**TWINNING CONTRACT**

# Development of new statistical methodologies and indicators in selected areas of statistics in line with EU statistical standards

# Ukraine

# MISSION REPORT

**on**

House Price Indices & Price Indices in Construction

**Component no 4.2**

Mission carried out by David Fenwick, Consultant working for Statistics Denmark

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# List of Abbreviations

| | |
|---|---|
| ToR | Terms of Reference |
| SSSU | State Statistics Service of Ukraine |

## Executive Summary

The purpose of the mission was to develop statistical capacity in the computation of house price indices and construction price indices and to provide methodological advice on both. The mission objectives were achieved.

Discussions took place with the beneficiary country on the conceptual bases of the two indices and on methodologies to be deployed. Relevant experiences and practices in the calculation of these price indices in other countries were shared. The discussion on each index was accompanied with a power-point presentation.

I judge that the statistics covered by this report are produced according to sound and objective statistical methods, subject to the following points and associated actions being taken on board. These actions are necessary to ensure that the statistics are relevant and fit for purpose. They address important concerns which, if not addressed, could seriously undermine the statistical integrity of the indices.

*The house price index*

The index is a transactions-weighted index where the transactions are expressed in terms of values. This is the appropriate target index for the uses to which the index will be put to in the Ukraine. Information on type of property will be collected and used to mix-adjust the index to produce an index that reflects the price evolution of properties of a constant "quality". "Mix-adjustment" is the most straightforward way of controlling for changes in the composition of properties sold. It also addresses any user need for sub-indices relating to different housing market segments. But there are concerns that the success of the proposed methodology may be undermined by limited success in collecting the relevant data.

There are three recommendations.

Recommendation 1: That the SSSU addresses the very poor response rate achieved in the pre-pilot study and take action to improve the quality and completeness of the information obtained from real estate agents on prices and property characteristics.

Recommendation 2: That the SSSU ensures that sufficient resources are allocated in the short-term for undertaking and evaluating the pilot and in the longer-term to data collection and index compilation. The latter needs to be addressed prior to the training workshop planned for the end of 2012.

Recommendation 3: That the SSSU consider the implications of the longer-term inclusion of owner-occupier housing costs in the Consumer Price Index on a "net acquisition cost" basis – the approach being discussed in connection with Eurostat's HICP. As this requires a CPI to cover the cost of acquiring properties new to the owner-occupier housing market, the SSSU should plan to have separate indices for primary and secondary housing.

*Construction price indices*

The basic methodology used to construct the price indices on construction is sound. The approach used is the standard one of model pricing.

However, there a number of areas where the SSSU needs to improve the computation of the index and thereby make it of greater relevance to users. Work on these areas should be taken forward as a matter of priority to guarantee that the index is representative and free from bias.

Recommendation 1: That the models used for pricing are updated to reflect current building and structural design and materials and that there is a forward commitment to review these models at least once in every five years. This is not a job for statisticians. There is a need for outside specialist expertise from a structural engineer of architect to produce lists of well-described component features of model buildings and structures. Systematic engagement on these issues with statistics offices in neighbouring countries might provide SSSU with clues to where their current models are inadequate.

Recommendation 2: The need to re-estimate on a regular basis firms' margins (overheads & profits) based on information from building firms of from experts in the field. The *profit* margin used in the index calculation is currently based on a fixed percentage of the material costs where the fixed percentage relates to the assumptions made by the revenue authorities for the purposes of taxation. The *overheads* margin is legally defined by Government and is expressed as a fixed sum, not as a percentage of other contract costs. This use of a fixed sum is likely to have resulted in a downward bias in the index.

All the above recommendations have cost implications and a further review of methodologies may be required if the.

I would recommend one further mission is conducted in April of 2013, subject to satisfactory progress by SSSU. The mission would cover house price indices and construction price indices. It would review the proposed methodology in the light of the first results of the house price index pilot exercise The mission would also review the work undertaken on developing the construction prices indices in respect of pricing models and overheads and profit margins, and provide further methodological advice where necessary.

The mission cannot take place before mid-April because the results of the house price index pilot exercise will not be available until 15 April.

# 1. General comments

This mission report was prepared within the Twinning Project - Development of new statistical methodologies and indicators in selected areas of statistics in line with EU statistical standards. It was the first mission to be devoted to House Price Indices and to Price Indices in Construction, within Component 4.2 of the project. The mission was aimed at defining a strategic plan forming the base of the further implementation of the project in this statistical area.

The purpose of the mission was to develop statistical capacity in the computation of house price indices and construction price indices and to provide methodological advice on both. Further explanation is given below.

*Price Index for Housing*

The work on a Price Index for Housing focused on consolidating three actions that were originally envisaged during discussions in the early stages of the Twinning Project, namely.

*Action 4.2.1 Assessment of current system of price index on the housing market*
*Action 4.2.2 Methodology on price changes and price index on housing market l*
*Action 4.2.3 Methodology on price changes and price index on housing market ll (a continuation of Action 4.2.2)*

The work built on the preliminary advice provided by INSEE during the course of an earlier mission undertaken on a bilateral basis. This mainly related to questionnaire design and some sampling issues. It was agreed with the Beneficiary that consideration of the methodology for house price indices should be part of the current mission and that further methodological advice was needed.

The objectives were to.

- To improve the knowledge and practical skills of SSSU specialists with regard to observations of price changes in owner-occupied housing and the calculation of price indices. This included the potential use of a house price index in a consumer price index to calculate owner-occupier housing costs (as well as the use of a house price index as a macro-economic indicator), taking into account developments with respect to the EU HICP and the international consensus on methodologies.
- To further evaluate the methodological guidelines in terms of statistical observation over changes in prices in the primary and secondary housing markets, with a particular focus on areas not covered by the INSEE mission and on operational issues.

*Price Indices on Construction*

The work on Price Indices in Construction focused on *Action 4.2.1: Study and Analysis of Existing Methodology of Statistical Observations over Changes of Prices for Construction and Installation Work and Calculation of Price Indices.*

The objectives were to share experience and practice in the calculation of price indices in construction taking into account data sources and to advise on index methodology including: sampling issues and the collection of primary data; methods of data processing and calculation of price indices in construction.

Currently the *price index for construction and installation work (IP CIW)* is computed on the basis of 25 “representative” resource and technological models of facilities, by economic activities and types

of buildings and structures. Calculations include components for direct costs, other overheads and profit.

There is a pressing need to update the selected models and other aspects of pricing covering the collection and processing of data, and to review index methodology, learning from the experience of other countries.

In summary, the concrete objectives of the mission were.

- To improve the knowledge and practical skills of SSSU specialists with regard to observations of price changes in housing and in construction.
- To determine and further develop methodological guidelines for the construction of house price indices and construction price indices.

The consultant would like to express his thanks to all officials and individuals met for the kind support and valuable information which he received during the stay in Ukraine, and which highly facilitated the work of the consultant. Also I am indebted to the services of the translator who was assigned to me during the course of my visit.

The views and observations stated in this report are those of the consultant and do not necessarily correspond to the views of EU, SSSU or Statistics Denmark.

# 2. Assessment and results

*Actions 4.2.1- 4.2.3 Assessment of current system of price index on the housing market, proposed methodology and development plan.*

- To improve the knowledge and practical skills of SSSU specialists with regard to observations of price changes in owner-occupied housing and the calculation of price indices. This included the potential use of a house price index in a consumer price index to calculate owner-occupier housing costs, taking into account developments with respect to the EU HICP and the international consensus on methodologies.
    - Discussion took place with the beneficiary country on the different conceptual bases of a house price index depending on the main purpose of the index and, more particularly: the different weighting schemes (stock versus transactions and volume versus value); scope (all owner-occupier properties versus new homes only); the need or otherwise to make a decomposition between the building and land components; the different options to adjust for quality differences over time e.g. installation of better kitchens & bathrooms and other home-improvements.
    - A power-point presentation was given based on the recommendations in the new Handbook on Residential Property Price Indices, available from Eurostat's website and soon to be published in paper form.
    - The main use of the House Price Index to be developed by SSSU is as a macro-economic indicator, although it should be recognised that further uses are likely to evolve over time. It is also likely to be used as a deflator in the national accounts. For these purposes an index weighted by the value of transactions is most appropriate. SSSU confirmed that this was their intention. How this will be achieved in practice is covered under the second main bullet point.
    - The measurement of owner-occupier housing in the CPI (& the HICP) was discussed in the context of the "net acquisition cost" principle i.e. where a CPI covers the cost of acquiring properties new to the owner-occupier housing market (the latter includes houses formerly owned by the State where ownership has transferred to the individual – if money is paid). The issue of land was also discussed – and the fact the under national accounts the cost of land, apart from any improvements, is treated as an

investment. Other conceptual approaches to owner-occupier housing in a CPI were also discussed, including the payments approach (includes interest on loans) and the user-cost approach (using an imputed rent). The CPI currently does not cover owner-occupier housing costs. Consideration of the inclusion of owner-occupier housing costs should be covered in a future review of the CPI as this sector is likely to increase over time.

- To further evaluate the methodological guidelines in terms of statistical observation over changes in prices in the primary and secondary housing markets, with a particular focus on areas not covered by the INSEE mission and on operational issues.
    - A report written by INSEE was reviewed. The work undertaken by INSEE mainly related to sampling & questionnaire design in connection with a proposed survey of real estate agents to get the *prices* of flats of different types (primary & secondary markets plus one-bedroom flat, two-bedroom etc and standard of accommodation e.g. improved flat).
    - Houses are not included because there are very few house sales and it is a specialist market for the very rich. Also the usual circumstances is, that a plot is bought and then a house is commissioned to individual design.
    - A major change in the new housing market might take place when a Land Law becomes effective in 2013 allowing agricultural land to be sold.
    - Real estate agents should know the real price as this is what their commission is based on.
    - A sample of real estate agents is obtained from the business register (NACE 68.31) & updated annually.
    - The survey is to be undertaken by Regional Offices.
    - In principle the general approach and the design of the questionnaire is satisfactory (although date-of-construction will need to be added to the final version of the questionnaire) but a small pilot that had been undertaken generated no useful information. Real estate agents were very reluctant to fill the questionnaires in – most did not respond.
    - SSSU has two main options.
        - Commit resources to chasing up non-respondents or
        - Gather the information through personal visits.
    - Relying on the legal obligation to complete the form was not considered an option.
    - Other options include identifying a professional body (of real estate agents), who could facilitate questionnaire completion, or move to collecting prices centrally, perhaps first focusing on Kiev.
    - There is also a concern about whether Regional Offices have the resources to properly quality-assure the returns for completeness, missing cells, outliers etc.
    - There is no potential in the alternative approach of looking at the legal "transfer of ownership" documents - the "selling" price given in the latter is under-reported in order to avoid tax.
    - *Weights* for new flats are obtained from construction statistics that provide quarterly figures on completions with information on house-type, floor area etc. In theory, the time-lag in availability not an issue – this gives an approximate figure for "acquisitions" (assumes flats sold in period = flats built in period).
    - Transaction *weights* for old flats estimated from questionnaires being sent to real estate agents – the survey figure will need to be up-rated to produce total figure for whole of Ukraine (note: different sampling fractions for different regions).
    - It was agreed that *weights* should be value weights (not quantities).
    - *Weights* will be updated annually each year and chain-linked in.
    - A development timetable is in place.
    - A pilot index is to be compiled from Quarter 1 2013 for the collection of data in 2013 Quarter 1 and for compilation from April 2013. This will not be published.
    - A regional workshop is planned for the end 2012 for training.

- If all goes well an index for all of the Ukraine will be published in April 2014.
  - A fall-back option would be to focus firstly on an index relating to Kiev (mentioned earlier).
- The timetable is realistic if adequate resources can be found to take the work forward and should produce a usable index if there is a satisfactory response rate from real estate agents.
- If Real Estate Agents fail to give any useful information on the prices of the flats they have helped to sell then consideration could be given to appraisal-based methods.
  - Uses "assessed" values from estate agents.
  - Done by reference to "similar" properties that have been sold.
  - May be less burdensome on real estate agents and less intrusive (so real estate agents may be less concerned about possible disclosure of price to tax authorities).
  - But the method relies on expert judgement.
  - Additionally the method will not generate information on the volume and value of transactions.
  - Other sources of information on the value of transactions might include registrations of sales. This information could be used for the value of transactions if the under-reporting of prices is uniform across all types of property as weights are, in effect, distributions of "shares". The next Census of Population might be able to generate information on the stock of houses but this cannot be used for a transaction-weighted index.

*Action 4.2.1: Study and Analysis of Existing Methodology of Statistical Observations over Changes of Prices for Construction and Installation Work and Calculation of Price Indices.*

- To improve the knowledge and practical skills of SSSU specialists with regard to observations of price changes in construction and the calculation of price indices.
  - Discussion took place with the beneficiaries on the conceptual basis of indices relating to prices for construction and installation work and related measurement issues.
  - The above was further illustrated by the position in the UK where three series relating to construction price & cost are published.
    - Tender price indices (TPIs). These represent the costs a client has agreed to pay for a building, and corresponds to the price offer made by the contractor in the tender: the price reflects the contractor's views about future costs for labour and materials and their anticipation of the market's influence on profit margins.
    - Output price indices (OPIs). These represent changes in the prices actually paid for construction work & are based on the values of Tender Price Indices from previous periods but also account for changes in the cost of additional items such as labour and materials. The indices corresponds to value at current prices of work done in relevant quarter, on the basis of contracts placed in or before the same quarter, divided by the volume of that work. Such indices are used as deflators to convert value of contractors' output of new construction work from current to constant prices for use in National Accounts.
    - Resource cost indices (RCIs). These measure changes in the costs incurred by builders in the completion of construction projects on items such as wages, material prices and plant costs. They reflect the current costs, rather than the future costs incorporated into tenders and exclude any contractor's profit.
  - The basic steps in index construction were described: establishing model building specifications; the selection of establishments for the sample survey; the selection of building assemblies for pricing; acquiring monthly/quarterly price updates.

- Some of the discussion focused on three of the most challenging aspects of index construction.
  - The need for models that are highly specified in a great deal of detail. This requirement is due to the heterogeneous nature of the construction sector.
  - The need to keep these models up-to-date so they remain relevant and representative for inclusion in the index and so contractors can give prices.
  - The need to re-estimate on a regular basis firms' margins (overheads & profits). Margins can vary over time – with going into and out of economic cycles just when accurate data is most important.
- A power-point presentation was given on country practices.

- To determine methodological guidelines in terms of statistical observation over changes in construction prices.
  - The current methodology used by SSSU and the issues that need to be confronted were discussed.
  - The current methodology was drafted in 2002. Publication of the index started in 2005 and coincided with a move from the National Classification of Building Structures to NACE1.
  - The index covers all 27 regions. Regional Offices send electronic questionnaires to establishments, asking for the "cost of materials purchased in the reference time period" e.g. brick, concrete, glass slabs for building foundations, say. This is regardless of whether the materials purchased were used for construction in the reference period. Different materials are surveyed and unit prices obtained e.g. price per cubic metre of concrete.
  - About one thousand establishments are surveyed and since 2010 these have been selected centrally. The 2011 survey is based on sampling from the business register in mid-2010. The intention is to update the sample every three years e.g. the next update of the sample will be in 2014 using the 2013 business register.
  - The sample for house construction is updated annually.
  - The information is sent to Head Office in aggregate form on a computer file and SSSU compute an index for the Ukraine. No regional indices are computed.
  - SSSU cost 25 standard "models": 3 residential buildings; 11 non-residential buildings; 2 transport structures (roads, railway tracks etc); 5 pipelines (transmission lines for utilities); 3 industrial structures (e.g. coal mines); 1 other structure (stadium/sports ground).
  - The assessments of cost are based on expert assessments by relevant specialists of the materials needed for construction – these form the models. The latter were determined in 2002 by the formerly state-owned Project Design Institute of Kiev. The Institute is now privatised and charges for its services.
  - The specifications of the models are considered out-of-date. SSSU consider 13 models still to be relevant and that there is a need for 5 new models to be added. But it is my view that it would be advisable that the details of the old models be reviewed. The 5 new models need to have detailed specifications added to them.
  - No allowance is made for regional variations in building structures e.g. the difference in building materials used in The Crimea compared with areas in the north east of the Ukraine but the variation is not considered big enough to warrant special treatment in the index. A knowledgeable expert would be able to give a professional opinion on this.
  - The defining of well described component features of models for buildings and structures is a specialist function requiring the expertise of structural engineers and surveyors. It is not a task for a statistical office.
  - In practice the principle of highly-specified models is not adhered to in the pricing for construction price indices - the exact materials priced in successive months are not constant. Thus the fixed-weight concept underlying a Laspeyres-type index is not followed through. This aspect of a fixed-basket is a standard requirement in compiling construction price indices, as with any Laspeyres-type index. It can be noted that

buildings and structures are heterogeneous but how important it is to adhere strictly to a fixed-basket depends on the country circumstances.

- The current methodology for pricing was adopted in 2010 on a pragmatic basis with the introduction of a new form that requested less information from the establishment. Establishments increasingly failed to provide the detailed costing information that was needed for the pricing of more highly-specified models. It was felt that the old form placed a high burden on respondents who also had difficulty in pricing the more highly specified models, as the latter were out-of-date and of little relevance to today's construction companies. The more generic-nature of the new price collection forms would also make it easier to price new more-modern materials. It is my view that the more generic model descriptions are unlikely to introduce serious bias in the index but may lead to some "statistical noise" in the index from one month to the next. But it may be the only feasible approach given local circumstances.
- The introduction of more generic model descriptions is a pragmatic approach but doesn't properly solve the issue of out-of-date models.
- It is important to effectively confront the issue of out-of-date models. Putting together detailed descriptions of new models requires specialist skills from structural engineers and surveyors from the privatised Project Design Institute of Kiev or another similar organisation. It is not a task for the statistician
- Alternatively considerations could be given to approaching neighbouring countries with similar construction taking place, for the model specifications they use in their construction price indices. These can be used either to quality assure the specifications used by SSSU or to replace them. But this is very much a second-best solution and there is no guarantee that it will generate any useful information.
- The profit element is a fixed percentage of the material costs where the fixed percentage varies from 5% to 10% according to the particular type of project e.g. a complex project undertaken over many years will have a greater risk and therefore a larger profit margin. The profit margin relates to the assumption made by the revenue authorities for the purposes of taxation and it is generally considered the real figure will be significantly higher. The index should be based on the actual profit margins of companies and should be regularly updated.
- These profit margins were determined some years ago by the Project Design Institute of Kiev and will not reflect market conditions prevailing at the index reference period.
- The overheads figure (includes a salary element) is also legally defined by Government as a fixed sum. In addition, it is <u>not</u> expressed as a percentage of other contract costs. A different fixed sum is ascribed to each "model".
- Currently overheads account for only 0.4% of costs, reflecting the fact that while construction costs have increased over the years the fixed sum attributed to overheads has not. It is agreed that the 0.4% figure is unrealistic. This is likely to have resulted in a downward bias in the index. There is an urgent need to update the overheads figures, using the actual overheads incurred by companies expressed in percentage terms.
- An index is computed for each model and these are aggregates using value weights. Weights are computed annually. The relevant information is obtained from Construction Statistics, Structural Statistics (for taxes & salary payments) and the Labour Force Survey (for man-hours by activity and industry type).

# 3. Conclusions and recommendations

Official statistics are a "tool used in decision making inside and outside government. For that tool to be effective it must be designed to meet the needs of users. I judge that the statistics covered by this report are produced according to sound and objective statistical methods <u>subject to the points referred to below.</u> The recommended actions should ensure that the statistics produced are relevant and fit for purpose.

I would recommend one further mission is conducted in April of 2013, subject to satisfactory progress by SSSU. The mission would cover house price indices and construction price indices. It would discuss and evaluate the first results of the house price index pilot exercise and review the proposed methodology in the light of these results and advise on any necessary methodological changes. Advice would be given on any necessary follow-up actions and on any technical or operational issues that arise. The mission would also review the work undertaken on developing the construction prices indices in respect of pricing models and overheads and profit margins, and provide further methodological advice where necessary.

The mission cannot take place before mid-April because the results of the house price index pilot exercise will not be available until 15 April.

*House price indices*

In general the methodology adopted for the new house price index is satisfactory. The index is a transactions-weighted index where the transactions are expressed in terms of values. This is the appropriate target index for a house price index designed to be used as a deflator in national accounts and for use in the incorporation of owner-occupier housing costs in a consumer price index on a net acquisition cost basis. It is also an appropriate target index for a house price index used as a macro-economic indicator. The methodology is consistent with the proposed uses of the index in the Ukraine.

The index only includes flats but the exclusion of houses is not seen as problematic at this point in time as nearly all houses are new and custom-built: the owner buys a plot of land and then commissions a house to individual design. It is a very specialist market for the very rich. But I advise that the situation is monitored in the longer-term. A major change in the new housing market might take place when a Land Law becomes effective in 2013 allowing agricultural land to be sold for development.

Prices are to be obtained from a survey of real estate agents in each region. This survey will ask for the prices of properties sold in the reference period by the type of property sold e.g. one-bedroom or two-bedroom flat, new(primary) and old(secondary) and where old renovated or un-renovated. The survey will also provide weights for the number of transactions.

The information on type of property will be used to mix-adjust the index to produce an index that reflects the price evolution of properties of a constant "quality" where the latter refers to all price determining characteristics. "Mix-adjustment", sometimes referred to as stratification, is the most straightforward way of controlling for changes in the composition or "quality mix" of properties sold. It also addresses any user need for sub-indices relating to different housing market segments.

Whilst supporting the overall statistical design and approach there are a number of issues that I believe should be addressed. A house price index is a statistic of increasing importance and resources should be made available to develop it according to the work-plan. I would encourage the SSSU to consider the following as a matter of priority.

Recommendation 1: Think about ways in which the very poor response rate achieved in the pre-pilot study can be improved together with the quality and completeness of the information that is provided. Real estate agents were very reluctant to fill in the questionnaires in and most did not respond. Options the SSSU should consider are: the identification of a professional body (of real estate agents), who could facilitate questionnaire completion; gathering the required information through personal visits; committing further resources to chasing up non-respondents; collecting prices centrally. There are obvious cost implications but increasing the response rate and quality of the statistical returns inevitably comes at a price. Work on this should commence before the pilot.

Recommendation 2: Ensure that sufficient resources are allocated in the short-term for undertaking and evaluating the pilot and in the longer-term to data collection and index compilation. One specific

concern I have is whether Regional Offices have the resources to properly quality assure the returns for completeness, missing cells, outliers etc and for chasing up non-response. The latter needs to be addressed prior to the training workshop planned for the end of 2012.

Recommendation 3: Consider the implications of the longer-term inclusion of owner-occupier housing costs in the Consumer Price Index on a "net acquisition cost" basis. As this requires a CPI to cover the cost of acquiring properties new to the owner-occupier housing market (the latter including houses formerly owned by the State where ownership has transferred to the individual) but not old houses, the SSSU should plan to have separate indices for primary and secondary housing. The issue of land – and the fact the under national accounts the cost of land, apart from any improvements, is treated as an investment – should be put to one side.

*Price Indices on Construction*

Price indices on construction are of particular interest to those engaged in the macro-economic management of the economy. They are of special significance to national accountants who use such indices as deflators to convert value of contractors' output of new construction work from current to constant prices for use in National Accounts.

The basic methodology used to construct the price indices on construction is sound. The approach used is the standard one of model pricing.

However, a number of areas have been identified where it is felt that the SSSU could improve the computation of the index and thereby make it of greater relevance to users. Work on these areas should be taken forward as a matter of priority to maintain the statistical integrity of the indices – to guarantee that the index is representative and free from bias.

Recommendation 1: That the models used for pricing are updated to reflect current building and structural design and materials and that there is a forward commitment to review these models at least once in every five years. The SSSU are conscious of the fact that the models currently priced are out-of-date and are attentive to the need for outside expertise from a structural engineer of architect to produce lists of well-described component features of model buildings and structures. This is particularly important given the heterogeneous nature of the construction sector. Such expertise to update and specify the detail of these models is unlikely to be found within Government and will not come without a price tag. It is not a job for statisticians. Organisations should be identified who employ the relevant specialists, and who can undertake this task. SSSU should also consider approaching the statistical services of other governments about sharing information on the specifications of the models they price in connection with the computation of their construction price indices. Systematic engagement with these organisations might at the very least provide SSSU with clues to where their current models are inadequate. Moreover, it might be possible to adopt some of the specifications in the Ukrainian construction price index. But it is a second-best solution and there is no guarantee that it will deliver a successful result.

Recommendation 2: The need to re-estimate on a regular basis firms' margins (overheads & profits). Margins can vary over time – with going into and out of economic cycles just when accurate data is most important.

The *profit* margin used in the index calculation is currently based on a fixed percentage of the material costs where the fixed percentage varies from 5% to 10% according to the particular type of project e.g. a complex project undertaken over many years will have a greater risk and therefore a larger profit margin. This profit margin relates to the assumptions made by the revenue authorities for the purposes of taxation and it is generally considered that the real figure will be significantly higher. SSSU should ascertain actual profit margins either by asking establishments or from an appraisal by an expert in the

field. SSSU should also update the margins periodically. Using figures produced for taxation purposes departs from a fundamental principle - that statistics should be based on facts.

The *overheads* margin also needs to be reviewed. Currently the overheads figure (includes a salary element) is legally defined by Government. Moreover it is expressed as a fixed sum, not as a percentage of other contract costs. A different fixed sum is ascribed to each "model". Currently overheads account on average for only 0.4% of costs. This reflects the fact that while construction costs have increased over the years the fixed sum attributed to overheads has not. It is agreed that the 0.4% figure is unrealistic. This use of a fixed sum is likely to have resulted in a downward bias in the index. It is my view that the SSSU need to obtain actual overheads figures for different sectors and models of construction, either by asking establishments or from an appraisal by an expert in the field. SSSU should express these as percentages and update the margins periodically.

The current pricing form was adopted in 2010 and asks for less information from the establishment than previously insofar as the materials e.g. for a warehouse floor are no longer specified. This was a pragmatic decision. The old form placed a high burden on respondents who also had difficulty in pricing the more highly specified models as these were out-of-date and of little relevance to today's construction companies. The more generic-nature of the new price collection forms should make it easier to price new more-modern materials and is expected to increase response rates. The more generic model descriptions have lead to a departure from the "fixed basket" approach underlying a Laspeyres index and may lead to some "statistical noise" in the index from one month to the next but in my view is unlikely to introduce serious bias in the index. The compilers of the construction price indices will need to do more to monitor this to ensure the variations in the basket of materials does not fluctuate to an undue degree and that the assumption that no bias is introduced is correct - that said, I see no reason to question the wisdom of the new questionnaire design and would advise that priority should be given to recommendations 1 and 2.

*Actions needed for preparing the next mission – fill out and add tables as needed.*

| **Action** | **Deadline** | **Responsible person** |
|---|---|---|
| *House price indices* – take steps to increase response rate from real estate agents prior to pilot | December 2012 – prior to pilot | O.S. Kalabukha |
| *House price indices* - allocate sufficient resources to take things forward | December 2012 – prior to pilot | O.S. Kalabukha |
| *House price indices* – factor in needs of CPI | Longer-term – deadline depends on future growth in the housing market | O.S. Kalabukha |
| *Construction price index* - investigate sources of information to update models used in construction price index | December 2012 – prior to calculation of January 2013 index | O.S. Kalabukha |
| *Construction price index* – introduce new methodology for calculating profit margin & overheads | December 2012 – prior to calculation of January 2013 index | O.S. Kalabukha |

# Annex 1. Terms of Reference

Note: the following Terms of Reference were drafted, with amendments, shortly before the mission took place but were subject to further consideration with the Beneficiary country in the context of the mission programme. Also some re-ordering of the Mission Programme took place with the agreement of the beneficiary.

*For Short-term Mission to the State Statistics Service of Ukraine*

*Component 4.2: Price Indices in Construction*

*Action 4.2.1: Study and Analysis of Existing Methodology of Statistical Observations over Changes of Prices for Construction and Installation Work and Calculation of Price Indices*

**Background Information**

Statistics Denmark in partnership with Statistics Finland, Statistics Lithuania, Central Statistical Bureau of Latvia, Statistical Office of Slovak Republic, INE Spain - National Statistical Institute of Spain and Statistics Sweden, implements in Ukraine "Development of New Statistical Methodologies and Indicators in Selected Areas of Statistics in Line with EU Statistical Standards" Twinning Project. The State Statistics Service of Ukraine (State Statistics of Ukraine) is the Beneficiary of this Project).

This action is being implemented under Component 4.2: Price Indices in Construction.
The purpose of this Component is to study experience and practice of calculation of price indices in construction in EU countries taking into consideration the national specifics and sources of data as well as determining the methodology of calculation of price indices in construction, including studying the methods of collection of primary data together with determining the number of respondents on this issue; besides that getting familiarized with methods of processing and algorithm of calculation of price indices in construction. At final stage – determine the method of calculation of price indices in construction, which can be introduced for statistical practice of Ukraine.

This action will contribute to achieving the abovementioned objective and reference indicators specified in the contract, namely:
- improving the knowledge and practical skills of SSSU specialist with regard to observations over changes of prices in construction and calculation of price indices;
- drafting the methodological guidelines in terms of statistical observation over changes in construction.

**Purpose of the Mission**

The prior purpose of the mission is:

- Getting familiarized with.
  - Available data sources necessary to conduct statistical observation over changes of prices for construction and installation work.
  - Effective methodology on changes of prices for construction and installation work.
  - Calculations of price indices.
  - Means of information dissemination for users.

- Selecting, acceptable for SSSU, the methodology in terms of statistical observation over changes of prices in construction on the basis of methodologies applied in EU countries taking into consideration the national specifics.

**Expected Results**

- Receiving from expert, the recommendations for methodology to arrange statistical observation over changes of prices in construction taking into consideration the data sources and national specifics.
- Obtaining the methodological documentation to be translated that would enable the SSSU specialists getting familiarized with the specific methodology proposed by expert.

**Actions**

The schedule of the mission is 20.02.2012 - 24.02.2012.

**Tasks to be fulfilled by the State Statistics to facilitate the mission**

The Beneficiary will arrange the following:

- Heads of divisions and executors who are directly engaged in organization, conduct and improvement of methodology of statistical observations in terms of changes of prices for construction and installation work and calculation of indices will be attended.

**Statistics of Manufacturer's Prices**

Currently the calculations of **price index for construction and installation work (IP CIW)** are being made in Ukraine on the basis of resource and technological models of facilities-representatives (25 models) by economic activities and types of buildings and structures. Calculations are made through percentage of cost of direct costs, other overheads and profit when constructing the facility-representative in the reporting and previous months.

Due to inflation processes in the country there is a need to recalculate the selected models together with renewal of material resources, which are used in construction. Such work cannot be performed by statistics experts; involvement of experts from design organizations is required.

In the context of the abovementioned there is a necessity to study the experience and practice of calculation of price indices in construction in EU countries by other method, which will largely differ from that existing in Ukraine.

Thus, the need of SSSU in recommendations of international experts is caused by necessity of determining the methodology of calculation of price indices in construction, including, including the study of methods of collection and processing of primary data, algorithm of calculation of prices in construction taking into consideration the national specifics.

Introduction of new method of calculation of price indices in construction will allow, in future, ensuring the qualitative and reliable calculations of price indices in line with European standards and providing the users with reliable new indicators, which will characterize the pricing situation of the country.

**Amendments to Twinning Contract "Development of New Statistical Methodologies and Indicators in Selected Areas of Statistics in line with EU Statistical Standards"**

The actions under "Development of New Statistical Methodologies and Indicators in Selected Areas of Statistics in line with EU Statistical Standards" Twinning Project within the statistics of prices included the Component 4.2 "Price Index for Housing". In addition, due to postponement of terms of commencement of actual implementation of Twinning Project the said issue was considered and processed under the bilateral cooperation with the National Institute of Statistics and Economics of France (INSEE). The expert of the said Institute during its mission reviewed the draft Methodological guidelines in terms of statistical observation over changes in primary and secondary housing market and calculation of price indices that was prepared by SSSU specialists; besides that the

expert provided his recommendations to the said draft. Therefore, on our opinion, consideration of issue concerning the price indices for housing under Twinning Project is inadvisable.

In addition, there are the other problems, which could be addressed under the Twinning Project. One of them is to improve the methodology of statistical observation over changes of prices in construction and calculations of price indices.

Currently the calculations of **price index for construction and installation work (IP CIW)** are being made in Ukraine on the basis of resource and technological models of facilities-representatives (25 models) by economic activities and types of buildings and structures. Calculations are made through percentage of cost of direct costs, other overheads and profit when constructing the facility-representative in the reporting and previous months.

Due to the changes in construction (new technologies, material resources etc.) it is necessary to update the selected models together with renewal of material resources, which are used in construction. To perform such work the involvement of experts from design organizations is required.

In the context of the abovementioned there is a necessity to study the experience and practice of calculation of price indices in construction in EU countries using other methods, which are not applied in Ukraine, in particular, the method of calculations of price indices of products (output) of construction for housing and non-housing construction. The said index traces the changes for construction through monitoring of changes of specifically defined representative construction operations.

Thus, the need of SSSU in recommendations of international experts is caused by necessity of determining the methodology of calculation of price indices in construction, including, including the study of methods of collection and processing of primary data, algorithm of calculation of prices in construction taking into consideration the national specifics.

Introduction of new method of calculations of price indices in construction will allow, in future, making the qualitative and reliable calculations of price indices in line with European standards and providing the users with reliable data.

# Annex 2. Persons met

SSSU:

O.S. Kalabukha, Director of Price Statistics Department, State Statistics Service of Ukraine.
L. A. Kuzmina, Head of Unit.
G. G. Bugaichuk, Chief Economist.

RTA Team:
Irina Bernstein, RTA
Volodymyr Kuzka, RTA Assistant
Oleg Slusarenko, Interpreter