

TWINNING CONTRACT

Support to the State and Entity Statistical Institutions, phase V

Bosnia-Herzegovina



MISSION REPORT

on


Retail Trade Statistics

Component no 1.4, 5th activity

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		 STATISTICS DENMARK

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List of Abbreviations

BiH	Bosnia-Herzegovina
BHAS	Agency for Statistics of Bosnia and Herzegovina
HBS	Household Budget Survey
CPI	Consumer Price Index
DT	Distributive Trade
FBIH	Federation of Bosnia and Herzegovina
FIS	Institute for Statistics of Federation of Bosnia and Herzegovina
ITA	Indirect Tax Authority
KAU	Kind of Activity Unit
LKAU	Local Kind of Activity Unit
RS	Republika Srpska
RSIS	Institute for Statistics of Republika Srpska
RT	Retail Trade
RTI	Retail Trade Index
SA	Seasonal Adjustment
SBR	Statistical Business Register
STS	Short Term Statistics
ToR	Terms of Reference
VAT	Value Added Tax
WA	Working day Adjustment

Executive Summary

This mission contained a 1.5 days course in practical use of Demetra for seasonal adjustment. The remaining part of the mission was spent on regular work on this component, primarily concerned with the monthly retail trade statistics.

The Demetra course was held with the participation of staff from domestic trade statistics and in addition to this also staff from other relevant STS statistics. In addition to the introduction to the practical use of Demetra for seasonal adjustment, the course also touched some of the underlying theoretical aspects.

Important topics covered were:

- Preparing input for Demetra
- The Demetra interface
- Automatic and customized seasonal adjustment with Demetra
- Theoretical aspects of seasonal adjustment
 - Preadjustment

- Calendar effects and outliers
 - Forecast of a series
 - Decomposition of a series
- Quality measures of SA
- Direct vs. indirect SA

For both the quarterly survey on distributive trade and the monthly survey on retail trade new methods were introduced by the beginning of 2013. This includes new sample designs, new questionnaires and new estimation methods. Since the data collection phase of the 1st quarter of the DT survey was just begun, the focus on this mission was on the RT survey.

The remaining two benchmarks of this component are:

- D. Relevant results analyzed and plan for regular surveys in force by the 8th project quarter (end of September 2013).**
- E. Short Term Business statistics improved retail trade short term indicators harmonized with EU standards by the 8th project quarter (end of September 2013).**

It is absolutely in place to conclude that due to the hard work of the BC staff, these are well within reach. The complete redesign of the surveys, with regard to sample design, questionnaires and estimation is completed. The below list brings an overview of the most important remaining issues regarding the monthly RT statistics. Many of these will also apply for the quarterly DT statistics:

1. Estimation
 - a. FIS must finalize the implementation of the ratio estimation
 - b. The ratio estimation will be implemented in the IT application, but until it is, it should be supported by sample experts
2. Linking the new series to the old ones
 - a. FIS must finalize the link between January 2013 and December 2012, using the matched sampling technique
 - b. A new explanatory example of the matched sampling technique will be provided by IPA experts
3. Quality checking the new series
 - a. All series should be checked for irregular developments, possibly inherited from the old time series (or caused by a miscalculation), and the reason should be found
 - b. If the irregular development does not reflect anything real (if it is purely caused by sample changes for example), consider performing matched sampling to calculate a new growth rate
4. Deflating with indices from CPI
 - a. A CPI-Nace rev. 2 correspondence table for FBIH needs to be finalized
 - b. Calculation of the appropriate deflators weighting existing CPI indices
 - c. Perform the actual deflation on the appropriate levels. On state level, either indirect deflation will be used, meaning adding up the deflated turnovers from the entities, or a direct approach will be considered
5. Compiling series for seasonal adjustment

- a. A final decision on which series to seasonal adjust needs to be made. The minimum is the EU aggregates, but are there other series for national needs?
 - b. The IPA experts are available for help with the seasonal adjustment of quality checked unadjusted series, aggregated at the levels for the seasonal adjustment to be performed at
- 6. IT application
 - a. A basic version to be used for DT survey must be in production as soon as possible
 - b. Implementation of ratio estimation and variance estimation in the STS application was agreed upon

Remaining issues and final remarks

During this mission a short discussion on dissemination took place, primarily concerned with which indices to publish. As a minimum, indices with a fixed base year (2010) must be published, but also the monthly growth rates, especially of the seasonal adjusted series, are of interest to the users. Yearly growth rates for each month as well as accumulated yearly growth rates are also possible variables to consider for publication.

Regarding quality measures, documentation and metadata, they were not the topics given the highest priority on this mission. A brief introduction to variance estimation was given, and also the various metadata systems in Eurostat (ESMS, ESQRS, SIMS) were introduced. The topic of metadata and quality/accuracy measurement in particular is highly relevant, and it is worth given priority to this in the near future. That being said, it is obvious that at this point it has been more important to improve the quality than to improve the measurement of it.

Finally, there is still work to be done, but it is the opinion of the IPA experts that by the end of this project in September 2013, we can conclude that the regular production of these improved STS trade statistics in BiH has been ensured.

No exact date for the final mission has been agreed yet, but for now the provisional plan is to have it in first half of September.

<h3>1. General comments</h3>

This mission report was prepared within the Twinning Project „Support to the State and Entity Statistical Institutions, phase V”. It was the fifth mission within subcomponent 1.4 on retail trade statistics of the project. This mission contained a 1.5 days course in practical use of Demetra for seasonal adjustment. The remaining part of the mission was spent on regular work on this component, primarily concerned with the monthly retail trade statistics.

The first mission on this subcomponent, carried out in the beginning of November 2011, was an assessment mission resulting in a rather comprehensive mission report including important background information on the current situation regarding internal trade statistics in BH. The second mission, carried out in March 2012, was primarily a training mission, making local experts familiar with general methodology and in particular current production methods in Danish domestic trade statistics. In addition to this, issues concerning the domestic trade statistics in BiH were discussed, resulting in important homework of which the results were

discussed during the third mission carried out in June 2012. During that third mission a rather detailed plan for the work towards the production of improved domestic trade statistics from 2013 was made. The fourth mission contained several important activities, including final agreements on sample designs, estimation, imputation, deflation and linking of new series to old ones. This report will assume familiarity with the reports of the four previous missions.

All course participants showed great interest and commitment during the course, which makes the teaching job a lot easier and more interesting, so thank you for that. As always the local collaborators on this component were a pleasure to work with, and it is also in order to give special thanks to the highly qualified interpreter.

The views and observations stated in this report are those of the consultants and do not necessarily correspond to the views of EU, BHAS / FIS / RSIS or Statistics Denmark.

2. Assessment and results

Introduction

The Demetra course part of this mission will not take up much space in this report. The main focus will be on the status of the improved domestic trade statistics, and the remaining work to be performed towards the next and final mission.

Demetra course

The Demetra course was held with the participation of staff from domestic trade statistics and in addition to this also staff from other relevant STS statistics. It took 1.5 days and gave an introduction to the practical use of Demetra for seasonal adjustment, but also touched some of the underlying theoretical aspects. The presentations and exercises used were distributed among the participants and will not be included here. They are available upon request, of course.

Important topics covered were:

- Preparing input for Demetra
- The Demetra interface
- Automatic and customized seasonal adjustment with Demetra
- Theoretical aspects of seasonal adjustment
 - Preadjustment
 - Calendar effects and outliers
 - Forecast of a series
 - Decomposition of a series
- Quality measures of SA
- Direct vs. indirect SA

The participants showed great interest in the subject, and indeed it seemed that the aim of the course – namely that the participants are now able to perform simple SA using Demetra – were achieved.

Currents status on the new surveys

For both the quarterly survey on distributive trade and the monthly survey on retail trade new methods were introduced by the beginning of 2013. This includes new sample designs, new

questionnaires and new estimation methods. Since the data collection phase of the 1st quarter of the DT survey was just begun, the focus on this mission was on the RT survey. Below the current status on the new RT statistics is reviewed.

Data collection

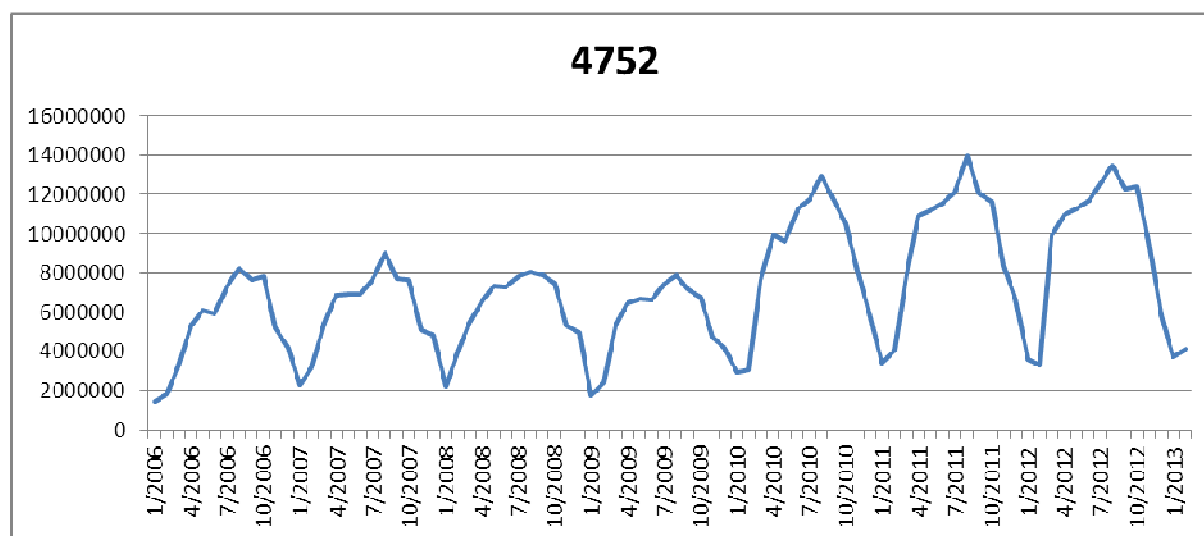
In both entities the data collection for January and February were performed with satisfactory response rates. For **FIS** it was around 90 pct., but even better response rates are expected in the future. Most non-responding units were inactive or misclassified. **RSIS** reported also to have response data from around 90 pct., and all non-responding units gave information about the reason for non-response (inactivity, misclassifications...).

Estimation

In both entities ratio estimation is being used from January 2013 and forward. In **FIS** there was a problem with the implementation, but it was solved during the mission.

Linking to old series

In **RSIS** the use of ratio estimation has been performed and used on December 2012 data, collected as “previous month” data in the January 2013 survey. The growth rates from the old series have then been applied to the new level of December 2012, to link the new series with old ones. This way, obviously, any problem with the growth rates in the old series is inherited to the new one. It seems that for some activity classes there is an issue to address. For example:



Obviously there is a level shift issue in the beginning of 2010. This probably does not reflect a real change in the turnover of this activity, so it should be taken care somehow (more of this below).

In **FIS** no new survey data from December 2012 is available, so the matched sample technique must be performed to link the January 2013 levels to the old series. The method was described in some detail during the previous mission, but without the methodology staff present, and there has been a slight confusion on exactly how to perform it. This was sorted out during the mission, but it meant that no series were calculated for FBIH, yet.

A practical explanatory example on the use of matched sampling for the calculation of growths rates were explained by the IPA experts. An edited version of this will be distributed to the local experts after the mission.

Seasonal adjustment of new RT series

A first look at seasonal adjustment of the new RT series (from RSIS) was also included in this mission. But since some series needs to be checked for unwanted changes, the topic was somewhat cursory covered. To be able to make final decisions regarding method choices, models, etc., completely finalized unadjusted series are needed.

IT application

There is an IT application to be used as a common framework for many STS statistics in BiH. The current work on this application, adapting it to be used for the monthly RT statistics, were presented at this mission. The application is to be used by all three statistical institutes, and it facilitates data entering and editing as well as error checking (logical and probabilistic).

An older version of this application is currently in use for the RT statistics, and it will be for a few months more. It was decided to implement in this application also the calculation of ratio estimates as well as variance estimation (based on direct estimation, not the ratio estimation). It is the hope, that this can be finalized before putting the new version in production.

Regarding the use of the application on the new survey on distributive trade, there is an urgent need for this to be available as soon as possible, possibly with very basic functionality to begin with.

Deflation using CPI

The work with calculating RT deflators from CPI base indices is in progress, and it will be finally developed soon, at first independently from the common IT application. A CPI-Nace rev. 2 correspondence table for RS has been produced, and a similar one is needed from FIS. They will be the basis for the calculations.

Once the deflators are ready, deflated series can be produced in line with the STS regulation.

Distributive trade and secondary activity

All enterprises in the new DT survey are asked to divide their activity among Nace groups 45,46 and 47. But since figures are published on a 3-digit level, the secondary activity must be distributed from the 2-digit level to the 3-digit level, depending only on the main activity (4 digits) of the enterprise. Such a correspondance table were completed for RS, and a similar one is needed from FIS.

3. Conclusions and recommendations

The remaining two benchmarks of this component are:

- F. Relevant results analyzed and plan for regular surveys in force by the 8th project quarter (end of September 2013).**
- G. Short Term Business statistics improved retail trade short term indicators harmonized with EU standards by the 8th project quarter (end of September 2013).**

It is absolutely in place to conclude that due to the hard work of the BC staff, these are well within reach. The complete redesign of the surveys, with regard to sample design, questionnaires and estimation is completed. The below list brings an overview of the most important remaining issues:

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topic of metadata and quality/accuracy measurement in particular is highly relevant, and it is worth given priority to this in the near future. That being said, it is obvious that at this point it has been more important to improve the quality than to improve the measurement of it.

Finally, there is still work to be done, but it is the opinion of the IPA experts that by the end of this project in September 2013, we can conclude that the regular production of these improved STS trade statistics in BiH has been ensured.

No exact date for the final mission has been agreed yet, but for now the provisional plan is to have it in first half of September.

Actions needed for preparing and conducting the next mission or future missions

For BC, see below.

Along with the final mission report, the IPA experts will supply a practical explanatory example on the use of matched sampling for the calculation of growth rates.

The IPA experts will provide a methodology paper on Danish RTI by 15 June 2013.

Towards the next mission the IPA experts will be available for assistance in seasonal adjustment as well as various computational issues.

4. What to do before the next mission for the BC Counterpart		
Action	Deadline	Responsible person/institution
Complete first compilation of ratio estimation for RT figures from 2013	19/4-2013	FIS
Ensure future regular compilation of ratio estimation – until implemented in IT application	End of May 2013	FIS, RSIS
Complete the linking of new RT series to old ones by calculating growth rates with matched sampling technique	End of April 2013	FIS
Quality check the linked RT series, and use matched sampling technique for the calculation of new growth rates, where the old growth rates are not reflecting real changes. Provide final series to BHAS	20/5-2013	FIS, RSIS
Compile a correspondence table between 4-digit nace and 3-digit nace to be used for the placement of secondary activity included in the DT survey	End of April 2013	FIS
Calculate first results for DT, 1 st quarter 2013, link it to the old series, and quality check as described above. Provide final series to BHAS	End of May 2013	FIS, RSIS
Send final versions of new unadjusted data series on turnover, on all publication aggregates (nationally and for Eurostat) to IPA experts. Include entity level as well as state level	15/6-2013	BHAS
Facilitate a basic version of the new IT application to be used for the new DT survey	End of April 2013	BHAS
Input on implementation of ratio and variance estimation in IT application from methodology staff	End of April 2013	FIS, RSIS
Implement ratio estimation into the new IT application	End of May 2013	BHAS
Implement variance estimation into the new IT application	End of June 2013	BHAS
Finalise CPI-Nace rev. 2 correspondence table for calculation of deflators for FBIH	End of April 2013	FIS
Calculate deflators on entity and state level and deflate the series.	End of May 2013	FIS, RSIS, BHAS
Send final versions of new unadjusted data series on deflated turnover, on all publication aggregates (nationally and for Eurostat) to IPA experts. Include entity level as well as state level	15/6-2013	BHAS

5. Topics for the next meeting, action 1.4.6

- Assessment and evaluation of new surveys

- Questionnaires and variables
 - Data collection and response rates
 - Error checking
 - Imputation
 - Estimation
 - Time plan and timeliness
- Assessment of the quality of the new data series
- Follow-up on deflation
- Follow-up on seasonal adjustment
 - Indirect/direct SA
- Status on the IT application
- Transmission to Eurostat
- Conclusions and outstanding issues
 - Future development (short term and long term)

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Annex 1. Terms of Reference and agenda**Retail Trade Statistics****8th to 12th of April 2013****Terms of Reference - Activity 1.4.5.****EU Twinning Project BA 08-IB-FI-03****Institute for Statistics of Republika Srpska, Veljka Mlađenovića 12d,
Banja Luka**

- | | |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Component 1 | Business Statistics <ul style="list-style-type: none"> 1.1. Statistical Business Register 1.2. Structural Business Statistics 1.3. Construction Statistics 1.4. Retail Trade Statistics 1.5. Tourism Statistics |
| Component 2 | Household Budget Survey |
| Component 3 | Institutional Capacity <ul style="list-style-type: none"> 3.1. Long term strategy 3.2. Metadata and classification system development 3.3. Promotion of dissemination |

Benchmarks

- H. Plan for modification of existing survey on retail trade and quarterly survey on distributive trade developed by the 2nd project quarter. Achieved
- I. Detailed plan and preparation for modification of existing surveys on retail trade and distributive trade by the end of 4th project quarter. Achieved
- J. Existing surveys on retail trade and distributive trade modified by the end of 6th project quarter. Achieved
- K. Relevant results analysed and plan for regular surveys in force by the 8th project quarter (end of September 2013).
- L. Short Term Business statistics improved retail trade short term indicators harmonized with EU standards by the 8th project quarter (end of September 2013).

1.4.5. Activity

Additional mission dedicated to training in Demetra, including practical work on SA and WDA of available RT time series. Follow up on redesigned monthly RT and distributive trade surveys and improvements made between missions.

Expected activities

- Follow up by BC on the results of performed activities:
 - Presentation of current status of redesign monthly RT and quarterly distributive trade surveys
 - Analysis of main results regarding data collection process, first results of collected data for STS variables 120, response rate (unit/item response and non-response rate), recalling of reporting units, comments and suggestions on structure and content of RT and distributive trade questionnaires by reporting units, the most frequently mistakes, etc.
 - Use of new estimation method (ratio estimation)
 - Discussion about the quality of collected data
- Course in practical use of Demetra
 - Working day and Seasonal adjustment of RT and DT series
- Experiences with new estimation methods:
 - New published series
 - Challenges met by BC
 - Treatment of structural changes
- Back casting of historical series
- Presentation on development of STS -IT application on RT
- Calculation and dissemination of output data
- Status on use of CPI as deflator
- Variance estimation and other quality measures
 - Quality declaration from Danish RTI
- Structure and content of methodology documentation
- Preparation for the next mission:
 - Planning of 6th mission and topics for the next mission
 - Preparation of the list of activities to be done before the next mission

Expected output

- Mission report – summarized and detailed version completed
- Staff trained in practical use of Demetra for SA and WDA
- Results from conducted redesign surveys analyzed with proposals for further improvements of RT and DT surveys
- Agreement on methods that will be used for modified surveys on retail trade and distributive trade
- Defined homework and draft ToR for the next mission

Participants

List of participants for fifth mission through IPA 2008 Twinning project for subcomponent 1.4 Retail Trade statistics:

Agency for Statistics of BiH

Alen Bajramović, Head of Department for Services Statistics

Aida Zukanović, Junior Associate in Department for Sample design and Methodology

Adnan Gušić, Senior Advisor for Planning and Programming

Radomir Mutabdžija, Senior Associate in Department for Industry and Construction

Federal Institute of Statistics of BiH

Sanja Ambrožić, Head of Department for Services Statistics and External Trade

Dužanka Mandić, Junior Officer for Retail and Whole Trade Statistics

Arijana Amina Muhić, Head of Department for Statistical Methodologies

Republika Srpska Institute of Statistics

Jelena Glamočika, Head of Department for Services Statistics

Sanela Vasiljević, Senior Officer for Retail Trade Statistics

Radmila Lazendić, Senior Officer for Services Statistics

Darko Marinković, Senior Officer for Statistical Sample and Analysis (Demetra)

Želimir Radisić, Senior Associate for Construction and Housing Statistics (Demetra)

Tanja Mirnić, Senior Associate for transport and communication Statistics (Demetra)

Sanja Stojčević, Senior Officer for External trade Statistics (Demetra)

Miroslav Ilić, Senior Officer for Hotels and Restaurants statistics (Demetra)

Mirjana Bandur, Senior Associate for Industry Statistics (Demetra)

Jasminka Milić, Senior Officer for Producer Price Statistics (Demetra)

Experts

Soren Kuhl Andersen, Statistics Denmark

Lasse Breuning Sluth, Statistics Denmark

Twinning Project Administration

Bente Dyrberg, RTA

Djemka Sahinasic, RTA Assistant

Interpreter

Jelena Ljuboja

Agenda

Time	Event	Purpose / detail
8 April, 12:00	Follow-up by BC	<p>Overview of current status of redesign monthly RT and quarterly distributive trade surveys</p> <p>Analysis of main results regarding data collection process, first results of collected data for STS variables 120, response rate (unit/item response and non-response rate), recalling of reporting units, comments and suggestions on structure and content of RT and distributive trade questionnaires by reporting units, the most frequently mistakes, etc.</p> <p>Use of new estimation method (ratio estimation)</p> <p>Discussion about the quality of collected data</p> <p>(BC participants, IPA experts)</p>
9 April, 08:30	Course in practical use of Demetra	<p>Demetra seminar</p> <p>Working day and Seasonal adjustment of RT series</p> <p>Presentation by IPA experts</p>
10 April, 08:30-12:00	Continuation of the previous day - Demetra	Demetra seminar
13:00	Experiences with new estimation methods	Analysis of back casting of historical series and new published RT figures

		<p>Challenges met by BC</p> <p>Discussion about treatment of structural changes</p> <p>(BC participants, IPA experts)</p>
11 April, 08:30	<p>IT application</p> <p>Calculation and dissemination of output data</p> <p>Deflation</p> <p>Variance estimation and other quality measures</p> <p>Structure and content of methodology documentation</p>	<p>Presentation by BC of development of IT application on RT</p> <p>Regular compilation of results on RT and distributive trade</p> <p>Status on use of CPI as deflator (BC participants)</p> <p>Quality declaration from Danish RTI</p> <p>Example of Danish RT methodology</p> <p>Presentation by IPA experts</p>
	Preparation for the next mission	<p>Planning of 6th mission and topics for the next mission;</p> <p>Preparation of the list of activities to be done before the next mission</p> <p>(Soren Kuhl Andersen, Lasse Breuning Sluth, BC participants)</p>
12 April, 09:00-12:00	Debriefing	<p>Evaluation and approval of the Summary Mission Report</p> <p>(Soren Kuhl Andersen, Lasse Breuning Sluth, BC participants)</p>