



REPUBLIC OF KOSOVO

TECHNICAL ASSISTANCE REPORT—RESIDENTIAL PROPERTY PRICE INDEX MISSION

December 2023

This Technical Assistance report on the Republic of Kosovo was prepared by a staff team of the International Monetary Fund. It is based on the information available at the time it was completed in June 2023.

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International Monetary Fund
Washington, D.C.



TECHNICAL ASSISTANCE REPORT

REPUBLIC OF KOSOVO

Report on Residential Property Price Index
(RPPI) Mission (June 5–9, 2023)

DECEMBER 2023

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Acronyms and Abbreviations

CBK	Central Bank of Kosovo
KAS	Kosovo Agency of Statistics
MoF	Ministry of Finance
RPPI	Residential Property Price Index
TA	Technical Assistance

Summary of Mission Outcomes and Priority Recommendations

- 1. A technical assistance (TA) mission was conducted from June 5–9, 2023, to assist the Kosovo Agency of Statistics (KAS) with the initial stages of the development of a Residential Property Price Index (RPPI).** This was the first mission to Kosovo dedicated to the RPPI. The mission completed the following tasks: (i) examined all potential data sources (ii) contributed to capacity building by providing training on RPPI compilation (iii) agreed next steps for the development of the RPPI and (iv) assessed the required resources for RPPI development.
- 2. The authorities are strongly committed to developing a publicly available RPPI for Kosovo.** Reliable property price indexes and other indicators of real estate markets are essential for the assessment of developments and risks in property markets and understanding the linkages between property markets and financial soundness, as well as to IMF surveillance.
- 3. As the official compiler of the RPPI, the KAS should assign a dedicated resource to this project by end-July 2023.** The assigned individual will need to have some familiarity with statistical software packages and be open to learning new statistical techniques. Once a resource has been assigned and initial data files are received, the development of the RPPI will take approximately two years from start to finish.
- 4. The KAS should draft a workplan for the RPPI to meet the structural benchmark agreed under the recent SBA-RSF agreements between the IMF and Kosovo.** The plan should be sent to the IMF by end-September 2023. The KAS should form an RPPI Working Group to guide the development process and assist with the drafting of the workplan. The group should meet quarterly (or more frequently as required) and consist of representatives from the KAS, the Statistics Department of the Central Bank of Kosovo (CBK) and the Property Tax Division of the Ministry of Finance (MoF).
- 5. Transactions data from real estate companies should be used for the development of the RPPI.** The mission assessed the advantages and disadvantages of each available data source. These included data from administrative data sources, loan information from financial companies, listings data from websites and transactions data from real estate companies. The information from the real estate companies was determined to have the most accurate prices and the broadest coverage.
- 6. A large real estate company has agreed to provide a dataset to the KAS.** Pro Real Estate accounts for approximately 60 percent of the residential property market in Kosovo. The dataset contains the transaction price agreed between the buyer and seller (i.e., the target price for the RPPI) and details on the characteristics of the individual properties (e.g., location, size and structure). The KAS should agree on the structure of the file to be transferred from Pro Real Estate. To ensure that the data collection is sustained into the future, the KAS should sign an agreement with Pro Real Estate outlining the nature of the data sharing between the organizations.
- 7. The KAS should assess the quality of the data and its suitability for use in the compilation of the RPPI.** The mission described the practical aspects of assessing the suitability and quality of the dataset. The KAS should assess whether it needs to supplement the data with information from other real estate companies to increase the geographical coverage. Information from the Cadastral Agency, which registers all changes in property ownership, can be used to assess the coverage of the data.

8. The mission increased capacity and knowledge the KAS staff on the methods for RPPI compilation. The authorities requested that the mission provide training on all aspects of RPPI compilation. The main topics covered in the meetings included data visualization, assessing data quality, stratification, weights, sub-index calculation and aggregation to high-level indices. Staff in the KAS should continue to familiarize themselves with the methods for index calculation using the material provided during the mission. Further capacity development will be required as the work on the RPPI progresses.

9. The KAS should decide on an appropriate stratification of the data. Stratification is important for the compilation and quality adjustment of the RPPI. It also determines how the RPPI is disseminated. Some potential stratification methods were discussed during the mission. These should be fully tested when actual data is received. The KAS should calculate an experimental index using the chosen strata initially and assess the resulting sub-indices and headline index.

10. The KAS should decide on a suitable statistical software package for the development of the RPPI. The R statistical package is a common choice among countries. If required, IMF staff can support the KAS to code the new processes in R.

TABLE 1. Priority Recommendations

Target Date	Priority Recommendation	Responsible Institution
July 31, 2023	Assign a dedicated RPPI resource	KAS
July 31, 2023	Agree on the structure of the file to be transferred from Pro Real Estat	KAS
August 31, 2023	Assess the quality of the data and its suitability for use in the compilation of the RPP	KAS

Further details on the priority recommendations and the related actions/milestones can be found in the action plan under Detailed Technical Assessment and Recommendations.

Section I. Detailed Technical Assessment and Recommendations

TABLE 2. Action Plan

Priority	Action/Milestone	Target Completion Date
Topic: Institutions arrangements and resources		
M	Confirm that the KAS are responsible for compilation of the RPPI	Completed
H	Assign a dedicated RPPI resource in the KAS	Jul 31, 2023
M	Form an RPPI Working Group to guide the development process.	Jul 31, 2023
H	Draft a workplan for the RPPI and send to the IMF.	Sep 30, 2023
Topic: Data sources for the RPPI		
M	Meet with key government and private sector stakeholders	Completed
M	Use data from real estate companies for the RPPI – request a data file from Pro Real Estate	Completed
H	Agree on the structure of the file to be transferred from Pro Real Estate	Jul 31, 2023
H	Assess the quality of the data and its suitability for use in the compilation of the RPPI	Aug 31, 2023
M	Come to an agreement with the Cadastral Agency for the regular transmission of data on property transfers	Oct 31, 2023
M	Use the data from the Cadastral Agency to assess the coverage of the data from the real estate companies	Nov 30, 2023
M	Collect transactions data from additional real estate companies as required	Dec 31, 2023
Topic: Compilation methods for the RPPI		
M	Provide initial training to staff in the KAS on the compilation methods	Completed
H	Continue to increase knowledge on the methods for index calculation	Aug 31, 2023
H	Decide on a suitable statistical software package for the development of the RPPI.	Aug 31, 2023
H	Decide on an appropriate stratification of the data	Dec 31, 2023
H	Calculate an experimental index using the chosen strata	Dec 31, 2023

A. INTRODUCTION

11. A TA mission was conducted from June 5–9, 2023, to assist the KAS with the development of their Residential Property Price Index (RPPI). This was the first mission to Kosovo specifically dedicated to the RPPI. A pre-mission meeting was held on May 26, attended by officials from the KAS.

The objectives for the mission were discussed and agreed. An agenda was drafted and circulated to the relevant stakeholders, including the CBK.

12. A core team of three members of staff from the Price Statistics Division in the KAS and one representative from the Statistics Department in CBK attended the meetings each day. There was a strong commitment from all participants to develop the RPPI for Kosovo. The mission benefited greatly from the participation of the representative from CBK, who was able to arrange meetings with key stakeholders. Senior management in the KAS and the local IMF economist, based at the CBK, attended the concluding session.

13. The mission met with key government and private sector stakeholders. The main challenge for the KAS and the authorities in Kosovo is to identify and access a suitable data source. To that end, meetings took place with the Property Tax Division of the Ministry of Finance (MoF), the Notary Chamber of the Republic of Kosovo, the Cadastre Directorate of the Municipality of Pristina, and the largest real estate company in Kosovo. These meetings were invaluable to better understand the residential property market in Kosovo and the potential data sources available for the development of the RPPI.

14. A newly developed RPPI can be used for multiple purposes. As a pre-accession country to the EU, Kosovo already voluntarily sends statistical data to Eurostat (European Commission) e.g., National Accounts, Harmonized Index of Consumer Prices (HICP). The KAS can use a newly developed RPPI to meet the statistical requirements of Regulation (EU) 2016/792.¹ The indicator can also be used to meet the reporting requirements for the IMF's Financial Soundness Indicators (FSIs). From a domestic perspective, key users will include the CBK to assess financial stability and the MoF to assist with the appraisal of residential property for tax purposes. To ensure that the RPPI meets user needs, the KAS should consult with users during the compilation of the new indicator.

B. INSTITUTIONAL ARRANGEMENTS AND RESOURCES

15. In terms of the institutional arrangements, it was confirmed that the KAS will be the official compiler of the RPPI. Statistical legislation in Kosovo assigns the KAS the role of the coordinator of the official statistics and with the general responsibility for the production of official statistics. It drafts the five-year program of official statistics and the annual implementation plan. In line with other price statistics, such as the Harmonized Index of Consumer Prices (HICP) and the Producer Price Index (PPI), the KAS will take the lead role for the development of the RPPI.

16. The KAS should assign a dedicated resource to the RPPI by end-July 2023. Since a data source has already been identified (further information provided later), work can commence once an initial file has been received. It is expected that a sample file can be provided in the coming weeks. The assigned individual will need to have some familiarity with statistical software packages and be open to learning new statistical techniques. Once a resource has been assigned and data is received, the development of the RPPI will take approximately two years from start to finish. When the new statistic goes into regular production, then it makes sense from a risk perspective to have more than one person trained on the processes and methods to compile the RPPI.

¹ Regulation (EU) 2016/792 of the European Parliament and of the Council of 11 May 2016 on harmonized indices of consumer prices and the house price index, and repealing Council Regulation (EC) No 2494/95 (Text with EEA relevance).

17. The KAS should form an RPPI Working Group to guide the development process. The KAS already has similar groups for other statistical areas e.g., National Accounts. It is recommended that the group meet quarterly (or more frequently as required) and consist of representatives from the KAS, the Statistics Department of the CBK and the Property Tax Division of the MoF. The representatives should be able to support the KAS by providing relevant technical advice. The group should also be able to set and monitor project milestones, without interfering with the KAS's legal mandate to determine and develop the statistical methodology, classification and standards for producing official statistics.

18. The KAS should draft a workplan for the RPPI to meet the structural benchmark agreed under the recent SBA-RSF agreements between the IMF and Kosovo. The plan should be sent to the IMF by end-September 2023. The contents of this Technical Assistance (TA) report will be the starting point for the workplan, while the newly formed RPPI Working Group can provide advice and drafting support.

19. The mission team at IMF and staff in the KAS will continue to collaborate remotely as necessary as the authorities begin the development of the RPPI. The IMF will continue to support the KAS as the recommendations are being implemented. The IMF mission team can also advise on the drafting of the workplan for the RPPI as required.

Recommended Actions:

- The KAS to compile the RPPI for Kosovo
- The KAS to assign a dedicated resource to the RPPI
- The KAS to form an RPPI Working Group to guide the development process.
- The KAS to draft a workplan for the RPPI by end-September and send to the IMF.

C. DATA SOURCES FOR THE RPPI

20. Transactions data from real estate companies should be used for the development of the RPPI. The mission assessed the advantages and disadvantages of each available data source. These included data from administrative data sources, loan information from the financial companies, listings data from websites and transactions data from real estate companies. The data sources were assessed based on the following criteria: (i) accessibility, (ii) timeliness (iii) quality of price information (iv) availability of information on price determining characteristics (v) coverage of market transactions and (v) and availability of time series data. Mainly for reasons around the quality of the price information and the coverage of the data, it was assessed that information from real estate companies was the best data source in the short to medium term.

21. The residential property market in Kosovo has a high proportion of cash purchases. Some stakeholders estimated this to be as high as 65 percent. This may be due to a number of factors, including the significant proportion of buyers of residential property who are living abroad. These are likely members of the diaspora who are planning to return to Kosovo in the future or are purchasing for investment purposes. The high level of cash purchases means that loan information from financial institutions in Kosovo would not be a good data source for the RPPI. The data would not be representative of all market transactions; both mortgage-financed purchases and cash purchases. In contrast, the information from real estate companies captures both of these types of transactions.

22. Administrative data on property transfers in Kosovo are unsuited as source data for the compilation of the RPPI. There is a lack of acceptance among stakeholders about the accuracy of

declared prices recorded for the purposes of property registration. An RPPI, based on declared prices, would not have the trust of users. The KAS should continue to work with the Cadastral Agency (and relevant municipal Cadastral offices) to improve the quality of the administrative records. The data from the Cadastral Agency can, however, be used as a complete register of transactions to check the coverage of the data from the real estate companies. The KAS should come to an agreement with the Cadastral Agency for the regular transmission of data.

23. Real estate companies also have information on land and commercial property. While the KAS should focus initially on compiling a price index for residential property, there is also potential to expand the statistical compilation into other types of property such as land and commercial property (industrial, retail, offices).

24. A large real estate company has agreed to provide a dataset to the KAS. Pro Real Estate accounts for approximately sixty percent of the residential property market in Kosovo. The company has a larger market share in the capital Pristina than in the more rural areas outside the capital. Crucially, the dataset contains the transaction price agreed between the buyer and seller i.e., the target price for the RPPI. The dataset also contains the asking price which would allow for an analysis of the differences between asking prices and final transaction prices. In addition to price, there is information on the characteristics of the individual properties (e.g., location, size and structure) allowing for the compilation of mix adjusted price indices. Pro Real Estate are also willing to share up to three years of back data.

25. The KAS should agree on the structure of the file to be transferred from Pro Real Estate. The mission developed a specification of requirements which can be sent to Pro Real Estate. The final structure of the file can be agreed through an iterative process. To ensure that the data collection is sustained into the future, The KAS should sign an agreement with Pro Real Estate outlining the nature of the data sharing between the organizations.

26. The KAS should assess the quality of the data and its suitability for use in the compilation of the RPPI. After received a data file, the KAS should produce a graphical analysis of the price information e.g., histograms and box plots to assess price dispersion, basic analysis of median prices over time. The data quality can be assessed in terms of (i) the availability of characteristic information on the properties (ii) frequency of missing values (iii) use of defined categories for non-numerical variables (iv) frequency of duplicate values etc.

27. The KAS may need to survey more real estate companies. Initially, depending on the assessment of data quality, information from Pro Real Estate can be used to compile an experimental RPPI. However, for some regions outside Pristina, the coverage of the data may not be representative of the transactions in the residential property market. Therefore, the KAS should assess whether it needs to supplement the data with information from other regional real estate companies. This would improve the geographical coverage of the RPPI. Information from the Cadastral Agency, which registers all changes in property ownership, can be used to assess the coverage of the data from the real estate companies. It should be noted however that the transactions data on the register from the Cadastral Agency, includes both market and non-market transactions e.g., transfers between family members, inherited properties etc. These non-market transactions are outside the scope of the RPPI.

Recommended Actions:

- The KAS should use data from real estate companies for the development of the RPPI.
- The KAS should agree on the structure of the file to be transferred from Pro Real Estate
- The KAS should assess the quality of the data and its suitability for use in the compilation of the RPPI.

- The KAS should come to an agreement with the Cadastral Agency for the regular transmission of data on property transfers.
- The KAS should use the data from the Cadastral Agency to assess the coverage of the data from Pro Real Estate
- The KAS should collect transactions data from more real estate companies as required.

D. COMPILATION METHODS FOR THE RPPI

28. The mission increased capacity and knowledge of staff in the KAS on the methods for RPPI compilation. The authorities requested that the mission provide training on all aspects of RPPI compilation. Since there was no existing dataset in Kosovo that could be used for this purpose, the IMF synthetic data file was used instead.² The main topics covered in the meetings included data visualization, assessing data quality, stratification, weights, sub-index calculation and aggregation to high-level indices.

29. The technical aspects of index compilation and aggregation were presented during the mission. Information was presented on specifying the models, interpreting the results of the regressions, calculating the price indices using the time-dummy hedonic (TDH) approach and aggregating the sub-indices using annually updated weights. Staff in the KAS should continue to familiarize themselves with the methods for index calculation using the material provided during the mission.

30. The KAS should decide on a suitable statistical software package for the development of the RPPI. The R statistical package is a common choice among countries. If required, IMF staff can support the KAS to code the new processes in R.

31. The KAS should decide on an appropriate stratification of the data. Stratification is important for the compilation and quality adjustment of the RPPI; however, it also determines how the RPPI is disseminated. Depending on user needs, many countries use a combination of location and property type variables for stratification purposes. The KAS should also assess Eurostat requirements under Regulation (EU) 2016/792. Some potential stratification methods were discussed during the mission. However, these should be fully tested when actual data is received. The KAS should calculate an experimental index using the chosen strata initially and assess the resulting sub-indices and headline index.

32. It is likely that further capacity development will be required as the work on the RPPI progresses. Further missions to Kosovo can be planned as required by the authorities.

Recommended Actions:

- The KAS should continue to increase their knowledge on the methods for index calculation.
- The KAS should decide on a suitable statistical software package for the development of the RPPI.
- The KAS should decide on an appropriate stratification of the data.
- The KAS should calculate an experimental index using the chosen strata.

² The IMF Practical Guide and related synthetic dataset are described here: <https://www.imf.org/en/Data/Statistics/RPPI-guide>.

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