services which are classified into sections and divisions according to the **Classification of product by activity CZ-CPA**:

H 49 Land transport services and transport services via pipelines

50 Water transport services

1. Warehousing and support services for transportation

53 Postal and courier services

J 58 Publishing services

61 Telecommunication services

62 Computer programming, consultancy and related services

1. Information services

K  64 Financial services except insurance and pension funding

65 Insurance, reinsurance and pension funding except compulsory social security

L 68 Real estate services

M 69 Law and accounting services

71 Architectural and engineering services, technical testing and analysis

73 Advertising and market research services

74 Other professional, scientific and technical services

N 77 Rental and leasing services

78 Employment services

80 Security and investigation services

81 Services to buildings and landscape

82 Office administrative, office support and other business support services

More detailed levels of classification in the Classification of product by activity CZ-CPA (groups, classes, categories etc.) are used to covering the above-mentioned areas of services by the appropriate price indices. For some levels are indices published.

**CALCULATION OF FIXED BASE INDEX**

The price indices are calculated from prices of the samples of representatives into aggregation using the Laspeyres formula in a modified form. The calculation uses constant weights of the basic period (i.e. structure of annual sales).



p1 - the price in the reference period

po ­ the price in the base period

poqo – the constant weight – the value indicator of the base period (sales)

Since January 2013, the fixed base indices of market services have been calculated to the price base „2011 average = 100” (unpublished technical indices) and further they have been chained to index base „2005 average = 100” which are then published. The weighting scheme is based on the sales of 2011.

**WEIGHTING SCHEME**

The constant weight of price index of market services is the annual structure of sales for**individually published group of market services**. The weighting scheme includes only those groups of services which can be covered by a price survey and appropriately represent a relevant division.

The standard comprehensive revision of the calculation of price index of market services was performed during 2012. Its objective was update the weighting scheme so that it better reflect the meaning of individual divisions of market services in the real economy. The sales, which are take over from the statistical surveys of sales, was the foundation for the calculation of new weights.

Since January 2013, price indices of market services have been calculated with weights based on structure of sales from 2011, which replaced previous structure of sales from 2005.

**Tab.: Comparison of weighting schemes of monitored divisions of market services from 2005 and 2011**

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **Name** | **Weights 2005 (‰)** | **Weights 2011 (‰)** |
| H49  H50  H52  H53  J58  J61  J62  J63  K64  K65  L68  M69  M71  M73  M74  N77  N78  N80  N81  N82 | **TOTAL**  Land transport services and transport services via pipelines  Water transport services  Warehousing and support services for transportation  Postal and courier services  Publishing services  Telecommunication services  Computer programming, consultancy and relates services  Information services  Financial services except insurance and pension funding  Insurance, reinsurance and pension funding except compulsory social security  Real estate services  Law and accounting services  Architectural and engineering services, technical testing and analysis  Advertising and market research services  Other professional, scientific and technical services  Rental and leasing services  Employment services  Security and investigation services  Services to buildings and landscape  Office administrative, office support and other business support services | 1000,000  86,847  0,329  10,260  20,630  -  128,749  85,088  10,029  67,993  87,174  118,336  53,319  113,043  92,625  45,273  20,579  8,413  14,767  13,680  22,865 | 1000,000  151,622  0,403  57,229  26,327  20,370  92,690  98,325  22,555  39,884  58,450  85,018  55,101  114,737  81,075  5,179  31,444  18,439  16,404  19,567  5,182 |

**DERIVED INDICES**

Besides the fixed base index, which has got the base period „2005 average = 100”, indices related to other time period are also published.

Calculation of price indices to the base „previous period = 100” for representative and aggregation (IP)

**Monthly growth rate (*IPm*)**



*IR05m* … monthly fixed base index of representative or higher aggregation to the base „2005 average = 100” in the reference month

*IR05m****–****1*… monthly fixed base index of representative or higher aggregation to the base „2005 average = 100” in the previous month

**Average monthly growth rate from the beginning of the year to mth month (*IPpm*)**



*IR05m,r* … monthly fixed base index of representative or higher aggregation to the base „2005 average = 100” in the reference month and year

*IR0512,(r-1*) … monthly fixed base index of representative or higher aggregation to the base „2005 average = 100” in December of the previous year

**Average monthly growth rate in the reference quarter (*IPpq*)**



*IR05m,q*… monthly fixed base index of representative or higher aggregation to the base „2005 average = 100” in the last month of the reference quarter

*IR05m,(q-1)*… monthly fixed base index of representative or higher aggregation to the base „2005 average = 100” in the last month of the previous quarter

Calculation of price indices to the base „corresponding period of the previous year = 100” for representative and aggregation (IS)

**Monthly year-over-year index (*ISm*)**



*IR05m,r*… monthly fixed base index of representative or higher aggregation to the base „2005 average = 100” in the reference month and year

*IR05m,(r-1)*… monthly fixed base index of representative or higher aggregation to the base „2005 average = 100” in the corresponding month of the previous year

**Average of monthly year-over-year indices from the beginning of the year to mth month (*ISpm*)**



*IR05pm,r*… arithmetic average of fixed base indices from the beginning of the year to the reference month of the year

*IR05pm,(r-1)* … arithmetic average of fixed base indices from the beginning of the previous year to the corresponding month of the previous year

**Average of monthly year-over-year indices for the qth quarter (*ISpq*)**



*IR05pq,r*… arithmetic average of fixed base indices for the specific quarter of the reference year

*IR05pq,(r-1)*… arithmetic average of fixed base indices for the specific quarter of the previous year

Calculation of the shares of moving averages for representative and aggregation (IK)

**The share of moving averages (*IKm*)**



 … sum of 12 fixed base indices (counting backwards from the reference month)

... sum of 12 fixed base indices (counting backwards from corresponding month of the previous year)

**ASPECTS OF STATISTICAL SURVEY OF MARKET SERVICES PRICES**

Prices of market services are surveyed monthly from ca. 700 selected economical subjects (respondents). Statistical statement Ceny TS 1-12 (Monthly statement of prices of market services) is used for the purpose of price survey. Over 300 individual items (representatives), which represent selected areas of services, are defined in this statement.

Selection of respondents

The statistical survey of prices of market services uses sample survey method, ie. economical subjects with the highest annual sales in the monitored sector are selected to the sample of respondents. The sample of reporting units is proportionally replenished by medium-sized enterprises.

Selection of representatives

The objective, when selecting representatives, is find such a service which appropriately represents given group or class of services within the Classification of product by activity CZ-CPA. The selected service must comply with further criteria as clear definability, quality stability in time and significance of the selected service in terms of the overall company activities.

Average prices

The surveyed prices are without VAT, because they should reflect the revenues received by producer.

**„The average prices of selected market services”** have been published quarterly since January 1998. Representatives are chosen so that their average price is guaranteed by reliable sample of respondents.

Data collection

The Czech Statistical Office (CZSO) offers the possibility of electronic reporting for easier and faster data collection from respondents instead of filling out data to the printed statistical statement. The essence of electronic method of data collection is filling out interactive PDF form, which is saved on website of CZSO. The content of this form is tailored to the individual reporting respondents.

**REVISION AND ITS HISTORY**

The purpose of revision is actualization of making system of price statistics, particularly by reason of accumulated changes in real described field. This actualization concerns to samples of representatives and respondents, weighting scheme, price basis and concept of calculation. The revisions are planned and they are usually performed in five-year periods.

Revision history of price index of market services after 1989

The first price indices of the selected market services (domestic freight transport and sewerage charges) were published in January 1994. They were calculated on the weights from 1990 to the price and index base „January 1990 = 100”.

After revision in 1994, the indices for the period 1995 to 2000 were calculated on the weights from 1993 to the price and index base „December 1993 = 100” and to the derived index base „1994 and 1995 average = 100”.

After revision in 2000, the indices for the period 2001 to 2006 were calculated on the weights from 1999 to the price and index base „December 1999 = 100” and to derived index base „2000 average = 100”.

After revision in 2005, the indices for the period 2007 to 2012 were calculated on the weights from 2005 to price and index base „2005 average = 100”.

There was a change of classification during 2008 and since January 2009, all price indices have been compiled, counted and published in Classification of product by activity CZ-CPA 2008.

After revision in 2012, the indices for the period 2013 to 2017 have been calculated on the weights from 2011 to index base „2005 average = 100”.