stats sa

Department:
Statistics South Africa
REPUBLIC OF SOUTH AFRICA

Private Bag X44, Pretoria, 0001, South Africa, ISIbalo House, Koch Street, Salvokop, Pretoria, 0002
www.statssa.gov.za, info@statssa.gov.za, Tel +27 12 310 8911

DISCUSSION DOCUMENT
D0160

Residential Property Price Index

November 2022

Embargoed until:
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This discussion document provides experimental statistics on residential property price indices from January 2017 up to November 2022. Time series data are available from January 2010. These are not official statistics; rather, the aim of the document is to invite comment regarding its content, layout, and the provision of data. Subsequent to stakeholder interaction and feedback, an official statistical release will be developed and published.

CONTENTS

INTRODUCTION

Statistics South Africa (Stats SA) has developed a residential property price index (RPPI) in partnership with the South African Reserve Bank (SARB) and with the support of the International Monetary Fund (IMF). The data are released in the form of experimental statistics for the purposes of stakeholder evaluation and feedback. The RPPI is compiled according to internationally accepted methods.

The RPPI aims to measure the changes in the price of new and existing residential properties purchased by households. Only market prices are considered which include the price of the land on which residential buildings are located.

Records of property transactions registered with the Office of the Chief Registrar of Deeds (Deeds office) are the source data for the index. The Deeds office data is an administrative record of all property transactions in South Africa. Among other variables, it includes information about the price, size and type of the property and the type of buyer and seller. On average, there is a four month lag between the time a transaction is completed and the time it is recorded by the Deeds office. As a result the RPPI is published five months after the reference month.

The RPPI excludes out of scope transactions and includes transactions where the buyer is an individual, and the seller is an individual, company, estate, foundation or body corporate. Only free standing houses or sectional title properties (e.g. flats, townhouses or other houses in a gated complex) are included. Price and size are used as initial cut offs to remove abnormal transactions and further outliers are identified and removed using statistical techniques.

A rolling window time dummy hedonic regression model has been developed to compute the index. The model includes the data of 12 months (the window), with time dummies included for each month. The 12-month window has the advantage of keeping the coefficients relatively up-to-date and so takes account of changes in price determinants as market conditions change. The model controls for location, type of property (free standing or sectional title) and the size of the property. Suburbs within each municipality provide the location variable. The model includes an interaction term between size and type of dwelling.

Price indices are derived from the estimated coefficients on the time dummies. Each month the model is moved forward one period and re-estimated. The overall price index is constructed by chaining together the price indices from these rolling windows and applying a smoothing algorithm (a Henderson filter).

Aggregated indices for each year are weighted according to the total sales value of two years prior. For example, the results for 2022 are weighted based on the sales value of 2020. Weights will be updated annually with effect from the January RPPI each year.

The Deeds office data is continuously updated and therefore Stats SA allows for revisions of the indices. The RPPIs for the latest 12 months will be considered preliminary in alignment with the 12-month rolling window period of the regression model.

Further information can be found in the:
- RPPI sources and methods document – https://www.statssa.gov.za/?page_id=2528; and
- first RPPI discussion document – https://www.statssa.gov.za/?page_id=1854&PPN=D0160.

Stats SA welcomes feedback on this discussion document. Comments should be directed to:

Matlhatsi Mogalanyane, Matlhatsir@statssa.gov.za, (012) 310 4723

Patrick Kelly, Patrickke@statssa.gov.za, (012) 310 8290

KEY FINDINGS AS AT NOVEMBER 2022

Annual national residential property price inflation was 5,8% in November 2022, unchanged from October 2022. The residential property price index (RPPI) increased by 0,4% month-on-month in November 2022.

The main contributors to the 5,8% annual national inflation rate were Western Cape and Gauteng.

Western Cape increased by 7,4% year-on-year, and contributed 2,2 percentage points.

Gauteng increased by 3,6% year-on-year, and contributed 1,6 percentage points.

The RPPI for all metropolitan areas increased by 4,4% between November 2021 and November 2022. The main contributors to the 4,4% annual inflation rate for metropolitan areas were City of Cape Town and Ekurhuleni.

City of Cape Town increased by 5,2% year-on-year, and contributed 1,5 percentage points.

Ekurhuleni increased by 7,0% year-on-year, and contributed 0,9 of a percentage point.

Joe de Beer
Deputy Director-General: Economic Statistics

DETAILED RESULTS

Table 1 - Residential property price index: national and provincial indices

Province	Weight	Index (Dec 2020=100)			Percentage change	
		Nov 2021	Oct 2022	Nov 2022	Nov 2022 vs. Oct 2022	Nov 2022 vs. Nov 2021
National	100,00	105,9	111,5	112,0	0,4	5,8
Western Cape	29,00	107,4	114,5	115,4	0,8	7,4
Eastern Cape	5,23	104,3	110,8	111,5	0,6	6,9
Northern Cape	0,90	100,2	107,9	108,5	0,6	8,3
Free State	2,68	107,0	109,8	110,3	0,5	3,1
KwaZulu-Natal	11,62	105,2	110,4	110,7	0,3	5,2
North West	2,52	108,0	121,7	123,1	1,2	14,0
Gauteng	44,00	105,4	109,0	109,2	0,2	3,6
Mpumalanga	2,72	102,0	109,9	111,0	1,0	8,8
Limpopo	1,33	108,0	124,0	124,5	0,4	15,3

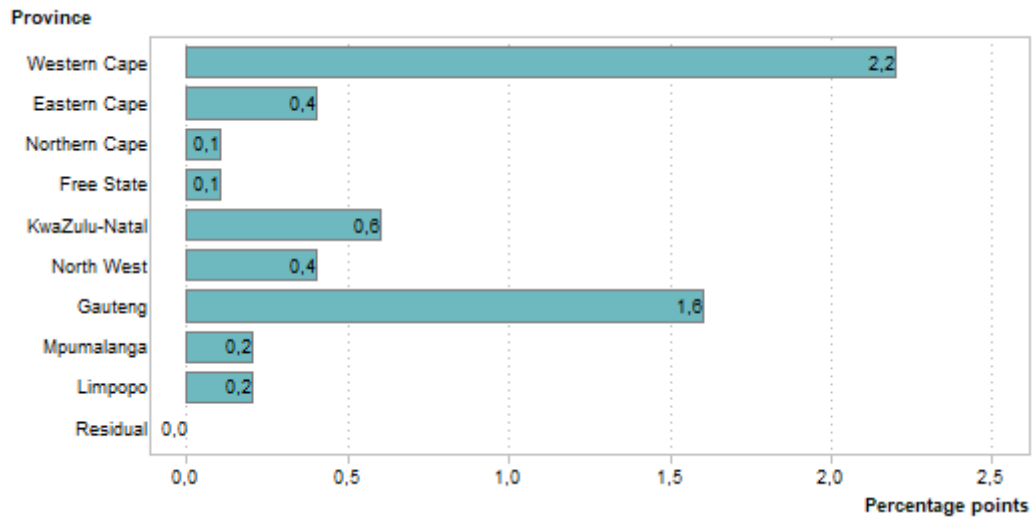### Figure 1.1 - Contributions to the annual percentage change in the national RPPI

Figure 1.2 - Contributions to the monthly percentage change in the national RPPI
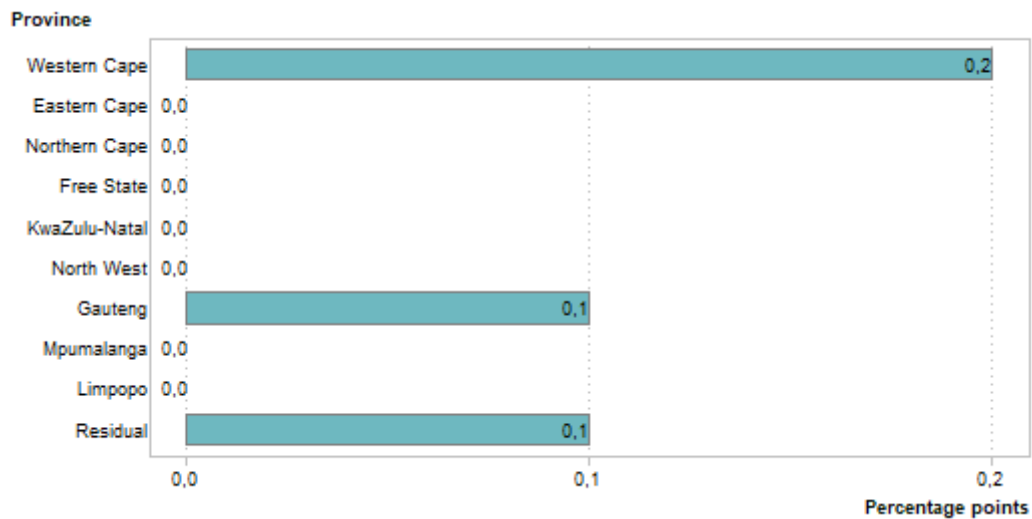
Table 2 - RPPI national indices and annual percentage changes

Table 2.1 - RPPI national index numbers (Dec 2020=100)[1]

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average[2]
2017	82,3	82,8	83,3	83,8	84,3	84,8	85,2	85,7	86,3	86,9	87,5	88,0	85,1
2018	88,5	88,8	89,0	89,2	89,5	89,8	90,2	90,5	90,8	91,0	91,1	91,2	90,0
2019	91,4	91,6	91,9	92,1	92,2	92,2	92,2	92,2	92,2	92,4	92,6	92,9	92,2
2020	93,2	93,5	94,0	94,6	95,4	96,3	97,2	97,9	98,5	98,9	99,4	100,0	96,6
2021	100,7	101,4	102,1	102,6	103,1	103,6	104,0	104,4	104,9	105,4	105,9	106,5	103,7
2022	107,0	107,4	107,9	108,3	108,8	109,2	109,7	110,3	110,9	111,5	112,0	..	..

Table 2.2 - RPPI national year-on-year rates

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average[2]
2017	5,8	5,9	6,0	6,2	6,4	6,7	6,6	6,7	6,9	7,2	7,4	7,4	6,6
2018	7,5	7,2	6,8	6,4	6,2	5,9	5,9	5,6	5,2	4,7	4,1	3,6	5,8
2019	3,3	3,2	3,3	3,3	3,0	2,7	2,2	1,9	1,5	1,5	1,6	1,9	2,4
2020	2,0	2,1	2,3	2,7	3,5	4,4	5,4	6,2	6,8	7,0	7,3	7,6	4,8
2021	8,0	8,4	8,6	8,5	8,1	7,6	7,0	6,6	6,5	6,6	6,5	6,5	7,3
2022	6,3	5,9	5,7	5,6	5,5	5,4	5,5	5,7	5,7	5,8	5,8	..	..

[1] The latest 12 months' data are preliminary.
[2] Annual average.

Figure 2 - RPPI national index numbers and year-on-year rates

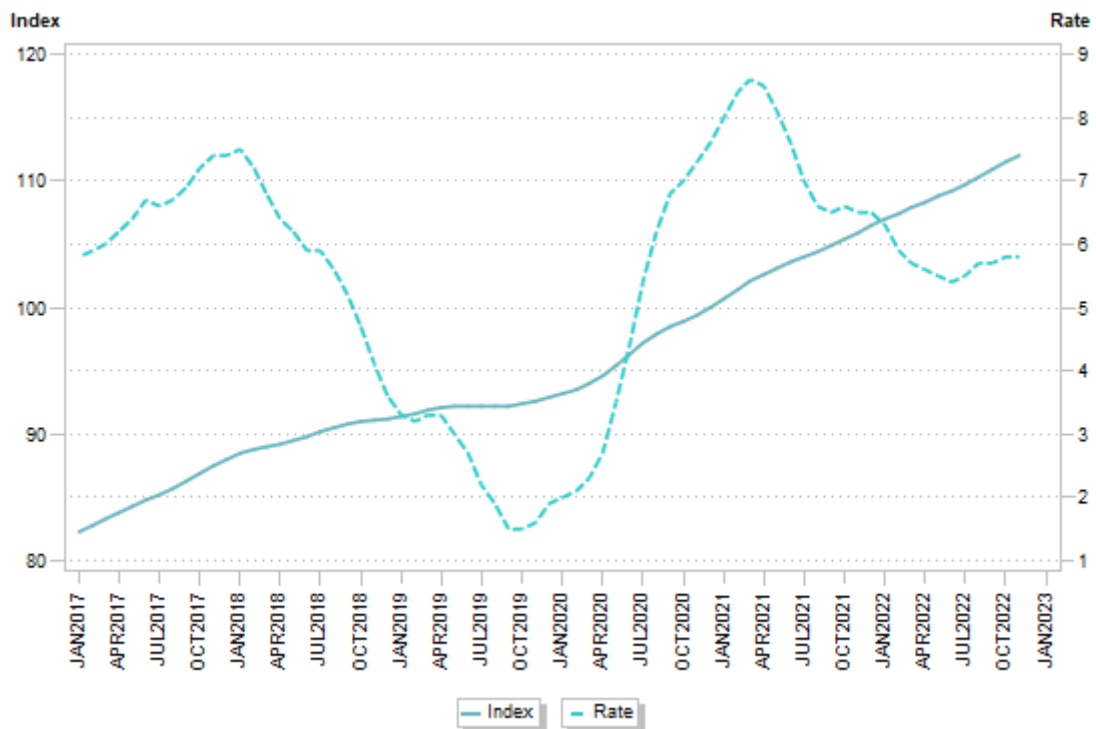## Table 3 - Metropolitan areas indices and annual percentage changes

Metropolitan area	Weight	Index (Dec 2020=100)			Percentage change	
		Nov 2021	Oct 2022	Nov 2022	Nov 2022 vs. Oct 2022	Nov 2022 vs. Nov 2021
All metropolitan areas	100,00	105,7	109,9	110,4	0,5	4,4
City of Cape Town	28,21	106,6	111,3	112,1	0,7	5,2
Buffalo City	2,09	100,8	111,3	111,9	0,5	11,0
Nelson Mandela Bay	4,13	106,2	110,5	111,3	0,7	4,8
Mangaung	2,70	105,7	108,6	109,0	0,4	3,1
eThekwini	10,56	104,9	109,7	109,9	0,2	4,8
Ekurhuleni	12,37	105,9	112,8	113,3	0,4	7,0
City of Johannesburg	23,89	103,2	105,4	105,7	0,3	2,4
City of Tshwane	16,05	108,1	111,1	111,1	0,0	2,8

Figure 3.1 - Contributions to the annual percentage change in the RPPI for all metropolitan areas
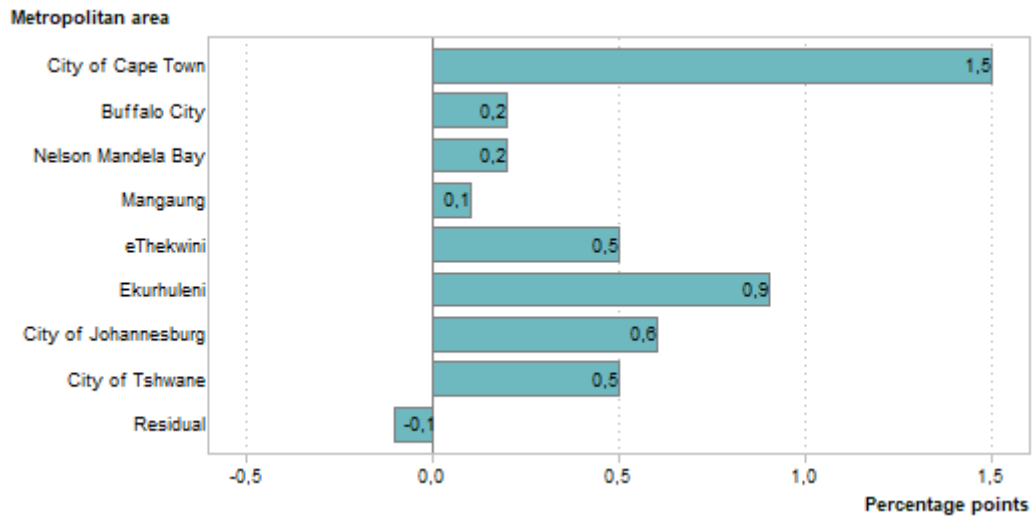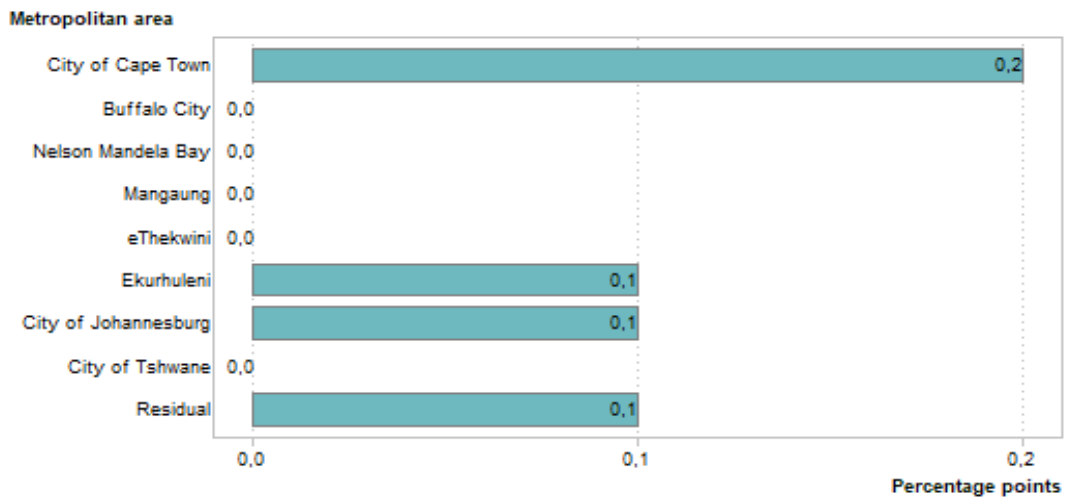

Figure 3.2 - Contributions to the monthly percentage change in the RPPI for all metropolitan areas

EXPLANATORY NOTES

Purpose of the survey	The RPPI aims to measure the rate at which the prices of residential properties purchased by households change over time. It measures this rate at national, provincial and metropolitan municipality levels.
Scope of the survey	Both new and existing dwellings are covered. Only market prices from actual transactions are considered. They include the price of the land on which residential buildings are located.
Data source	The primary source data used to estimate the RPPI comes from the Office of the Chief Registrar of Deeds (Deeds office). It is an administrative record of all property transactions in South Africa.
The model	The time dummy hedonic regression method was used to estimate the indices.
	According to this method, regression analysis is used to describe the relation between the prices set by the market for residential property and the available characteristics.
	The prices and characteristics of all dwellings for 12 months are pooled in the same regression and a dummy variable is established for each period. The estimated coefficients of these dummy variables are used to derive the index.
	The resulting indices show a high level of volatility and in order to provide a more meaningful interpretation of changes in the index, a smoothing algorithm (a Henderson filter) is applied.
Revisions	The RPPIs for the latest 12 months are preliminary and subject to revision.
Weights	The sales values of the most recent complete calendar year are calculated from the Deeds office data and are used to compile the weights. The 'most recent complete calendar year' refers to the most recent calendar year that is no longer open for revision. The weights in this publication are based on the sales values for 2020.
	Weights will be updated annually with effect from the January RPPI each year.

Further information on the sources of information, weighting structure and methods of compilation of the RPPI can be found in the RPPI sources and methods document available on the Stats SA website at:
https://www.statssa.gov.za/?page_id=2528

GLOSSARY

Annual percentage change	The annual percentage change is the change in the index of the relevant month of the current year compared with the index of the same month in the previous year expressed as a percentage.
Average annual percentage change	The average annual percentage change is the change in the average index of one year compared with the average index of the previous year expressed as a percentage.
Chain linking	The construction of a continuous price series by multiplying together price indices that have been calculated using different weights reference periods. The resulting index is referred to as a chained index. Linking is intended to ensure that the individual indices on all levels show the correct development through time, but leads to non-additivity. The RPPI is chained annually as new weights are implemented.
Metropolitan municipality	Local authority that has a municipal executive and legislative authority in an area that includes more than one municipality, as described in section 155(1) of the Constitution as a category A municipality.
Monthly percentage change	The monthly percentage change is the change in the index of the relevant month compared with the index of the previous month expressed as a percentage.
Residential Property Price Index	Residential property price indices measure the changes in the price of residential properties.

GENERAL INFORMATION

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Issue	Expected release date
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January 2023	8 June 2023
February 2023	13 July 2023

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Enquiries

Technical enquiries	Matlhatsi Mogalanyane / Patrick Kelly
Telephone number	(012) 310 4723 / 310 8290
	(012) 310 8600 / 8390 / 8351 / 4892 / 8496 / 8095 (user)
	(012) 310 8490 (library)
Email	MatlhatsiR@statssa.gov.za (technical enquiries)
	info@statssa.gov.za (user information services)
	distribution@statssa.gov.za (orders)
Postal address	Private Bag X44, Pretoria, 0001

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