



Republika e Kosovës
Republika Kosova-Republic of Kosovo
Qeveria - Vlada – Government

Zyra e Kryeministrit – Ured Premijera – Office of the Prime Minister

Agjencia e Statistikave të Kosovës - Agencija za Statistike Kosova - Kosovo Agency of Statistics



AGJENCIA E STATISTIKAVE TË KOSOVËS
AGENCIJA ZA STATISTIKE KOSOVA
KOSOVO AGENCY OF STATISTICS

Residential Property Price Index (RPPI)

(Summary of findings and road map)

Pristina, September, 2023

This report regarding the RPPI roadmap was prepared by:

Ibish Asllani - Head of the Price Statistics Division, KAS

Arlinda Mataj - Senior official on the Price Statistics Division, KAS

Shqipe Hajredini - Senior Statistician, Department of Statistics, CBK

Gëzim Ahmeti consultant for the RPPI on the Price Statistics Division, KAS

Guxim Neziri - IT Officer for Economic Statistics, Department of Economic Statistics, KAS

Table of Contents

	Page
List of Acronyms and Abbreviations	3
I. INTRODUCTION	4
The importance and benefits of building the Residential Property Price Indices	4
As Deflator in National Accounts (NA).....	5
Other benefits for stakeholders	5
II. Methodology.....	5
Identifying data sources	6
Assessing source data quality	6
Administrative sources.....	6
Table 1. Available variables.....	7
Table 2. Number of transactions by cadastral areas (annually)	8
Table 3. Percentage of transactions by cadastral areas.....	8
Table 4. Number of transactions by cadastral areas (quarterly).....	8
Table 5. Percentage of transactions by cadastral areas (quarterly).....	9
Other data sources.....	10
III. Data collection methods	11
IV. Stages of the work process	11
V. Working group.....	12
VI. Road Map for RPPI.....	13
VII. Conclusion	15
APPENDIX	16
Table 1. Data Structure.....	16
Table 2. Data Structure proposed by IMF TA Expert – Variables to include	16
Table 3. Number of transactions by cadastral areas for the variable – Type of property	17

List of Acronyms and Abbreviations

CBRK	Central Bank of the Republic of Kosovo
EU.....	European Union
EUROSTAT....	Statistical Office of the European Union
IMF.....	International Monetary Fund
KAS	Kosovo Agency of Statistics
KCA.....	Kosovo Cadastral Agency
MFLT	Ministry of Finance, Labor and Transfers
OECD.....	Organization for Economic Cooperation and Development
RPPI	Residential Property Price Index
TA.....	Technical Assistance

R- is application for statistical computing and graphing (instant for everyone).

I. INTRODUCTION

Intension of this summary of findings is to analyze the initial steps in constructing a residential property price index, including the identification of potential sources, the quality, availability of the necessary variables and how to proceed with data collection and processing.

The purpose of this index is to research and analyze price changes in the residential property market, providing valuable insights for investors, developers and policy makers.

Housing prices have an important role in the valuation of house and apartment properties. Changes in housing prices also affect the decision to build new homes (supply) as well as the decision to become a home owner (demand).

Investors turn to house price indices to not only measure wealth but also to help in assessing current and future rates of return.

From a broader perspective, analysts, policymakers, and financial institutions track trends in house prices to broaden their understanding of real estate and credit, market conditions, and to monitor the impact on economic activity, stability, and financial sustainability.

For example, these data can be used by financial institutions for the purpose of lending to the private sector. Central banks often rely on movements in house price indices to monitor households' borrowing capacity and debt burden and their effects on aggregate consumption.

The importance and benefits of building the Residential Property Price Indices

The purpose of the Residential Property Price Indices (RPPIs) is to provide market participants with accurate and up-to-date information on residential property prices by providing a complete and accurate representation of market price movements.

The formation of this Index (RPPI) will help various stakeholders including home buyers, sellers, investors and policy makers in making rational decisions. By collaborating on this project, we aim to increase market transparency, facilitate informed decision-making and promote a more efficient and competitive commercial property sector.

Monitoring the development of housing prices is considered important, especially in times of economic turbulence. Hence, house prices play an important role in measuring the affordability of home ownership, a key objective of housing policy in some countries. House price changes also affect the decision to build new houses/dwellings (from the supply side) as well as the decision to become a home/dwelling owner (from the demand side).

Investors turn to residential property price indices not only to measure wealth, but also to help estimate current and future rates of return on investments.

As Deflator in National Accounts (NA)

National Statistical Agencies use housing price indices in at least two ways. First, the structural component of a price index for newly built houses is often used to discount current housebuilding price values in the national accounts.

Second, property price indices can be included in the construction of the HICP, depending on the choice of its conceptual basis.

Other benefits for stakeholders

Improved market analysis: The index will enable stakeholders to analyze market trends, identify investment opportunities and evaluate the performance of residential properties more effectively.

Benchmarking: The index will serve as a reference point for comparing property prices in different countries, property types and time periods, allowing interested parties to make informed comparisons and assessments.

Risk assessment: The index will provide valuable insight into the stability and volatility of commercial property prices, enabling stakeholders to assess and manage the risks associated with their investments.

II. Methodology

This index will be based on international compilation standards such as the methodological guidelines established by Eurostat (*Handbook on Residential Property Prices Indices* (RPPIs – European Commission) and IMF Residential Property Price Index (RPPI) *Practical Compilation Guide*, *International Monetary Fund*, 2019).

Identifying data sources

In order to compile the index, as well as in-depth understanding of the real estate transaction process within our country, potential sources of data have been researched and studied.

Initially, the administrative sources listed below were looked at:

1. The register of houses and dwellings within the Cadastral Agency of Kosovo (KCA),
2. The Credit Register within the Central Bank of Kosovo (CBK),
3. Department of Property Taxes in the Ministry of Finance, Labor and Transfers (MFLT),
4. Chamber of Notaries of Kosovo,
5. Data from the Population, Households, and Dwellings Census.
6. Municipality of Prishtina - Finance Directorate and Cadaster Directorate.

Also, possible non-administrative sources such as: Real Estate Agencies and Construction Companies have been researched.

Assessing source data quality

The IMF has provided technical assistance (TA) to KAS for the construction of the residential property price indices (RPPIs). The first technical assistance mission (TA) was conducted from June 5 to 9, 2023. Among other goals, it was the identification and evaluation of data sources.

During the mission, methodological training was conducted by the expert for compiling RPPI (samples and methods of calculation), identification of data sources and the plan for compilation. The KAS and CBK staff have coordinated and staged meetings with the respective counterparts that can be involved in the preparation of the RPPI. During the mission, as well as during the following months, meetings were held with institutions potentially assessed as a source of data for the production of this index, presented as follows:

Administrative sources

The Kosovo Cadastral Agency is the central authority for the maintenance of the cadastral database, for the maintenance of property registers, for cartography and GIS, for the unified address system, for the national spatial information infrastructure and for the administration of the Information Technology Infrastructure (IT) respectively the first and second data center. For the purpose of cooperation, a meeting was held to discuss the possibility of providing data from the KCA database with the necessary variables for building the index. At the meeting, we were informed that at this stage KCA does not have sufficient coverage of

residential units, especially in the cadastral area of Prishtina, where a significant number of residential buildings do not have technical approval.

In terms of coverage, the file was studied where Tables 2 to 5 contain a summary of the number and percentage of transactions carried out by cadastral areas, with annual and quarterly data. It has resulted that the percentage of transactions carried out in Pristina from 25 percent in 2022 has increased to 42 percent for the 1st and 2nd quarter of 2023 of the total transactions carried out throughout Kosovo.

According to the RPPI Practical Compilation Guide (IMF 2019)¹ the required primary variables have been compared with that possessed by CAK and the real estate agency Pro Real Estate.

Table 1. Available variables

Variables as by IMF RPPI Compilation Guide	Kosovo Cadaster Agency	Pro Real Estate	Comments
Id	✓	X	
Year	✓	✓	
Month	✓	✓	
Dwelling Type	✓	✓ ^x	Majority of transactions do not possess this information.
Price	✓	✓	
Floor_Area	✓	✓	
Neighborhood_Affluence	✓	X	
Year_Built	✓	X	
Region	✓	✓	
Neighborhood_Type	✓	X	
Building_Levels	✓ ^x	✓ ^x	Majority of transactions do not possess this information.
Central_Heating	X	X	
Vintage (New/Existing)	X	X	
Property Type	✓	✓	

✓ - available data; X – not available data; ✓^x - partial available data

¹ Refer to Table 1. Data Structure in the appendix.

Table 2. Number of transactions by cadastral areas (annually)

Region	2019	2020	2021	2022	Q1 and Q2
FERIZAJ	472	428	725	538	31
GJAKOVË	209	499	585	407	99
GJILAN	546	529	739	61	6
MITROVICË	460	772	639	424	136
PEJË	674	94	338	689	52
PRISHTINË	1733	1109	2329	1347	461
PRIZREN	256	224	586	272	160
*Prishtina Municipality	746	152	620	1229	683
Total	5096	3807	6561	4967	1628

*Pristina Municipality has been taken out of the Prishtina region and presented separately due to its importance and impact of weight in the total real estate market of Kosovo.

Table 3. Percentage of transactions by cadastral areas

Region	2019	2020	2021	2022	Q1 and Q2
FERIZAJ	9.26	11.24	11.05	10.83	1.90
GJAKOVË	4.10	13.11	8.92	8.19	6.08
GJILAN	10.71	13.90	11.26	1.23	0.37
MITROVICË	9.03	20.28	9.74	8.54	8.35
PEJË	13.23	2.47	5.15	13.87	3.19
PRISHTINË	34.01	29.13	35.50	27.12	28.32
PRIZREN	5.02	5.88	8.93	5.48	9.83
*Prishtina Municipality	14.64	3.99	9.45	24.74	41.95
%	100	100	100	100	100

Table 4. Number of transactions by cadastral areas (quarterly)

Regionet	Q1-2022	Q2-2022	Q3-2022	Q4-2022	Q1-2023	Q2-2023
FERIZAJ	258	145	65	58	20	6
GJAKOVË	8	147	126	126	50	47
GJILAN	46	4	6	5	1	1
MITROVICË	93	168	110	53	56	69
PEJË	73	309	187	120	8	20
PRISHTINË	766	222	67	280	347	12
PRIZREN	117	43	59	53	14	143
*Prishtina Municipality	142	259	590	238	249	431
Grand Total	1503	1297	1210	933	745	729

Table 5. Percentage of transactions by cadastral areas (quarterly)

Regjionet	Q1-2022	Q2-2022	Q3-2022	Q4-2022	Q1-2023	Q2-2023
FERIZAJ	17.17	11.18	5.37	6.22	2.68	0.82
GJAKOVË	0.53	11.33	10.41	13.50	6.71	6.45
GJILAN	3.06	0.31	0.50	0.54	0.13	0.14
MITROVICË	6.19	12.95	9.09	5.68	7.52	9.47
PEJË	4.86	23.82	15.45	12.86	1.07	2.74
PRISHTINË	50.96	17.12	5.54	30.01	46.58	1.65
PRIZREN	7.78	3.32	4.88	5.68	1.88	19.62
*Prishtina Municipality	9.45	19.97	48.76	25.51	33.42	59.12
%	100	100	100	100	100	100

In the framework of analyzing the quality of the database obtained by CAK, the variable "Transaction" turned out to be of poor quality. This is because it has been observed that a large number of transactions have identical repeated values while the city remains the same, data for variables such as: "Cadastral unit", "Surface", "Number of floors", etc., (meaning that different flats have been sold with the same value regardless different size floor units).

Hence, there has been a doubt on the quality of transaction having into consideration that there has been an overall acceptance among stakeholders about the accuracy of declared prices recorded for the purposes of property registration. But after having analyzed KCA data there has been an improvement in data quality, so KAS should continue to work with the Cadastral Agency of Kosovo (and relevant municipal Cadastral offices) to further improve the quality of the administrative records. However, KCA data can be used as a register of transactions and efforts will be made to link data from KCA with data from real estate companies.

KAS should come to an agreement with the Cadastral Agency of Kosovo for the regular transmission of data.

The KAS team express the readiness to collaborate with the KCA to develop a standardized methodology for data collection, analysis and reporting. This will include defining variables, data quality controls and reporting formats to ensure consistency and comparability. Hence, KSA suggests starting with a pilot phase to test data collection mechanisms and reporting of results and findings. This will allow us to gather professional information, address any challenges and update the methodology to improve the accuracy and reliability of the index.

Central Bank of the Republic of Kosovo has under its management the Credit Registry system (CR), which functions as an internet-based application and aims to collect and distribute positive and negative information of natural and legal persons, with the aim of improving the assessment process of credit clients, as well as the realization of the CBK's supervisory function. All loan providers are obliged to report to CR system, all loan applications and loans issued to their customers in accordance with the terms of the relevant instruction issued by CBK.

Having into consideration above information CR system does not possess the transactional information necessary for the compilation of the RPPI index as it only possesses the database on loans and mortgage values.

Department of Property Taxes in the Ministry of Finance main objectives are to carries out annual inspections to ensure that municipal property tax is administered in accordance with the law, and that municipalities remain certified to collect taxes. It analyses sales contracts, assesses and collects data in order to assist municipalities in efficient administration of property tax and supports Municipalities by monitoring the property tax administration. Hence, it enters rates and prices into system, annually data taken by KCA.

Notary Chamber of the Republic of Kosovo main responsibility is to advocate for notaries offices. During the official meeting KAS was informed that notary offices is not obliged by law to keep electronic database for sales contracts. Hence, another disadvantage is that sales contract is valid only when a property does have certificate on real estate right. According to the information received from the meetings with the relevant institutions such as the Chamber of Notaries, the Cadastral Directorate and the Finance Directorate of the Municipality of Prishtina, it was stated that a significant part of the housing units (mainly in Prishtina) do not possess this certificate. Therefore, this administrative source for the time being is not very suitable for use .

Municipality of Prishtina - Finance Directorate and Cadaster Directorate do not have the full register of property units because consider number of properties do not possess certificate on real estate right. Also, they report to KCA from where we have received data.

Other data sources

Potential other sources have been considered real estate companies (i.e. construction companies and intermediate real estate agencies). After meetings with real estate intermediate agencies and receiving some file data we found out that property ID is missing, transaction value is not fulfilled in some (cases due to confidentiality).

As a conclusion can be said that administrative data on property transfers in Kosovo, specifically KCA data are currently a little more suitable source data for the compilation of RPPI in combination with real estate agencies.

III. Data collection methods

The planned geographic areas that would be included in the selection of the experimental sample will be mainly the regions with the highest population numbers.

The categories of residential properties that will be included in the sample are: apartments and residential houses.

RPPI weights are derived from the total stratified transaction values. The weights are calculated from the structure derived from the total value of the sales and purchases transactions.

Data files will initially be accepted in Excel format. The application: R will be used for data processing and disaggregation.

Based on the theory, the more detailed the stratification, the more the index represents the changes in the characteristics of the properties selected from the sample. However, in reality increasing the number of stratifications reduces the average number of price observations for the stratification and can actually quickly lead to an empty stratification. KAS is making efforts to secure and build the list of residential properties with data of sales and purchases (transactions) to create a comprehensive database.

IV. Stages of the work process

The process of determining data sample, is presented below

-
- Determination of data target for RPPI
 - Data collection of residential property transactions according to geographic coverage
 - The model of indicators for RPPI is defined;
 - To analyze the data received from the above sources and for a suitable comparative stratification of the data
 - Calculation of an experimental index using selected layers
 - To determine the further deadlines for assistance from the IMF for the technical aspects of the RPPI methods calculation.
 - Based on the availability of the sample, decide on the frequency of compiling the index
 - Publication of the RPPI index
-

The quality and accuracy of the final results will be checked and the data will be presented in tabular and graphical format, also additional explanations for the methodology used will be available to users.

V. Working group

The Working Group² contains the composition presented as follow:

1. Arlinda Mataj - Senior official for the Purchasing Power Parity (PPP) component, Department of Economic Statistics, KAS, Chairperson.
2. Ibish Asllani - Head of the price statistics division, Department of Economic Statistics, KAS, Member.
3. Guxim Neziri - IT Officer for Economic Statistics, Department of Economic Statistics, KAS, Member.
4. Shqipe Hajredini - Senior Statistician, Department of Statistics, CBK, Member.
5. Dashuriqe Kuqi - Head of Real Estate Appraisal Sector, Property Tax Department, MFLT, Member.
6. Valbone Dema - Tax Inspector, Property Tax Department, MFLT, Member.
7. Leonora Sylejmani - Cadastral expert, Kosovo Cadastral Agency, MESPI, Member.
8. Gëzim Ahmeti - Consultant for the Residential Property Price Index (RPPI), Price Statistics Division, KAS, Member.



VI. Road Map for Residential Property Price Index

Activity	Actors	Target Date	Achieved Date	Outstanding actions
Confirm that KAS are responsible for compilation of the RPPI	IMF	05-09 June 23	05-09 June 23	Completed IMF mission was conducted to KAS.
Assign a dedicated RPPI resource in KAS	KAS	31-Jul-23	01-Sep-23	Completed Consultant has been hired.
Form an RPPI Working Group to guide the development process.	RPPI group	31-July-23	16-Aug-23	Completed
Draft a workplan for the RPPI and send to the IMF.	RPPI group	30-Sep-23	30-Sep-23	Completed
Topic: Data sources for the RPPI				
Meet with key government and private sector stakeholders	RPPI group	Completed	Completed	Completed
Use data from real estate companies for the RPPI – request a data file from Pro Real Estate	RPPI group	Completed	Completed	Completed One data set from the Pro Real Estate have been received.
Agree the structure of the file to be transferred from Pro Real Estate	RPPI group	31-Jul-23	07-Sep-23	Completed
Assess the quality of the data and its suitability for use in the compilation of the RPPI	RPPI group	31-Aug-23	07-Sep-23	Ongoing action
Come to an agreement with the Cadastral Agency for the regular transmission of data on property transfers	RPPI group	31-Oct-23	08-Sep-23	Completed
Use the data from the Cadastral Agency to assess the coverage of the data from the real estate companies	RPPI group	30-Nov-23	30-Nov-23	Ongoing process.
Collect transactions data from additional real estate companies as required	RPPI group	31-Dec-23	31-Dec-23	Planned Activity
Topic: Compilation methods for the RPPI				
Provide initial training to group in KAS on the compilation methods	RPPI group	Completed	Completed	Some initial training has been provided during June IMF mission.
Continue to increase knowledge on the methods for index calculation	RPPI group	31-Aug-23	On going	Continuity Additional training is needed.

Decide on a suitable statistical software package for the development of the RPPI.	RPPI group	31-Aug-23	31-Aug-23	Completed (R)
Decide on an appropriate stratification of the data	RPPI group	31-Dec-23	31-Dec-23	Planned Activity Evaluation and review of RPPI price data.
Request further IMF assistance on the technical aspects of RPPI methods	IMF, KAS (RPPI group)	31-Dec-23	31-Dec-23/ January 2024	Planet activity Request technical expert support - IMF mission until the RPPI has been compiled.
Calculate an experimental index using the chosen strata ((weights and indices -if are available data(quarterly price data))	IMF, KAS (RPPI group)	31-Dec-23	31-Dec-23/ January 2024	Planet activity Request technical expert support - IMF mission until the RPPI has been compiled.
Calculate experimental Indices	IMF, KAS (RPPI group)	31-Dec-23	31-Dec-23/ January 2024	Planned 31 March 2024 (reference year 23)
Planet regular producing quarterly data				
Budget planned :		x	x	x
Additional :				Due to the Population Census to be held during November/December 23, all activities for December 23 will be postponed to April/May 2024.

VII. Conclusion

During the period from June to September 23, KAS in cooperation with CBK has identified resources for the compilation of RPPI. Meetings with the relevant institutions were held in order to see data availability and possibility for obtaining the data. Some of the files already have been received. Hence, the received data has been analyzed and some of the findings have been presented in the report as above.

Initial finding indicates that there is not a unified system therefore not convenient for usage. KCA should improve the residential property registry data system and add the necessary variables to a more complete information system especially for the needs of the Residential Property Price Index.

Initial gauges are not enough promising to compile RPPI, however KAS is committed to build an experimental index using available data, with intention to make continuous progress in the future.

The national authorities will assess the situation for the creation of the unique system of statistics for the compilation of the RPPI.

Despite the maximum dedication to prepare the road map, the working group considered that the time frame for the initial phase was too short. However, the KAS and CBK team was fully committed to meeting this deadline and delivering a comprehensive report outlining the progress made, challenges encountered and the roadmap for the next stages.

KAS will follow trends and ongoing developments in the residential property market to ensure that the RPPI index has continuity, is reliable and comparable.

We greatly appreciate the contribution of the collaborators in this project:

International Monetary Fund;

Central Bank of the Republic of Kosovo;

Ministry of Finance, Labor and Transfers – Property Tax Department

Kosovo Cadastral Agency

Notary Chamber of the Republic of Kosovo

Municipality of Prishtina – Directorate of Finances and Directorate of Property

KAS also thanks Pro Real Estate Agency for close cooperation and support.

APPENDIX

Table 1. Data Structure

Data structure	Description	Type
Period	Month, quarter, and year	Categorical
Id	Unique identifier of the dwelling	Numerical
Year	Year	Categorical
Month	Month	Categorical
Dwelling_Type	Type of property	Qualitative/Categorical
Price	Registered price of the dwelling	Numerical
Floor Area	Total floor square meters (including common areas)	Numerical
Neighborhood_Affluence	<i>See text just below this table*</i>	Numerical
Year Built	Interval within the dwelling was built	Categorical
BER	Building Energy Rating	Categorical
County	County where the dwelling is located	Qualitative/Categorical
Region	Region where the dwelling is located	Qualitative/Categorical
Status	New/Existing	Categorical
Central_Heating	Heating system existing in the dwelling	Qualitative/Categorical
Neighborhood_Type	Rural / Urban	Categorical
Building_Levels	Number of story's in the dwelling	Categorical

Table 2. Data Structure proposed by IMF TA Expert – Variables to include

Property ID
Date variable - date of initial listing of the property
Date variable - date of sale of property
Price variable - Selling price at time of initial listing
Price variable - final transaction price agreed between the buyer and seller
Title deeds – available / not available
Type of property - residential, commercial, land etc.
Type of property – apartment, terraced, semi-detached house, fully detached house etc
Type of property - new / second-hand property
Location – micro location – land parcel
Location – GPS coordinates
Location – neighborhood / town / village
Location – municipality
Location – region

Location – urban / rural
Location – proximity to schools / retail units / public transport etc.
Size – square meters of the structure
Size – square meters of the plot of land (if land attached to property)
Size – number of rooms
Size – number of bedrooms
Size – number of bathrooms
Structure – year of construction
Structure – main construction material e.g. brick, wood etc
Structure – orientation e.g. west, east etc
Structure – number of floors (if house)
Structure – floor in building (if apartment)
Structure – total number of floors in building (if apartment)
Structure – balcony as part of property
Structure – parking available
Structure – type of heating e.g. wood, electricity, gas, oil, coal etc.
Structure – air conditioning available
Buyer – country of buyer e.g. Kosovo, Montenegro, Macedonia etc.
Buyer – profession of buyer

Table 3. Number of transactions by cadastral areas for the variable – Type of property

	FERIZAJ	GJAKOVË	GJILAN	MITROVICË	PEJË	PRISHTINË	PRIZREN	*Prishtina Municipality
Type of property								
Duplex apartment	-	2	5	-	-	-	-	-
Residential & business	157	166	113	243	119	985	57	914
Collective Housing	-	-	-	-	-	27	-	-
Residential	1999	1608	752	2184	1719	5931	1415	2474
Basement	20	20	-	4	9	35	9	5
Penthouse	-	-	3	-	-	-	-	-
Public services	6	3	8	-	-	1	17	-
Total	2182	1799	1881	2431	1847	6979	1498	3393

