

SUMMARY OF MISSION OUTCOMES AND PRIORITY RECOMMENDATIONS

1. **The purpose of the mission was to assist the National Statistics Office (GeoStat) in progressing on the compilation of a residential property price index (RPPI).** This price statistics mission to Georgia was conducted under the auspices of the three-year project to improve national accounts and price statistics in Eastern and Southeastern Europe. This project is funded by the Government of The Netherlands. The current mission focused on finalizing the work for launching the index from 2021.
2. **The second phase of the G-20 Data Gaps Initiative and guidance on financial soundness indicators identify RPPI as a critical ingredient of financial stability policy analysis and macroprudential measures.** In addition, an RPPI is on its own a macro-economic indicator of growth and a key indicator for understanding financial market conditions.
3. **The workplan agreed during the previous mission has been implemented by GeoStat.** The file management system proposed was put in place; data from the two websites is being collected; and the experimental compilation with the three hedonic methods is done on a quarterly basis.
4. **GeoStat is aiming at compiling a quarterly RPPI covering new flats and new detached houses for the capital city, Tbilisi.** GeoStat is obtaining data on residential dwellings announcements, by web scraping, from the two main websites in Georgia. Data from the National Agency of Public Registry of Ministry of Justice (NAPR) continues being transmitted regularly nonetheless with few variables. The workshop held in Batumi during February built grounds for cooperation among the institutions but a firm commitment at top management level is still a key institutional tool to proceed with the improvement of this administrative data source.
5. **GeoStat plans to undertake the first release of the RPPI on April 25, 2021 (three weeks after end of period).** The mission recommended the publication of a technical note and metadata with the first release.
6. **The mission discussed and recommended the compilation and publication of other real estate indicators.** Indicators such as the average price per square meter and per district, and its rate of change, real RPPI deflated with the CPI, RPPI deflated with the USD exchange rate, number of transactions and its rate of change using the NARP data, can be easily compiled.
7. **In the future, GeoStat will progress in the improvement of the current RPPI by expanding the coverage to existing dwellings and country coverage, in addition to the inclusion of data from the second website.**

8. The mission also addressed the development of the foreseen modernization of the CPI namely on the use of scanner data and web scraping. The mission recommended to continue the work to implement automatic data transmission.

9. To support progress in the above work areas, the mission recommended a detailed one-year action plan with the following priority recommendations carrying particular weight to make headway in improving the RPPI.

Table 1. Priority Recommendations

Target Date	Priority Recommendation	Responsible Institutions
March 2021	Firm written commitment (Memorandum of Understanding) at top management level to improve data collection from NARP.	GeoStat and NAPR
April 2021	Publish a technical note and metadata with the first release.	GeoStat
April 2021	Compile and publish other real estate indicators.	GeoStat

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

DETAILED TECHNICAL ASSESSMENT AND RECOMMENDATIONS

Priority	Action/Milestone	Target Completion Date
Outcome: RPPI is published		
H	Assess the relevance of the new variables and consider dropping the non-relevant.	January 2021
M	Firm written commitment (<i>Memorandum of Understanding</i>) at top management level to improve data collection from NARP.	March 2021
H	Release the index compiled only with data from the first website.	April 2021
H	Continue web scraping data from the second website.	Continuous
H	Publish a technical note and metadata with the first release.	April 2021
M	Compile and publication of other indicators real estate indicators.	April 2021
L	Compile the index with data from two websites from 2022.	April 2022
L	Expand the coverage to existing dwellings.	April 2022
L	Expand the coverage to country wide.	April 2023
L	Continue the work to implement automatic scanner data transmission.	

A. Residential Property Price Index

11. This is the fifth price statistics mission to GeoStat. The aim of the first mission, held during April 25–May 4, 2018 was to assist GeoStat in obtaining data for RPPI compilation. The second mission held during December 2018 focused on the assessment of the data obtained and training GeoStat staff on the RPPI compilation. During the third mission, experimental RPPI were compiled and new data sources were assessed. The fourth mission focused on developing the coverage of the producer price index.

12. The workplan agreed during the previous mission has been implemented by GeoStat. The file management system proposed was put in place; data from the two websites is being collected; and the experimental compilation with the three hedonic methods is done on a quarterly basis.

13. GeoStat is obtaining data on residential dwellings announcements, by web scraping, from the two main websites in the Georgia. Data are retrieved for all types of dwellings covering the all country. However, the compilation will begin by including only new dwellings in the capital city (Tbilisi).

14. For one of the websites, data was collected since 4Q2018. Since 3Q2019, these data include seven more variables. The tests made by GeoStat show an improvement of the results for

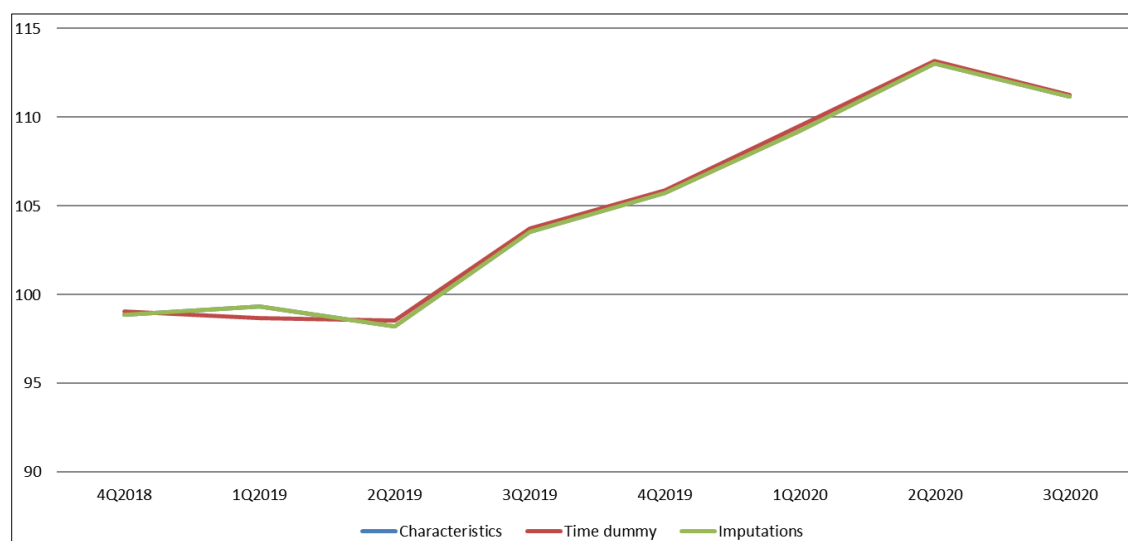
all sub-indices, but some variables do not have an impact on the results. The relevance of the new variables should be assessed and consider dropping the non-relevant.

15. For a second website, collection began in the 4Q2019. Some data issues were encountered, and the structure of the website changed demanding an adaptation of the web scraping code. Due to the current pandemic, there was an urge to relocate human resources to respond to the new challenges and there was no availability to work on retrieving data from the new website until the 4Q2020.

16. Data from the NAPR continues being transmitted regularly nonetheless with few variables. The few available variables in the data are not enough for the index calculation. The mission assessed its usability for the weights compilation and concluded that, because distinguishing between new and existing dwellings cannot be made, the data cannot be used for the purpose. The workshop held in Batumi during February built grounds for cooperation among the institutions, but a firm written compromise, such as a Memorandum of Understanding at top management level is still a key institutional tool to proceed with the improvement of this administrative data source.

17. The mission revised the codes being used by GeoStat to implement the improvements made to the final version of the RPPI practical compilation guide. The resulting indices can be seen in Figure 1. The three indices follow the same trend and, as expected, the characteristics and the imputations hedonic methods give exactly the same results.

Figure 1. Overall RPPI by Methods



18. GeoStat plans to undertake the first release of the RPPI on April 25, 2021 (3 weeks after end of period). The release the index should be compiled only with data from the first website and starting from 2020, since data collected before has less quality. The second website should be excluded during 2021 since it does not cover the full year of 2020 which will be used

to compile the weights. Nevertheless, data from the second website should continue being scraped to be added in the index compilation starting from 2022. In addition, it will help in mitigating the risk of depending from only one data source.

19. The publication of a technical note and metadata should be published with the first release. The template that had already been made available to GeoStat during the Batumi workshop was revised and prepared for the publication. The technical note should refer to the other real estate indicators discussed during the mission

20. GeoStat is willing to add a more detailed and comprehensive *Sources and Methods Document*. The mission provided some guidelines and documents to support this work, namely sharing some background on the overall worldwide status of this indicator, historical developments, uses and relevance of the indicator, and the links with economic growth and monetary policy and financial regulations. Also, further explanation of the different methods available and the reasons for selecting the characteristics hedonic method should be addressed, showing the results obtained for the other methods during the experimental phase and finally presenting the plans for the future development.

21. The mission discussed the compilation and publication of other indicators real estate indicators. Indicators as the average price per square meter and per district, and its rate of change, real RPPI deflated with the CPI, RPPI deflated with the USD exchange rate, number of transactions and its rate of change using the NARP data, can easily be compiled and published. GeoStat will analyze the results and select some of the mentioned indicators to publish together with the index. The publication should also include a visualization comparing the trend of the RPPI with the same for the CPI. For this purpose, CPI must be re-referenced to the same period as the RPPI.

22. In the future, GeoStat will progress in the improvement of the current RPPI by expanding the coverage to existing dwellings and country coverage, in addition to the inclusion of data from the second website.

23. From 2022, the index will be compiled with data from two websites. Two options are available: merge the data and compile one index with all data; or compile one sub-index per website. The second solution is preferable since it is difficult to identify duplicated records among the two data sets. The website sub-indices should be aggregated with a Laspeyres type index. The data source for the weights at this level can be the turnover reported for this activity. The mission investigated the availability of these data and concluded that since the economic activity registered is advertising, the enterprises report the turnover for advertising dwellings together with the turnover of advertising other products like secondhand cars. In consequence, weights should be obtained from one-year data of the advertised prices.

Recommended Actions:

- Assess the relevance of the new variables and consider dropping the non-relevant.

- Establish a firm compromise at top management level to improve data collection from NARP.
- Release the index compiled only with data from the first website.
- Continue web scraping data from the second website.
- Publish a technical note and metadata with the first release.
- Compile and publish of other indicators real estate indicators.
- Compile the index with data from two websites from 2022.
- Expand the coverage to existing dwellings
- Expand the coverage to country wide.

B. Modernization of the CPI

24. The mission also addressed the development of the foreseen modernization of the CPI namely on the use of scanner data. Scanner data was obtained since April from two retailers, covering the first 10 days of each month. The mapping of the GTINs to the COICOP is in progress showing promising results. Only around 500 new codes per month are received for manually mapping, which is made easier since the retailers also provide their own classification.

25. The work to implement automatic data transmission should proceed. GeoStat experimented some reluctance from the retailers for the automatic transmission. To overcome this issue, the mission recommended to prepare some results to share with providers in order to improve their engagement in the project and their understanding of the need to guarantee timely data transmission.

26. Web scrapping and the use of hedonic methods is also being explored to improve the sub-index of secondhand cars. The mission highlighted the key variables that influence the price of a second hand car that must be used in the regression namely, the vintage and the kilometrage, and the general condition of the vehicle, in addition the variables that specify the variety, such as make and model, horsepower and consumption.

Recommended Action:

- Continue the work to implement automatic data transmission.

C. Officials Met During the Mission

Name	Institution
Giorgi Tetrauli	Head of Price Statistics Department, GeoStat