TWINNING CONTRACT

BA 17 IPA ST 01 20

Further Support to the Reform of Statistics System in Bosnia and Herzegovina

MISSION REPORT

Activity 1.3.2G Service Producer Price Index III
Component 1.3.2 Index of Service Production/Service Producer Price Index

Mission carried out by
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04– 08 December 2023
Including online work on 21-22 December 2023

Version: Final

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FURTHER SUPPORT TO THE REFORM
OF STATISTICS SYSTEM IN BIH

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List of Abbreviations

BC	Beneficiary Country (BiH)
BHAS	Agency for Statistics of Bosnia and Herzegovina
BiH	Bosnia and Herzegovina
CBBH	Central Bank of Bosnia and Herzegovina
CE	Completely Enumerated
CPA	Classification of Products by Activity
EC	European Commission
EU	European Union
FIS	Institute for Statistics of Federation of Bosnia and Herzegovina
GSBPM	Generic Statistical Business Process Model
MS	EU Member State
NSI	National Statistics Institute
RSIS	Institute for Statistics of Republika Srpska
RTA	Resident Twinning Adviser
RTAA	Resident Twinning Adviser Assistant
SBS	Structural Business Statistics
SPPI	Service Producer Price Index
ToR	Terms of Reference

FURTHER SUPPORT TO THE REFORM OF STATISTICS SYSTEM IN BIH

1. General comments

This mission report was prepared within the EU Twinning Project "Further Support to the Reform of the Statistics System in Bosnia and Herzegovina". It was the third and final mission on Service Producer Price Index and the seventh mission to be devoted to the Index of Service Production /Service Producer Price Index Subcomponent of the Project.

The purposes of the mission were:
- Presentation on conducted activities on SPPI development (implemented activities according to roadmap)
- Presentation of methodology documents (metadata and internal manual)
- Work on rebasing and recalculation of time series, implementation of new base year, DK example
- DST: Imputation, national vs regional level
- Presentation of TK calculation exercise, agreement on calculation method
- Danish example of Pricing Methods used for compilation of SPPI for M69, M70.2 and M73, specially for J62
- DST: Constant quality in relation to all aspects of the price statistics fundamentals (including data collection)
- Discussion on quality adjustment for selected SPPI (J61 and M71.1)
- Roadmap for further development of SPPI

Where appropriate, written advice provided in previous mission reports are retained where advice is still relevant and consistent to contemporary shifts in the BiH statistical landscape. Section 2. Assessment and results provides a summary that includes this mission and the full component due to this being an end of mission report.

The consultants would like to express their thanks to all officials and individuals from Bosnia and Herzegovina met for the kind support and valuable information, and which highly facilitated the work of the consultant.

This views and observations stated in this report are those of the consultant and do not necessarily correspond to the views of EU, BHAS, FIS, RSIS, CBBH, Statistics Denmark, Statistics Finland, Statistics Sweden and The Italian National Institute of Statistics.

2. Assessment and results

This section outlines the main assessments and results from the mission including some discourse and recommendations. All activities as per the ToR have been covered. Some small schedule changes were made and a revised schedule is provided in annex 2.

2.1 Actions and results addressed during the component

The following action items are a summary from missions held in December 2022, April 2023, and December 2023.

Action	Status	Summary
Investigate weight sources for the various levels within the aggregation structure.	Complete. April 2023	SBS to be utilised for 4-digit level and current direct collection practises for 6-digit level.
BiH to conduct a review of sampling methods to be able to appropriately account for both high and low market concentration scenarios.	Complete. April 2023	BiH understand the different sampling methods and when to apply them.
Select a sample of companies for the new SPPI.	Complete. December 2023	A frame for SPPI is sorted and learnings from practical sessions on sampling methods are expected to result in final steps being completed in the selective use of PPS-sampling where the cut-off method is not an adequate solution.
BiH to investigate if supply/use tables can enable the usage of CPI as an alternative data source for price coverage.	Complete. April 2023	BiH does not currently have an iteration of Supply and Use tables that can be used to stratify weights into business-to-business and business-to-consumer.
Initiation questionnaires and collection aids for development of new activities finalised (J62; M69; M70.2; M73).	Complete. April 2023	BiH have developed their materials for specific industries and have commenced outreach using a top-down approach.
Prepare an overview of J61 Telecommunications for review and discussion at the April 2023 mission.	Complete. April 2023 December 2023	BiH presented their current telecommunications questionnaire and data.
BiH to present progress on documentation development for metadata purposes, CSM development, eventual publication purposes and for internal use.	Complete. April 2023 December 2023	BiH provided a walk-through of their documentation. A copy will be provided to the experts for review and comments.

Sample design and weights. Production of outputs for entities and state level	Complete. December 2023	BiH have decided to draw samples and calculate weights to ensure coverage at the entity levels and state level. This gives the option to publish outputs at both levels.
Calculation design and aggregation steps implemented and/or mapped. Production of outputs for entities and state level	Complete. December 2023	BiH have decided to impute at the entity level as a default and at the state level on a needs basis by using common methodology. The decision is balancing data confidentiality; linearity of calculation flows; output accuracy, calculation consistency and paying attention to resource limitations.
Analysis tools, data visualisation and publication templates developed and tested for new service industries	i. Complete. December 2023 ii. In progress. December 2023	i. BiH and DST developed a test environment to analyse pilot indices. This includes: data input, calculation, validation, imputation, quality adjustment and visualisation. ii. Test environments to be rolled out across development areas in 2023/24 to support pilot studies.
Experimental calculation and test publication (dependent on data collection progress)	i. Complete. December 2023 ii. In progress. December 2023 iii. In progress. December 2023	i. Preliminary data sent to Eurostat. ii. BiH have run a test production cycle for 53.1 – Postal services. And are planning to add 61 - Telecommunication to the test cycle. iii. Test publication documentation produced.
Roadmap for SPPI Development	Complete.	Indicative "Roadmap for SPPI Development" reviewed and updated to meet current development progress. See annex 3.
Outreach and visitation to associations and/or establishments.	Complete.	BiH are in continuous contact with associations and establishments in the work they do with their sample expansion. This will naturally continue as the pilots progress and/or new developments are added.

2.2 Advice addressed during the component for current and continued development

Rebasing (index reference period)
When the term base period or reference period is discussed in price statistics it should be made clear as to which or all of the reference periods are being considered. Index reference period refers to when the index equals 100 (in rare cases institutions use 1000). Weight reference period refers to when fixed-value weights are observed. Price reference period refers to when item level prices are first used in index calculation. These periods can be the same but do not need to be the same. Rebasing can involve

updating samples, weights and the index reference period. More comprehensive updates should be accompanied with explanatory documentation to explain exactly what aspects have been updated and the procedures undertaken.

A change in the index reference period acts as a signal to data users (who want extended time series for historical analysis) that an update has occurred. When a country updates an index reference period a new period will now be equal to 100. The historical series needs to be normalised to this new index reference period and a so called "backward linking factor" is calculated and applied to the historical series at every level of aggregation.

In practice, and update to an index reference period is implemented by taking the new index value (e.g. 100) divided by the historical index value for a given period (or the average of a chosen number of periods). This produces a factor (per level of aggregation) which can be applied to all historical periods. Adjusting a time series with this constant will not change the price development between periods, but the adjusted index will lose additivity when aggregated from lower level to upper level indices. Publishing and/or providing such a factor on a needs basis can also support users that are using indices in contract regulation to transition from a historical series to a new one.

Unit values

Telecommunication services are well suited for unit value (average) prices. However, caution must be taken to ensure products are stratified to a reliable level of homogeneity. If a collected unit value price is very volatile from month to month, this may be indicative of potential changes in the mix of quality.

Unit value prices are calculated as the total revenue generated from all transactions of a particular defined product within the reference period divided by a volume measure connected to production or consumption. Another way to think of this is the collection of an average realized transaction price for a representative item. The specification(s) representing the activity should be defined with enough detail (paying attention to price determining characteristics) that the respondent and the price statistician can monitor and adjust for changes in quality (minimizing the risk of mix) but broadly enough that the service is repeated and transacted regularly.

Test environments for data collection and analysis.

BiH and DST developed a test environment to analyse pilot indices. This includes: data input, calculation, validation, imputation, quality adjustment and visualisation. Test environments are to be rolled out across development areas in 2023/24 to support pilot studies and compliment current production environments. This furthermore supports BiH's ability to run test publications prior to the inaugural release.

Quality Adjustment methods summary.

The most common methods of quality adjustment, as per the PPI Manual[1], fall under two categories: Explicit and Implicit. In the first instance the price statistician should attempt to perform an explicit adjustment and in the absence of explicit information implicit methods provide an acceptable secondary option. Note that a quality change must be evaluated from the producer's perspective in respect to revenue received:

"the evaluation of the quality change is essentially an estimate of the per-unit change in revenue that a producer will receive for the new characteristics possessed by the new quality using the same technology. This amount is not a price change because it represents the monetary value of the change in the value of production that is involved to produce the new quality. The value can either be estimated on the basis of the value to the user of the new quality, or the production costs from the producer" (PPI Manual – p.39)

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[1] Producer Price Index Manual: Theory and Practice. International Monetary Fund, Statistics Department (2004)

Explicit methods are used when the price statistician is able to quantify the difference in quality between the old and the new product. These include:
- Direct Comparison
- Quantity Adjustment (package size adjustment)
- Option Pricing
- Production Cost (resource cost)
- Expert Judgement

Implicit methods are used when the price statistician is unable to explicitly quantify the difference in quality. These include:
- Overlap
- Bridged Overlap (mean imputation quality adjustment)

It should be noted that when applying the bridged overlap method the outgoing item share of activity is imputed in the missing period and replaced in the subsequent period by a new item. Note that the imputation step in this method should align to the general imputation method (e.g. class mean imputation) and the calculation method (i.e. short term price relatives or long term price relatives). In summary, the previous period price of the new item is imputed using the imputed price change between similar product offerings available at the same time.

Weighting Pattern, Index Aggregation and Calculating the Index
BiH reviewed weight sources for the various levels within the aggregation structure. A determination was made to utilise weights derived from Structural Business Statistics (SBS) to weight together indices at the 4-digit level. This gives a harmonised and common base both within the PPI structure and in relation to other statistics contributing to the measurement of real GDP. It is estimated, at this stage, that BiH has the capacity to update these weights on a five year cycle. Stratification below the 4-digit level, that is, the 6-digit level remains as previously advised via direct collection. The following diagram has been updated from the previous report to reflect the developments made in the aggregation design.
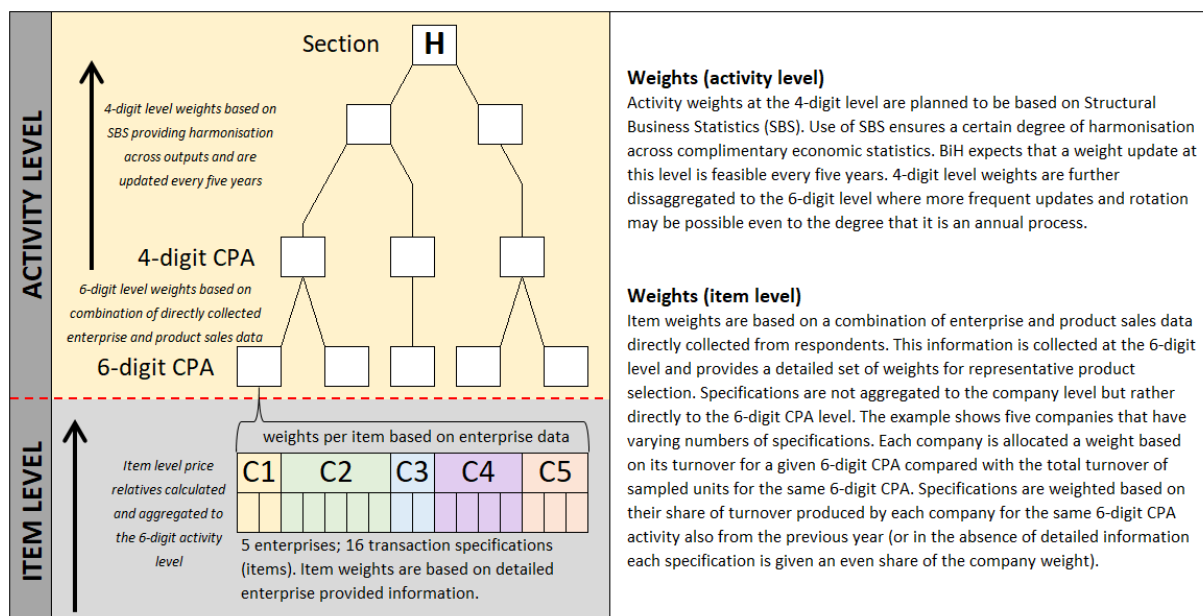
Sampling

BiH is focusing on the implementation of further industries in their SPPI-program and researching for the optimal sampling design. Cut-off, PPS and judgemental sampling sessions were continued during the mission week with the presentation of examples and application of methods to BiH test data. BiH is now positioned to consult internally and select strategically sampling methods balancing index representativeness (quality) with respective resource costs. It should be noted that even as exact sampling methods are being ratified, BiH has been in parallel conducting outreach and enrolment (that is, BiH is on track as per the indicative forward plan). The following is a summary of the methods and DST welcomes between mission meetings if support is required.

Sampling – Revisiting the theory
For the following summarised methods, each unit in the sampling frame requires a measure of size. Ideally weights for PPI are production values (sales plus change in inventories). As almost all service production leaves no inventory, sales can often be considered as equivalent to production value. Values should be in basic prices.

Probability Proportionate to Size
The formula used in the PPS selects the largest units with certainty (that is, they are completely enumerated (CE units) and represent their individual share of activity). Non-certainty units are selected using size based random sampling (that is, the probability of selecting a unit is proportional to its size). Non-certainty units are effectively weighted to represent similar frame units that were not selected.

This method is the most statistically precise and allows for sample error calculation. The drawback is that, as each non-certainty unit weight is unique, substitution to alternate units can be a more complex process.

Stratified Random Sample
Each unit in the sampling frame has a measure of size which determines its strata. The largest units can be selected with certainty followed by a random selection of units from each subsequent strata beyond the CE units. Within each non-CE strata units are considered to have the same weight proportional to the size of the strata and the number of units selected. Substitution is relatively straight forward as units that are no longer reporting can be directly replaced by another unit within the same strata.

Cut-off Sample
Each unit in the sampling frame has a measure of size. Units are ordered from largest to smallest and are included for data collection if they are within a pre-determined cut-off or cumulative percentage coverage (for example, 80 or 90 percent). The specific percentage should include a reflection on staffing resources as when it comes to activities that have low concentration a high number of companies may be required to reach a certain cut-off. Conversely, as with any of the methods, a minimum number of businesses should be selected (often at least three) to ensure confidentiality is maintained. If units can no longer report the next largest business is rotated in from the sampling frame.

CPI as an alternative data source
BiH price statisticians have progressed this action and have had discussions with National Accounts. Current work efforts regarding Supply-Use tables have not reached a stage where they are able to be utilised to stratify activities into business-to-business and business-to-consumer. It should be noted that EBS regulation does not require such stratification and the use of CPI is primarily as an opportunity to reduce burden following the "collect once, use many times" line of strategy. In the absence of Supply-Use tables, information about the predominance of resident consumers as the main customer group and/or price development of the consumer segment aligning to commercial transactions can be obtained either directly from businesses and/or from other statistics and studies. The usage of CPI as an alternative data source is at the discretion of BiH.

A recent alternative data survey conducted by the Voorburg Group on Service Statistics showed a high level of CPI usage in covering activities related to Transportation and storage; Accommodation and food services; Information and communication; and Other service activities.

CPI as an alternative data source – **Revisiting the theory**

For activities that are predominantly sold to households the CPI can be used as a proxy for direct collection. This is also applicable where price development experienced by households is representative of price development experienced by businesses. For activities where the CPI is considered a representative proxy BiH can therefore focus their resources elsewhere where direct collection is required.

When the CPI is used to indicate changes in producer prices there are a number of factors that need to be considered to ensure that the CPI is fit-for-purpose. For example, CPI classification categories must be converted to relevant CPA codes and adjustments need to be made when tax rates change to where the valuation basis for PPI is basic prices in contrast to the CPI valuation basis of purchaser prices. Further advice on these important factors can be found via the Voorburg Group on Service Statistics[2].

Data collection

Questionnaires have been developed for six activities and outreach and contact with associations and reporting units has commenced in two activities. BiH is positively building up their underlying enabling infrastructure and knowledge base and the expectation is that this contribute to a ramping up of collection work over the coming months. BiH would like some direct outreach support at a future mission which DST agree would be beneficial. BiH also raised the concept of constant quality and whilst discussions were held, DST recommend that a targeted session be held at the next mission presenting constant quality in relation to all aspects of the price statistics fundamentals (including data collection). An overview of the fundamentals can be found in annex 4.

Data collection – Revisiting the theory

Data collection for new activities is recommended to commence with outreach to trade associations, government departments and/or large companies to learn primarily about record keeping and options for price collection. Topics to be discussed may include:

- Types of price data used in company internal analysis
- Existing data collection conducted by trade associations
- Market structure, major products, and pricing strategies
- Key drivers and trends (past and expected)
- Cost structure and demand factors
- Frequency of price changes and factors affecting prices
- Specifications that can be used to follow price changes

Data collection may be conducted utilizing a number of mediums and fall into three basic types: personal interview, self-enumeration, and telephone interview. The choice of medium is dependent on a number of factors including but not limited to: topic complexity, non-response, data availability, and market concentration.

Practical initiation templates and tools such as questionnaires, collection aids, scripts, and/or contact management spreadsheets should be established. This includes procedures for selecting items, specifying transactions, and collecting price updates. Initiation procedures and supportive templates

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[2] Alignment of Methodology and Scope between Services Producer Price Indices (SPPIs) and Consumer Price Indices (CPIs): Developing a framework for using CPIs in SPPI calculation.
https://www.voorburggroup.org/Documents/2021%20Washington____/Papers/3008.pdf

typically fall into three stages: <u>pre-initiation</u>; <u>at the meeting</u>; and <u>post meeting</u>. If possible, collect price information for historical periods. This will allow for simulating publication processes with real data earlier in the development phase.

Businesses' willingness to participate in surveys and provide data can be a challenge and educating and building rapport is critical. A concerted effort during the outreach phase should be made to address potential respondent concerns. Some specific recommended actions include:

- Senior-level staff engagement with trade organizations and large businesses.
- Build company profiles for the largest businesses to ensure that the interviewer is well-informed prior to contact with the respondent.
- Investigate any current and/or prior contact history that a potential respondent has already had with the statistical institutes and maintain records of contact with the respondent for future reference.
- Produce informative documentation about the statistics institute and/or the statistical collection that can be sent electronically or provided physically to potential respondents.
- Target contact to an appropriate personnel level within the trade organization and/or business. Ideally the individual(s) will have knowledge of products and price development and the authority to report information to the statistical institute.

Imputation, aggregation and user needs
BiH requires PPIs to be calculated both at the institution level and the state level (coordinated level).

A common approach for PPI calculation is as a state level output for state level deflationary purposes. In this instance the item level for a given elementary aggregate would consist of all items connected to domestic production irrespective of geographical location. If an item (price observation) is missing all other observed items and quality adjusted items would be used, for example, to calculate an imputation for that missing item. That is, price development based on price observations from all three institutions (and therefore respective regions) would be used to estimate the missing price observation. This essentially 'preserves' the price development of state level indicators.

A less common approach for PPI calculation is calculating regional indices in the first instance essentially meaning that default imputation is conducted utilising regional data rather than state data.

Transportation and Storage PPI
Bosni i Hercegovini

Transportation and Storage PPI
Republika Srpska

Transportation and Storage PPI
Federacija BiH

Transportation and Storage PPI
Brēko Distrikt
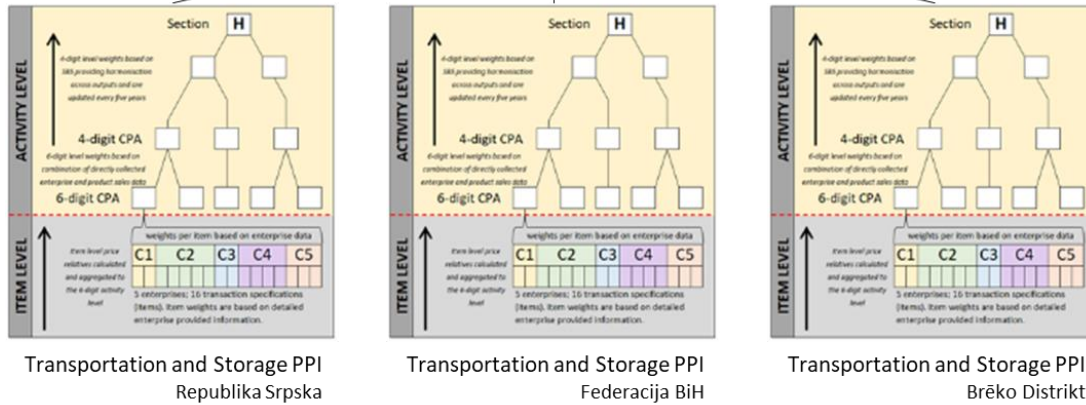
In this example, using a class mean imputation, entity price development is 'preserved', that is, as this item level imputation is taken from the regional level it will have the same movement as the regional level aggregate at the activity level. If a state level imputation was utilised the imputation would impact the regional level and vice versa if a regional level imputation is utilised it impacts the state level. Practises occurring in other economic statistics are also of relevance when seeking to harmonise PPI with complimentary indicators. DST and BiH held detailed discussions dedicated to this during the mission and BiH is now tasked to identify their methodology going forward and document this in concepts, sources and methods documentation.

Testing the production cycle
The PPI is due to become a part of the official suite of price indicators that BiH publishes and that are utilised by key stakeholders such as National Accounts, Central Bank of Bosnia and Herzegovina, and eventually an important contributor to the European Statistical System (ESS).

Upon the inaugural official publication there will be an expectation from users that the new indicator will be published on time and to a particular quality. To secure the certainty of this output, BiH will need to consider their strategic stance regarding core staff levels to secure a sustainable knowledge base of PPI and to ensure consistent production and publication activities.

Prior to the inaugural publication it is recommended that BiH conduct a series of test publications, for internal use only, giving staff an opportunity to test procedures and documentation. This will further allow for stress testing if staff resources are adequate or if additional staff are required. The time constraints of a fixed production schedule (collection, processing, analysis, dissemination) are significantly more rigid outside of the research phase.

Secondly, testing the production cycle is also an opportunity to champion the new statistics to other internal stakeholders to further internal use and communication and ensuring harmonization across economic statistics in BiH.

Development of the test environment models during this mission has greatly enabled this important step and further work to be done should be focused on adopting materials from other publications to create a harmonised set of publication materials.

Publication - Delivery +45 days

Current regulation states that SPPIs are to be delivered T+90, but recently Eurostat has expressed a wish for this to be reduced to T+45. As BiH has yet to implement a consistent and systematic production cycle for quarterly data deliveries to Eurostat - this investigation point is recommended to be included in their initial research phase and testing of the production cycle.

Maintaining and reviewing weights and samples

BiH is recommended to investigate to what extent annual reviewing of weights and samples in the production cycle can be actioned over the course of the year taking some of the pressure off the bottleneck months of December and January. Annual activities should be mapped out into actionable items and described with how-to documentation. Dependencies should be thoroughly understood and strategies in place to avoid potential delays, for example, periodic meetings with key internal data providers.

Telecommunications

BiH have very successfully collected unit value data from the main telecommunication providers on a detailed basis. Data is collected for an extended period allowing for circa eight years of analysis, where they have value and volume measures for a large suite of specifications that is based on the domestic accounting standards. During the research phase test calculations have been made using both the Fisher and the Laspeyres formulas with similar results. Given these results, it was decided during the mission to utilise the Laspeyres method going forward. The current production system is also limited to supporting Laspeyres indices. The Laspeyres index is being calculated for telecommunications for each entity and then recalculated on the state level on the same data utilized for the entity calculations. This approach ensure the same results across entity and state level, but will result in imputations preserving the entity level movement rather than the state level movement. This decision is balancing data confidentiality; linearity of calculation flows; output accuracy, calculation consistency and paying attention to resource limitations. The main imputation methods discussed were a bridged overlap and mean class imputation, where it was recommended that a mean class impute is the default method used for missing data. Overall, the data are of a high quality with some points that warrant further investigation by BiH utilizing complimentary data sources (such as SBS and STS). BiH have already made an assessment applying the calculated SPPI's to ISP and the value and volume levels seem reasonable. Therefore, it is concluded that the data quality is sufficient for the calculated index to progress from experimental to be published when BiH feel comfortable that resources allow for such a transition.

Legal services.

Legal services can be defined by the area of legal services to which the service refers (for example: civil; commercial; criminal; environmental; intellectual property; family; taxation; etc.); the legal practitioner providing the service (for example: type - attorney vs. solicitor vs. barrister; grade and/or experience; area of expertise and/or qualifications); or the type of client and their contractual arrangement.

Common methods used for price collection and comparison are: direct use of prices for repeated services (for example, a fixed fee charged to process the exchange of ownership of a residential property); charge-out rates (for example, hourly rates by staff level of expertise); percentage fee and/or model pricing (for example, percentage of a transaction value of a successful merger and acquisition deal) and contract pricing method (for example, a lawyer is paid a monthly upfront fee for the promise of availability of service).

In BiH there exists an official tariff price list for legal services where each legal service is listed and designated a number of points, which then equates to a specific price. The price list, however, rarely changes and was last changed in 2004. Internal legal experts in BiH have advised that lawyers comply with this list and therefore this would constitute an adequate data source to price legal activities in BiH. BiH will need to further investigate how accurately these list prices are representative of actual transactions and changes in industry productivity.

It is recommended to pair this list with some sort of weighting structure, where court data could be a good option. Contact with the association of legal practitioners has been established and BiH are planning on a meeting in the near future, therefore BiH will investigate the possibilities for weighting options and further analysis in 2024.

An integrated system of price statistics

An integrated approach to the system of price statistics translates to a harmonized suite of price statistics with data based on standardised concepts, definitions, and classifications. Furthermore, this ensures that at a coordinated level we are maximising opportunities that our price statistics are able to be used and correlated between statistical products and across statistical domains – a win for both the NSI and statistical users.

What do we have to gain?
• Scalable and sustainable connections to organisational ideals
• Rapid "point-in-time" checking of harmonised concepts and methods
• Integrated and automated monitoring opportunities
• Institutionalised knowledge
• Adaptive organisation that is more agile to contemporary needs

What do we risk?
• Disconnection from organisational ideals
• Erosion of harmonised concepts and method
• Continuity and succession planning challenges
• Slow moving organisation with multiplying bespoke solutions

The development of SPPIs and therefore the fulfilment of the EBS requirements is as ambitious as it is necessary. BiH is recommended to consider their SPPI development both as part of a system of price statistics and an integrated stakeholder within economic statistics. This can be seen as an investment in development but also an investment in future savings and sustainable outputs.

3. Conclusions and recommendations

BiH have continued to build upon their strong foundations to continue the development of the SPPI to meet the new EBS requirements. BiH is progressing well with their ambitious forward plan, see annex 3, and are meeting current development goals. Comprehensive results from the mission year and component are stated under *2. Assessment and results* and equates to eleven completed main actions and two partially completed main actions largely as per plan.

With this in mind, the expectations for further development and future missions are as follows (some remain relevant from previous missions held in 2023).

Recommendations:

- BiH continue to apply sampling methods to finalise samples appropriately accounting for both high and low market concentration scenarios. BiH methodology unit to support decision process.

- Initiation activities to continue and personal interviews to be utilized. Existing materials to be adapted where possible (questionnaires; collection aids) but also tailored as required.

- Analysis tools, data visualisation and publication templates developed and tested for new service industries. Harmonised with other price statistics and economic statistics where appropriate.

- It is advised that during 2024 BiH tests production and publication capabilities for eventual official publication and also to champion their statistics to internal stakeholders ensuring high quality and harmonization across economic statistics. This testing includes:
    o Roll-out of test environments
    o Data Publication / Delivery +45 days.
    o Understanding what aspects of annual updates can be spread-out across the year.
    o Test production documentation produced (news statement, how to present data and data developments etc.)
    o Concepts, sources and methods documentation internally vetted by major stakeholders

- BiH should confront their data and calculated indices from the initiated industries with internal and external sources to ensure coherency (for example, National Accounts estimates) with other indicators that complete the picture of the BiH economy in regards data sources, methods applied and output results.

- Update of the "Roadmap for SPPI Development" to have an outlook towards 2028, to support the future development progress of BiH and aim towards fulfilling the EBS requirements.

Annex 1. Terms of Reference for the current mission

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Terms of Reference

EU Twinning Project BA 17 IPA ST 01 20

Component 1.3.2 - Index of Service Production/Service Producer Price Index
4th December 10 a.m. – 8th December noon 2023

Venue: Vladike Platona bb, Banja Luka

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Activity 1.3.2G: Service Producer Price Index III

1. Mandatory result

New STS indicators for SPPI and ISP (Services Producer Price Index, and Index of Services Production new proposed FRIBS Regulation) produced according to the FRIBS (current EU regulation STS No 1165/98)

New methodology for calculation of SPPI (for selected service industries) developed.

SPPI produced based on new methodology and delivered to Eurostat (N, SA, WDA and T)

New methodology for calculation of ISP (production of volume index) developed according to the FRIBS

ISP produced based on new methodology and delivered to Eurostat

Index of Service Production (ISP) is currently not calculated in BiH. It is therefore a major priority in the project to be able to publish and deliver Index of Service Production to Eurostat at the of the project period. The statistics are compiled based on turnover index from the statistic Purchases and Sales by Enterprises and on price index from Producer Price Index for Services (SPPI) and the Consumer Price Index (CPI). In this way the subcomponent relates to the work on SPPI carried out by the previous Twinning project and continued in this project.

Indicator / Relevant Milestones / Internal deadlines:

* Indicators for SPPI and ISP published and delivered to Eurostat

2. Purpose of the activity

- Presentation on conducted activities on SPPI development (implemented activities according to roadmap)
  - Presentation of methodology documents (metadata and internal manual)
  - Work on rebasing and recalculation of time series, implementation of new base year, DK example
  - DST: Imputation, national vs regional level
  - Presentation of TK calculation exercise, agreement on calculation method
  - Danish example of Pricing Methods used for compilation of SPPI for M69, M70.2 and M73, specially for J62
  - DST: Constant quality in relation to all aspects of the price statistics fundamentals (including data collection)
  - Discussion on quality adjustment for selected SPPI (J61 and M71.1)
  - Roadmap for further development of SPPI

3. Expected output of the activity

- The items described under *Purpose of the activity* presented and conclusions made
- Mission report prepared
- Roadmap for further development of SPPI agreed

Annex 2. Revised Schedule

TIME	Monday 4.dec	Tuesday 5.dec	Wednesday 6.dec	Thursday 7.dec	Friday 8.dec
0845-0900		TEA BREAK	TEA BREAK	TEA BREAK	TEA BREAK
0900 - 0930		Calculation, imputation (includin national, vs. regional quality adjustment)	Presentation on conducted activities on SPPI development (B&H) -wights - production cycle -data collection overview -aggregation structure decision	Constant quality in relation to all aspects of the price statistics fundamentals (RD) Rebasing and recalculation of time series (NEL)	Test environment for data collection and analisys (RD)
0930 - 1000					
1000 - 1030	RSIS presents telecom development				
1030 - 1045		TEA BREAK	TEA BREAK	TEA BREAK	TEA BREAK
1045 - 1115		Calculation, imputation (includin national, vs. regional quality adjustement)	Presentation of methodology documents (B&H)	Discussion on quality adjustment for selected SPPI (J61 and M71,1) (RD)	Test environment for data collection and analisys (RD)
1115 - 1145					
1145-1215					11:30 Closing and formalities
1215-1245	LUNCH	LUNCH	LUNCH	LUNCH	
1245-1315					
1315-1345	RSIS presents telecom development	FIS present telecom development & data confrontation for calculated indices	Pricing methods used for compilation of SPPI for M69, M70,2 and M73, specially for J62 (NEL)	Roadmap for further development of SPPI Status and mission report (All)	
1345-1415					
1415-1445					
1445-1500		TEA BREAK	TEA BREAK	TEA BREAK	
1500-1530		Questions	Questions	Questions	

Annex 3. Roadmap for SPPI Development (indicative)

The following roadmap is an indicative plan developed during the December, 2022 mission and updated in subsequent missions. This has been utilised by BiH for internal planning purposes. BiH has thus far largely held to the timeframe of this indicative plan. This plan support meeting the demands of EBS requirements to be fully implemented (with base year 2025). This roadmap will extend to 2028 in the next phase of support.

| Action / Activity	Current status	Output	2023 J	F	M	A	M	J	J	A	S	O	N	D	2024 J	F	M	A	M	J	J	A	S	O	N	D	2025 J	F	M
Selection of activities to include in the new SPPI.	Complete.																												
Propose an activity weighting structure for the new SPPI.	Complete.	Aggregation diagram																											
Select a sample of companies for the new SPPI.	Complete.	Sample designed at entity level / Following documentation	x																										
Create initiation questionnaires and collection aids for activities included in the new SPPI. Finalize and document procedures for selecting items, specifying transactions, and collecting price updates.	Complete.	Questionnaire designed / Guidelines for RU / Initial letters / SPPI Methodology	x	x																									
Outreach to appropriate trade associations, government departments, and **large companies** to communicate the SPPI development and generate support (for example, Industry Association, Chamber of Commerce).	Complete. (ongoing for new developments)	Contact established / Visitation notes made and shared between RSIS, FIS and BHAS / Knowledge on industry gained				x	x	x	x	x	x	x	x	x	x														
Initiation of selected respondents in new SPPI (Q4 2023 data and *Q1 2024 data). Includes: determine frequency and price collection strategy.	Commenced.	Sample verified and finalized													x														
Begin collecting price updates for companies initiated in Q2* and Q3*. Combination of phone and email (personal visits on a needs basis).	Commenced.	Prices are collected quarterly							x*			x*					x			x				x			x		
Setup and adjustment of current SPPI IT application for new activities	Commenced.	IT application set								x			x		x		x												
Finalise weighting structure and publication structure for new SPPI.	Commenced.	Weighting structure designed															x												
Develop publication documentation and schedule.	To be completed.	Press Release designed																							x				
Quarterly calculation of SPPI with Q4 2023=100. Quarterly testing of collection and calculation procedures and instruments.	To be completed.	Experimental Index Calculation of New indices																x			x			x			x		
Test publication(s). Internal presentation.	To be completed.	Publication Schedule Designed / Internal presentation made																											x
Concepts, sources and methods documentation	Draft available	Ongoing process / work																											
Disseminate notice about upcoming release of new SPPI.	To be determined, expectations are circa 2028																												
Publish new SPPI - Official Launch.	To be determined, expectations are circa 2028																												
Use of SPPI indices for calculation of ISP/National Accounts	To be determined, expectations are circa 2028																												

Annex 4. Price Statistics Development Fundamentals

Over the course of the mission the ten fundamental aspects of price development[3] were discussed and used as a baseline to understand current progress and future needs.

The fundamental aspects break up price statistics activities into the following aspects:

1. Determining the objectives, scope and conceptual basis of the index;
2. Deciding on index coverage and classification structure;
3. Deriving the weighting pattern;
4. Designing the sample;
5. Collecting and editing the prices;
6. Adjusting for changes in quality;
7. Calculating the index;
8. Disseminating the indices;
9. Maintaining samples of businesses and products;
10. Reviewing and reweighting the index

These price statistics building blocks were delivered in combination with GSBPM fundamentals with the end-to-end production and future development of SPPIs at BiH a focal point for discussions. Findings led to high quality technical discussions and the subsequent mapping of an indicative roadmap for SPPI development.

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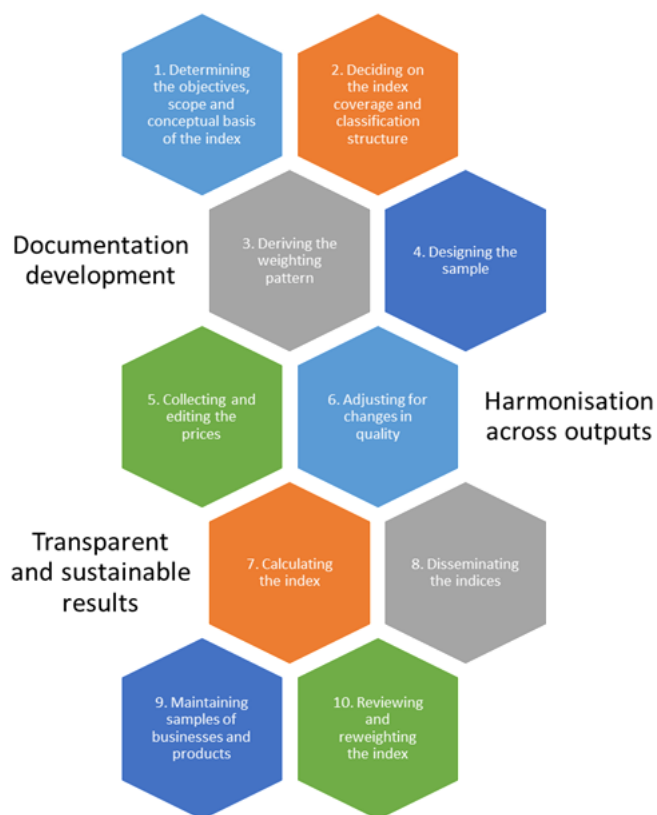
[3] The ten steps for price statistics development can be found in three official price statistics manuals including: An Overview of the Steps Necessary for Developing PPIs (PPI Manual; 2004; p50-60); An Overview of the Steps Necessary for Developing XMPIs p59-70; Chapter 1 (CPI Manual; 2020; p1-27)

Annex 5. SPPI Development Status

Current SPPI Production and Development Status for BiH. Each SPPI has a unique methodology and challenges harmonised through fundamental price statistics principles (See annex 4).

	Activity by Industry	**Time coverage**	**Base period**	**Status of Activity**	**Dissemination**
H49.41.	Freight transport activity by road	Q1 2015 - Q3 2023	2015	Regular survey	Published
H52.10.	Warehousing and storage activity	Q1 2015 - Q3 2023	2015	Regular survey	Published
H53.10.	Postal activities under universal service obligation	Q1 2015 - Q3 2023	2015	Regular survey	Plan to publish in May 2024
H53.20.	Other postal and courier activities	Q1 2015 - Q3 2023	2015	Regular survey	Plan to publish in May 2024
J61	Telecommunications	Q1 2015 - Q3 2023	2015	Regular survey	Plan to publish in May 2024
M71.1.	Architectural and engineering activities and related	Q1 2018 - Q3 2023	2018	Regular survey	Published
N80	Security and investigation activities	Q1 2017 - Q3 2023	2017	Regular survey	Published
N81.20.	Cleaning activities	Q1 2017 - Q3 2023	2017	Regular survey	Published
J62	Computer programming,consultancy and related activities	Q1 2024 -	2025	Pilot survey introduce in Q1 2024	Plan to publish circa 2028
M69	Legal and accounting services	Q1 2024 -	2025	Pilot survey introduce in Q1 2024	Plan to publish circa 2028
M70.2	Management consultancy activities	Q1 2024 -	2025	Pilot survey introduce in Q1 2024	Plan to publish circa 2028
M73	Advertising and market research	Q1 2024 -	2025	Pilot survey introduce in Q1 2024	Plan to publish circa 2028

Annex 6. Persons met

BHAS:
Maja Hadzi-Stojanov, Senior Officer for Producer Prices in Services
Alen Bajramovic, Head of Department for Services Statistics

FIS:
Merima Beganovic, Senior Advisor for Business Services

RSIS:
Aleksandra Djonlaga, Senior Officer for Producer Prices in Services
Jelena Glamocika, Head of Department for Services Statistics
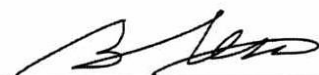Jelena Kljajic, Senior Statistician

RTA TEAM:
Niels Madsen, RTA
Larisa Muslimović, RTAA

Interpreter:
Biljana Strika

Signatures

For the approval of the contents of this report, representatives from BHAS, FIS and RSIS as well as MS experts and the RTA sign here:
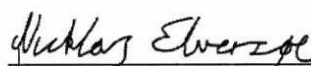
Component leader, BHAS

Component leader, FIS

Component leader, RSIS

MS Expert

MS Expert